

Product name : JP-5
Product code: 40711

Date of issue:24/11/2015.
Version:8

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Trade name : JP-5
Chemical name : Kerosine (petroleum)
Type : Hydrocarbons Mixture.
Product code : 40711

1.2 Relevant identified uses of the substance or mixture and uses advised against**Identified uses**

Distribution of substance - Industrial (Kerosene)
Explosives manufacture and use-Professional (Kerosene)
Formulation and (re)packing of substances and mixtures - Industrial (Kerosene)
Manufacture of substance -Industrial
Metal working fluids/rolling oils -Industrial (Kerosene)
Metal working fluids/rolling oils-Professional (Kerosene)
Road and construction applications -Professional (Kerosene)
Use as a fuel-Consumer (Kerosene)
Use as a fuel -Industrial (Kerosene)
Use as a fuel-Professional (Kerosene)
Use as an intermediate. -Industrial (Kerosene)
Use as binders and release agents -Industrial (Kerosene)
Use as binders and release agents-Professional (Kerosene)
Use as functional fluids. -Industrial (Kerosene)
Use in Agrochemicals-Consumer (Kerosene)
Use in Agrochemicals - Professional (Kerosene)
Use in Cleaning Agents - Consumer (Kerosene)
Use in Cleaning Agents - Industrial (Kerosene)
Use in Cleaning Agents - Professional (Kerosene)
Use in Lubricants. - Professional (Kerosene): high Environmental Release Category
Use in Lubricants. - Professional (Kerosene): low Environmental Release Category
Use in Lubricants. - Consumer (Kerosene): high Environmental Release Category
Use in Lubricants. - Consumer (Kerosene): low Environmental Release Category
Use in Lubricants. - Industrial (Kerosene)
Uses in Coatings - Consumer (Kerosene)
Uses in Coatings - Industrial (Kerosene)
Uses in Coatings - Professional (Kerosene)

1.3 Details of the supplier of the safety data sheet

Supplier/Manufacturer, : Compañía Española de Petróleos, S.A.U.
Distributor or Importer : Torre CEPSA, Paseo de la Castellana 259 A
Product : 28046 Madrid - España
Email : tuteladeproducto@cepsa.com / productstewardship@cepsa.com
Telephone number : +34 913 376 000
Hours of operation / : 07:30 - 19:30 (CET)
Information limitations

1.4 Emergency telephone number 24h

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Region / Country	Language	Telephone number
Europe	English, Albanian, Bulgarian, Czech, Danish, Dutch, Finnish, French, German, Greek, Hungarian, Italian, Lithuanian, Norwegian, Polish, Portuguese, Romanian, Russian, Serbo-Croatian, Slovak, Spanish, Swedish, Turkish, Ukrainian	+44 1235 239670
Spain	English, Spanish	+34 91 114 2520

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Result Classification : The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS] : Flam. Liq. 3, H226
Skin Irrit. 2, H315
Eye Irrit. 2, H319
STOT SE 3, H336 (Narcotic effects)
Asp. Tox. 1, H304
Aquatic Chronic 2, H411

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H226 Flammable liquid and vapor.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H336 May cause drowsiness and dizziness.
H304 May be fatal if swallowed and enters airways.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.
P273 - Avoid release to the environment.

Response : IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

Storage : Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazardous ingredients : Kerosine (petroleum)

Supplemental label elements : Not applicable.

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Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings : Not applicable.

Tactile warning of danger : Not applicable.

2.3 Other hazards

Other hazards which do not result in classification : None known.

SECTION 3: Composition/information on ingredients

Substance/Mixture : Mixture

Description : A complex combination of hydrocarbons produced by the distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 through C16 and boiling in the range of approximately 150°C to 290°C (320°F to 554°F).

Product/ingredient name	Identifiers	%	Classification	
			Regulation (EC) No. 1272/2008 [CLP]	Type
1) Kerosine (petroleum)	REACH #: 01-2119485517-27 EC: 232-366-4 CAS: 8008-20-6 Index: 649-404-00-4	>=90	Flam. Liq. 3, H226 Skin Irrit. 2, H315 STOT SE 3, H336 (Narcotic effects) Asp. Tox. 1, H304 Aquatic Chronic 2, H411	[1]
2) 2-(2-methoxyethoxy)ethanol	EC: 203-906-6 CAS: 111-77-3 Index: 603-107-00-6	<0,5	Eye Irrit. 2, H319 Repr. 2, H361d (Unborn child)	[1][2]
			See Section 16 for the full text of the H statements declared above.	

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs or vPvBs or have been assigned a workplace exposure limit and hence require reporting in this section.

If no REACH registration numbers are shown, either the substance is exempted from registration, does not exceed the minimum volume threshold that requires registration, still has no deadline for registration or such information is private.

Type

- [1] Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- [5] Substance of equivalent concern

Occupational exposure limits, if available, are listed in Section 8.

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SECTION 4: First aid measures

4.1 Description of first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

4.2 Most important symptoms and effects, both acute and delayed**Potential acute health effects**

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

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Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : Adverse symptoms may include the following:
nausea or vomiting

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable : Use dry chemical, CO₂, water spray (fog) or foam.

Not suitable : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : No specific data.

5.3 Advice for firefighters

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

Fire-fighting measures : Shut off all ignition sources. If fire cannot be extinguished, withdraw from area and allow the fire to burn. Use water spray to keep fire-exposed containers cool.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

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For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

6.3 Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not swallow. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

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Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Seveso II Directive - Reporting thresholds (in tonnes)**Named substances**

Name	Notification and MAPP threshold	Safety report threshold
Petroleum products and alternative fuels (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams) (d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)	2500	25000

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters**Occupational exposure limits**

Product/ingredient name	Exposure limit values
2-(2-methoxyethoxy)ethanol	INSHT (Spain, 1/2015). Absorbed through skin. TWA: 10 ppm 8 hours. TWA: 50,1 mg/m ³ 8 hours.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Derived effect levels

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Product/ingredient name	Type	Exposure	Value	Population	Effects
Kerosine (petroleum)	DNEL	Long term Oral	19 mg/kg bw/day	Consumers	Systemic
Kerosine (petroleum)	DNEL	Long term Oral	19 mg/kg bw/day	Consumers	Systemic

Predicted effect concentrations

No PECs available.

8.2 Exposure controls

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. Recommended: Safety glasses. Pursuant to EN-166:01 standard.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. > 8 hours (breakthrough time): Chemical-resistant gloves. Nitrile gloves.

Body protection : Protective clothing Pursuant to EN-340:93 standard.

Other skin protection : Suitable protective footwear.

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**

Physical state : Liquid. [Viscous liquid.]
Color : Yellow. [Light]
Odor : Characteristic.
Odor threshold : Not available.
pH : Not available.
Melting point/freezing point : -47°C

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Initial boiling point and boiling range : 175 to 325°C
Flash point : Closed cup: 61°C
Evaporation rate : 0,212138 (butyl acetate = 1)
Flammability (solid, gas) : Not available.
Burning time : Not applicable.
Burning rate : Not applicable.
Upper/lower flammability or explosive limits : Lower: 0,7%
Upper: 5%
Vapor pressure : >1,1 kPa [room temperature]
Vapor density : 4,5 [Air = 1]
Relative density : 0,788 to 0,845
Density : Not available.
Solubility(ies) : Insoluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/ water : Not available.
Auto-ignition temperature : 228,85°C
Decomposition temperature : Not available.
Viscosity : Kinematic (40°C): <0,07 cm²/s
Explosive properties : Not available.
Oxidizing properties : Not available.

9.2 Other information

Heat of combustion : -42600 kJ/g

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : The product is stable.

10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.

10.5 Incompatible materials : Reactive or incompatible with the following materials:
oxidizing materials

10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Kerosine (petroleum)	LC50 Inhalation Vapor	Rat	>5280 mg/m ³	4 hours
	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	15 g/kg	-
Kerosine (petroleum)	LD50 Oral	Rat	15 g/kg	-

Conclusion/Summary : Not classified. Based on available data, the classification criteria are not met.

Acute toxicity estimates

Not available.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Kerosine (petroleum)	Skin - Moderate irritant	Rabbit	-	-	-
Kerosine (petroleum)	Skin - Moderate irritant	Rabbit	-	24 hours 100 Percent	-
	Skin - Moderate irritant	Rabbit	-	0.5 Milliliters	-
	Skin - Severe irritant	Rabbit	-	500 milligrams	-
	Skin - Severe irritant	Rabbit	-	500 milligrams	-
2-(2-methoxyethoxy)ethanol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	500 milligrams	-

Conclusion/Summary:

Skin : Irritating to skin.

Sensitization

Product/ingredient name	Route of exposure	Species	Result
Kerosine (petroleum)	skin	Guinea pig	Not sensitizing
Kerosine (petroleum)	skin	Guinea pig	Not sensitizing

Conclusion/Summary:

Skin : Not classified. Based on available data, the classification criteria are not met.

Mutagenicity

Product/ingredient name	Test	Experiment	Result
Kerosine (petroleum)	-	Subject: Mammalian-Animal	Negative
	-	Experiment: In vitro	Negative
Kerosine (petroleum)	-	Subject: Bacteria	Negative
	-	Experiment: In vitro	Negative
Kerosine (petroleum)	-	Subject: Mammalian-Animal	Negative
	-	Experiment: In vitro	Negative
Kerosine (petroleum)	-	Subject: Bacteria	Negative
	-	Experiment: In vitro	Negative

Conclusion/Summary : Not classified. Based on available data, the classification criteria are not met.

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Kerosine (petroleum)	Negative - Dermal - TCLo	Mouse	250 mg/kg	-
Kerosine (petroleum)	Negative - Dermal - TCLo	Mouse	250 mg/kg	-

Conclusion/Summary : Not classified. Based on available data, the classification criteria are not met.

Reproductive toxicity

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Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure
Kerosine (petroleum)	-	Negative	-	Rat	Dermal	-
	-	-	Negative	Rat	Oral	-
Kerosine (petroleum)	-	Negative	-	Rat	Dermal	-
	-	-	Negative	Rat	Oral	-

Conclusion/Summary : Not classified. Based on available data, the classification criteria are not met.

Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Kerosine (petroleum)	Negative - Inhalation	Rat	-	-
Kerosine (petroleum)	Negative - Inhalation	Rat	-	-

Conclusion/Summary : Not classified. Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Kerosine (petroleum)	Category 3	Not applicable.	Narcotic effects

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Product/ingredient name	Result
Kerosine (petroleum)	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
 pain or irritation
 watering
 redness
- Inhalation** : Adverse symptoms may include the following:
 nausea or vomiting
 headache
 drowsiness/fatigue
 dizziness/vertigo
 unconsciousness
- Skin contact** : Adverse symptoms may include the following:
 irritation
 redness
- Ingestion** : Adverse symptoms may include the following:
 nausea or vomiting

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Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Potential chronic health effects

Product/ingredient name	Result	Species	Dose	Exposure
Kerosine (petroleum)	Sub-acute NOAEL Inhalation Vapor	Rat	>1000 mg/m ³	90 days
Kerosine (petroleum)	Sub-acute NOAEL Inhalation Vapor	Rat	>1000 mg/m ³	90 days

Conclusion/Summary : STOT-SE = Specific Target Organ Toxicity - Single Exposure Human evidence Exposure high concentrations May cause drowsiness and dizziness.
 STOT-RE = Specific Target Organ Toxicity - Repeated Exposure Not classified.
 Based on available data, the classification criteria are not met.

General : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Other information : Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Kerosine (petroleum)	Acute EC50 1,4 mg/l	Daphnia	48 hours
	Acute LC50 2 mg/l	Fish	96 hours
	Chronic NOEC 0,48 mg/l	Daphnia	21 days
	Chronic NOEC 0,1 mg/l	Fish	28 days
Kerosine (petroleum)	Acute EC50 1,4 mg/l	Daphnia	48 hours
	Acute LC50 2 mg/l	Fish	96 hours
	Chronic NOEC 0,48 mg/l	Daphnia	21 days
	Chronic NOEC 0,1 mg/l	Fish	28 days
2-(2-methoxyethoxy)ethanol	Acute EC50 >930 ppm Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 7500000 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours

Conclusion/Summary : Toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

Conclusion/Summary : Hydrocarbon. Mixture

12.3 Bioaccumulative potential

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Product/ingredient name	LogP _{ow}	BCF	Potential
2-(2-methoxyethoxy)ethanol	-0,47	-	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.
P: Not applicable. B: Not applicable. T: Not applicable.

vPvB : vP: Not applicable. vB: Not applicable.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods**Product**

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : The classification of the product may meet the criteria for a hazardous waste.

Packaging








Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

Product name : JP-5
Product code: 40711

Date of issue: 24/11/2015.
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	ADR/RID	ADN	IMDG	IATA
14.1 UN number	UN1223	UN1223	UN1223	UN1223
14.2 UN proper shipping name	KEROSENE	KEROSENE	KEROSENE. Marine pollutant (Kerosine (petroleum))	Kerosene
14.3 Transport hazard class(es)	3  	3  	3  	3 
14.4 Packing group	III	III	III	III
14.5 Environmental hazards	Yes.	Yes.	Yes.	No.
14.6 Special precautions for user	Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.	Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.	Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.	Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
Additional information	<p>The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.</p> <p><u>Hazard identification number</u> 30</p> <p><u>Limited quantity</u> 5 L</p> <p><u>Tunnel code</u> (D/E)</p>	<p>The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.</p>	<p>The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.</p> <p><u>Emergency schedules (EmS)</u> F-E, S-E</p> <p><u>Special provisions</u> 223</p>	<p>The environmentally hazardous substance mark may appear if required by other transportation regulations.</p> <p><u>Passenger and Cargo Aircraft</u> Quantity limitation: 60 L Packaging instructions: 355</p> <p><u>Cargo Aircraft Only</u> Quantity limitation: 220 L Packaging instructions: 366</p> <p><u>Limited Quantities - Passenger Aircraft</u> Quantity limitation: 10 L Packaging instructions: Y344</p> <p><u>Special provisions</u> A224</p>

Product name : JP-5
Product code: 40711

Date of issue:24/11/2015.
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14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

: This product is not listed in Annex II of MARPOL.

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

EU Regulation (EC) No. 1907/2006 (REACH)

International Convention for the Prevention of Pollution From Ships, MARPOL 73 in its amended form.

International Maritime Dangerous Goods (Code IMDG) according to chapter VII of the International Convention for the Safety of Life at Sea, 1974.

Annex XIV - List of substances subject to authorization**Annex XIV**

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions : Not applicable.
**on the manufacture,
placing on the market
and use of certain
dangerous substances,
mixtures and articles**

Other EU regulations

Europe inventory : All components are listed or exempted.

Product/ingredient name	Carcinogenic effects	Mutagenic effects	Developmental effects	Fertility effects
2-(2-methoxyethoxy) ethanol	-	-	Repr. 2, H361d (Unborn child)	-

Seveso II Directive

This product is controlled under the Seveso II Directive.

Named substances

Name
Petroleum products and alternative fuels (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams) (d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)

International regulations**Chemical Weapon Convention List Schedules I, II & III Chemicals**

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Inform Consent (PIC)

Not listed.

Product name : JP-5
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UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

International lists

National inventory

- Australia** : All components are listed or exempted.
- Canada** : Not determined.
- China** : All components are listed or exempted.
- Japan** : Not determined.
- Malaysia** : All components are listed or exempted.
- New Zealand** : All components are listed or exempted.
- Philippines** : All components are listed or exempted.
- Republic of Korea** : All components are listed or exempted.
- Taiwan** : All components are listed or exempted.
- United States** : **United States inventory (TSCA 8b)**: All components are listed or exempted.

15.2 Chemical Safety Assessment : Complete.

SECTION 16: Other information

🔍 Mark Blue. Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
 DNEL = Derived No Effect Level
 EUH statement = CLP-specific Hazard statement
 PNEC = Predicted No Effect Concentration
 RRN = REACH Registration Number

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H336 (Narcotic effects) Asp. Tox. 1, H304 Aquatic Chronic 2, H411	Expert judgment On basis of test data On basis of test data Calculation method Calculation method Expert judgment

Full text of abbreviated H statements : H226 Flammable liquid and vapor.
 H304 May be fatal if swallowed and enters airways.
 H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H336 (Narcotic effects) May cause drowsiness and dizziness. (Narcotic effects)
 H361d (Unborn child) Suspected of damaging the unborn child.
 H411 Toxic to aquatic life with long lasting effects.

Full text of classifications [CLP/GHS] : Aquatic Chronic 2, H411 AQUATIC HAZARD (LONG-TERM) - Category 2
 Asp. Tox. 1, H304 ASPIRATION HAZARD - Category 1
 Eye Irrit. 2, H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
 Flam. Liq. 3, H226 FLAMMABLE LIQUIDS - Category 3
 Repr. 2, H361d (Unborn child) TOXIC TO REPRODUCTION (Unborn child) - Category 2
 Skin Irrit. 2, H315 SKIN CORROSION/IRRITATION - Category 2
 STOT SE 3, H336 (Narcotic effects) SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

Date of printing : 24/11/2015.

Product name : **JP-5**
Product code: **40711**

Date of issue:24/11/2015.
Version:8

Date of issue/ Date of revision : 24/11/2015.

Date of previous issue : 24/11/2015.

Version : 8

Notice to reader:

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Remarks:

For maritime transport, the Safety Data Sheet does not need to include the Annex with the Exposure Scenarios that begins in the next page. The total number of pages indicated takes into account this Annex.

Annex to the extended Safety Data Sheet (eSDS)

Consumer

Identification of the substance or mixture

Product definition : Mixture
Code : 40711
Product name : JP-5

Section 1: - Title

Short title of the exposure scenario : Use as a Fuel - Consumer (Kerosene)
List of use descriptors : **Identified use name:** Use as a fuel-Consumer (Kerosene)
Sector of end use: SU21
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC09a, ERC09b, ESVOC SpERC 9.12c.v1
Market sector by type of chemical product: PC13
Environmental contributing scenarios : **Use as a fuel**
Health Contributing Scenarios : **Use as a fuel**

Industry Association : Concawe
Processes and activities covered by the exposure scenario : Covers consumer uses in liquid fuels.

Section 2: - Exposure controls

Contributing scenario controlling environmental exposure for 0: Use as a fuel

Product characteristics : Substance is complex UVCB Predominantly hydrophobic
Amounts used : Fraction of EU tonnage used in region:0.1
Regional use tonnage (tonnes/year):1.8e5
Fraction of Regional tonnage used locally:0.0005
Annual site tonnage (tonnes/year):89
Maximum daily site tonnage (kg/day):245
Frequency and duration of use : Continuous release.
Emission Days (days/year):365
Environment factors not influenced by risk management : Local freshwater dilution factor:10
Local marine water dilution factor:100
Other given operational conditions affecting environmental exposure : Release fraction to air from wide dispersive use (regional only):1.0e-3
Release fraction to wastewater from wide dispersive use:0.00001
Release fraction to air from wide dispersive use (regional only):0.00001
Conditions and measures related to municipal sewage treatment plant : Risk from environmental exposure is driven by freshwater.
Estimated substance removal from wastewater via on-site sewage treatment (%):94.7
Maximum allowable site tonnage (M_{safe}) based on release following total wastewater treatment removal (kg/d):3.1e4
Assumed on-site sewage treatment plant flow (m^3/d):2000
Conditions and measures related to external treatment of waste for disposal : Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment.
Conditions and measures related to external recovery of waste : This substance is consumed during use and no waste from the substance is generated.

Contributing scenario controlling consumer exposure for 0: Use as a fuel

Concentration of substance in mixture or article	: Unless otherwise stated. Covers concentrations up to 100%
Physical state	: Liquid, vapour pressure 0.5 - 10 kPa at STP.
Amounts used	: Unless otherwise stated. Covers use up to 50000g Covers skin contact area up to 420cm ²
Frequency and duration of use	: Unless otherwise stated. Covers use up to 0.143 Time (d):/day(s) Covers exposure up to 2 hr/Single event.
Other given operational conditions affecting consumers exposure	: Assumes activities are at ambient temperature (unless stated differently). Covers use in room size of 20m ³ Use with adequate ventilation.
Conditions and measures related to information and behavioural advice to consumers	: Product Category(ies)-Operational conditions and risk management measures Fuel.-Liquid: Automotive Refuelling Unless otherwise stated, Covers concentrations up to 100% Covers use up to 52days/year Covers use up to 1 application per day Covers skin contact area up to 210.00 cm ² For each use event, covers use amounts up to 50000g Covers outdoor use. Covers use in room size of 100m ³ Covers exposure up to 0.05 hr/Single event. No specific risk management measure identified beyond those operational conditions stated. Fuel.-Liquid: Home space heater fuel Unless otherwise stated, Covers concentrations up to 100% Covers use up to 365 days/year Covers use up to 1 application per day Covers skin contact area up to 210.00 cm ² For each use event, covers use amounts up to 1500g Covers use under typical household ventilation. Covers use in room size of 20m ³ Covers exposure up to 0.03 hr/Single event. No specific risk management measure identified beyond those operational conditions stated. Fuel.-Liquid Garden Equipment - Use Unless otherwise stated, Covers concentrations up to 100% Covers use up to 26 days/year Covers use up to 1 application per day For each use event, covers use amounts up to 1000g Covers outdoor use. Covers use in room size of 100m ³ Covers exposure up to 2.00 hr/Single event. No specific risk management measure identified beyond those operational conditions stated. Fuel.-Liquid: Garden Equipment - Refuelling Unless otherwise stated, Covers concentrations up to 100% Covers use up to 26 days/year Covers use up to 1 application per day Covers skin contact area up to 420.00 cm ² For each use event, covers use amounts up to 1000g Covers use in a one car garage (34 m ³) under typical ventilation. Covers use in room size of 34m ³ Covers exposure up to 0.03 hr/Single event. No specific risk management measure identified beyond those operational conditions stated.

Conditions and measures related to personal protection and hygiene**Section 3: - Exposure estimation and reference to its source**

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 0: Use as a fuel

Exposure assessment (environment): : Not available.

Exposure estimation : The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure estimation and reference to its source - Consumers: 1: Use as a fuel

Exposure assessment (human): : Not available.

Exposure estimation : The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated.

Section 4: - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Further details on scaling and control technologies are provided in SpERC factsheet.

Health : Predicted exposures are not expected to exceed the applicable consumer reference values when the operational conditions/risk management measures given in section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : Not available.

Annex to the extended Safety Data Sheet (eSDS)

Consumer

Identification of the substance or mixture

Product definition : Mixture
Code : 40711
Product name : JP-5

Section 1: - Title

Short title of the exposure scenario : Use in Agrochemicals uses - Consumer (Kerosene)
List of use descriptors : **Identified use name:** Use in Agrochemicals-Consumer (Kerosene)
Sector of end use: SU21
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC08a, ERC08d, ESVOC SpERC 8.11b.v1
Market sector by type of chemical product: PC12, PC27, PC22 Lawn and Garden Preparations, including fertilizers
Environmental contributing scenarios : **Use in Agrochemicals**
Health Contributing Scenarios : **Use in Agrochemicals**

Industry Association : Concawe
Processes and activities covered by the exposure scenario : Covers the consumer use in agrochemicals in liquid and solid forms.

Section 2: - Exposure controls

Contributing scenario controlling environmental exposure for 0: Use in Agrochemicals

Product characteristics : Substance is complex UVCB Predominantly hydrophobic
Amounts used : Fraction of EU tonnage used in region:0.1
Regional use tonnage (tonnes/year):3.1e2
Fraction of Regional tonnage used locally:0.002
Annual site tonnage (tonnes/year):0.62
Maximum daily site tonnage (kg/day):1.7
Frequency and duration of use : Continuous release.
Emission Days (days/year):365
Environment factors not influenced by risk management : Local freshwater dilution factor:10
Local marine water dilution factor:100
Other given operational conditions affecting environmental exposure : Release fraction to air from wide dispersive use (regional only):0.9
Release fraction to wastewater from wide dispersive use:0.01
Release fraction to air from wide dispersive use (regional only):0.09
Conditions and measures related to municipal sewage treatment plant : Risk from environmental exposure is driven by freshwater.
Estimated substance removal from wastewater via on-site sewage treatment (%):94.7
Maximum allowable site tonnage (M_{safe}) based on release following total wastewater treatment removal (kg/d):2.1e2
Assumed on-site sewage treatment plant flow (m^3/d):2000
Conditions and measures related to external treatment of waste for disposal : External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste : External recovery and recycling of waste should comply with applicable local and/or national regulations.

Contributing scenario controlling consumer exposure for 0: Use in Agrochemicals

Concentration of substance in mixture or article	: Unless otherwise stated. Covers concentrations up to 50%
Physical state	: Liquid, vapour pressure 0.5 - 10 kPa at STP.
Amounts used	: Unless otherwise stated. Covers use up to 50g Covers skin contact area up to 857.5cm ²
Frequency and duration of use	: Unless otherwise stated. Covers use up to 1 application per day Covers exposure up to 0.5 hr/Single event.
Other given operational conditions affecting consumers exposure	: Assumes activities are at ambient temperature (unless stated differently). Covers use in room size of 20m ³ Use with adequate ventilation.
Conditions and measures related to information and behavioural advice to consumers	: Product Category(ies)-Operational conditions and risk management measures Fertilizers.-Lawn and garden preparations Unless otherwise stated, Covers concentrations up to 50% Covers use up to 365days/year Covers use up to 1 application per day Covers skin contact area up to 857.50 cm ² For each use event, assumes swallowed amount of 0.3g For each use event, covers use amounts up to 50g Covers outdoor use. Covers use in room size of 100m ³ Covers exposure up to 0.50 hr/Single event. No specific risk management measure identified beyond those operational conditions stated. Lawn and garden preparations Unless otherwise stated, Covers concentrations up to 50% Covers use up to 365 days/year Covers use up to 1 application per day Covers skin contact area up to 857.50 cm ² For each use event, assumes swallowed amount of 0.3g For each use event, covers use amounts up to 50g Covers outdoor use. Covers use in room size of 100m ³ Covers exposure up to 0.50 hr/Single event. No specific risk management measure identified beyond those operational conditions stated. Plant Protection-instant action (aerosol sprays) Unless otherwise stated, Covers concentrations up to 50% Covers use up to 365 days/year Covers use up to 4 application per day For each use event, covers use amounts up to 0.1g Covers use under typical household ventilation. Covers use in room size of 20m ³ Covers exposure up to 0.25 hr/Single event. No specific risk management measure identified beyond those operational conditions stated. Plant Protection-continuous action (solid and liquid) Unless otherwise stated, Covers concentrations up to 10% Covers use up to 365 days/year Covers use up to 1 application per day Covers skin contact area up to 35.70 cm ² For each use event, covers use amounts up to 0.48g Covers use under typical household ventilation. Covers use in room size of 20m ³ Covers exposure up to 8hr/Single event. No specific risk management measure identified beyond those operational conditions stated. Plant Protection-aerosol spray application Unless otherwise stated, Covers concentrations up to 30% Covers use up to 110days/year Covers use up to 1 application per day Covers skin contact area up to 35.73 cm ² For each use event, covers use amounts up to 85.05g Covers use under typical household ventilation. Covers use in room size of 20m ³ Covers exposure up to 4 hr/Single event. No specific risk management measure identified beyond those operational conditions stated.
Conditions and measures related to personal protection and hygiene	

Section 3: - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: Use in Agrochemicals

Exposure assessment (environment): : Not available.

Exposure estimation : The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure estimation and reference to its source - Consumers: 0: Use in Agrochemicals

Exposure assessment (human): : Not available.

Exposure estimation : The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated.

Section 4: - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Further details on scaling and control technologies are provided in SpERC factsheet.

Health : Predicted exposures are not expected to exceed the applicable consumer reference values when the operational conditions/risk management measures given in section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : Not available.

Annex to the extended Safety Data Sheet (eSDS)

Consumer

Identification of the substance or mixture

Product definition : Mixture
Code : 40711
Product name : JP-5

Section 1: - Title

Short title of the exposure scenario : Use in Cleaning Agents - Consumer (Kerosene)
List of use descriptors : **Identified use name:** Use in Cleaning Agents - Consumer (Kerosene)
Sector of end use: SU21
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC08a, ERC08d, ESVOC SpERC 8.4c.v1
Market sector by type of chemical product: PC03, PC04, PC09a, PC24, PC35, PC38
Environmental contributing scenarios : **Use in Cleaning Agents**
Health Contributing Scenarios : **Use in Cleaning Agents**

Industry Association : Concawe
Processes and activities covered by the exposure scenario : Covers general exposures to consumers arising from the use of household products sold as washing and cleaning products, aerosols, coatings, de-icers, lubricants and air-care products.

Section 2: - Exposure controls

Contributing scenario controlling environmental exposure for 0: Use in Cleaning Agents
Product characteristics : Substance is complex UVCB Predominantly hydrophobic
Amounts used : Fraction of EU tonnage used in region:0.1
Regional use tonnage (tonnes/year):1.5e3
Fraction of Regional tonnage used locally:0.0005
Annual site tonnage (tonnes/year):7.4e-1
Maximum daily site tonnage (kg/day):2.02
Frequency and duration of use : Continuous release.
Emission Days (days/year):365
Environment factors not influenced by risk management : Local freshwater dilution factor:10
Local marine water dilution factor:100
Other given operational conditions affecting environmental exposure : Release fraction to air from wide dispersive use (regional only):0.95
Release fraction to wastewater from wide dispersive use:0.025
Release fraction to air from wide dispersive use (regional only):0.025
Conditions and measures related to municipal sewage treatment plant : Risk from environmental exposure is driven by freshwater.
Estimated substance removal from wastewater via on-site sewage treatment (%):94.7
Maximum allowable site tonnage (M_{safe}) based on release following total wastewater treatment removal (kg/d):2.4e2
Assumed on-site sewage treatment plant flow (m^3/d):2000
Conditions and measures related to external treatment of waste for disposal : External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste : External recovery and recycling of waste should comply with applicable local and/or national regulations.

Contributing scenario controlling consumer exposure for 0: Use in Cleaning Agents

Concentration of substance in mixture or article	: Unless otherwise stated. Covers concentrations up to 100%
Physical state	: Liquid, vapour pressure 0.5 - 10 kPa at STP.
Amounts used	: Unless otherwise stated. Covers use up to 2760g Covers skin contact area up to 857.5cm ²
Frequency and duration of use	: Unless otherwise stated. Covers use up to 4 application per day Covers exposure up to 8 hr/Single event.
Other given operational conditions affecting consumers exposure	: Assumes activities are at ambient temperature (unless stated differently). Covers use in room size of 20m ³ Use with adequate ventilation.
Conditions and measures related to information and behavioural advice to consumers	: Product Category(ies)-Operational conditions and risk management measures Air care products-Air care, instant action (aerosol sprays) Unless otherwise stated, Covers concentrations up to 50% Covers use up to 365days/year Covers use up to 4 application per day For each use event, covers use amounts up to 0.1g Covers use under typical household ventilation. Covers use in room size of 20m ³ Covers exposure up to 0.25 hr/Single event. No specific risk management measure identified beyond those operational conditions stated. Air care products-Air care, continuous action (solid and liquid) Unless otherwise stated, Covers concentrations up to 10% Covers use up to 365 days/year Covers use up to 1 application per day Covers skin contact area up to 35.70 cm ² For each use event, covers use amounts up to 0.48g Covers use under typical household ventilation. Covers use in room size of 20m ³ Covers exposure up to 8.00 hr/Single event. No specific risk management measure identified beyond those operational conditions stated. Anti-Freeze and de-icing products-Washing car window Unless otherwise stated, Covers concentrations up to 5% Covers use up to 365 days/year Covers use up to 1 application per day For each use event, covers use amounts up to 0.5g Covers use in a one car garage (34 m ³) under typical ventilation. Covers use in room size of 34m ³ Covers exposure up to 0.02 hr/Single event. No specific risk management measure identified beyond those operational conditions stated. Anti-Freeze and de-icing products-Pouring into radiator Unless otherwise stated, Covers concentrations up to 10% Covers use up to 13 days/year Covers use up to 1 application per day Covers skin contact area up to 428.00 cm ² For each use event, covers use amounts up to 2000g Covers use in a one car garage (34 m ³) under typical ventilation. Covers use in room size of 34m ³ Covers exposure up to 0.17hr/Single event. No specific risk management measure identified beyond those operational conditions stated. Anti-Freeze and de-icing products-Lock de-icer Unless otherwise stated, Covers concentrations up to 50% Covers use up to 55 days/year Covers use up to 1 application per day Covers skin contact area up to 240.40 cm ² For each use event, covers use amounts up to 4g Covers use in a one car garage (34 m ³) under typical ventilation. Covers use in room size of 34m ³ Covers exposure up to 0.25 hr/Single event. No specific risk management measure identified beyond those operational conditions stated. Biocidal products (e.g. Disinfectants, pest control)-Laundry and dish-washing products Unless otherwise stated, Covers concentrations up to 60% Covers use up to 365 days/year Covers use up to 1 application per day Covers skin contact area up to 857.50 cm ² For each use event, covers use amounts up to 15g Covers use under typical household ventilation. Covers use in room size of 20m ³ Covers exposure up to 0.50 hr/Single event. No specific risk management measure identified beyond those operational conditions stated.

Biocidal products (e.g. Disinfectants, pest control)-Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners)

Unless otherwise stated, Covers concentrations up to 50% Covers use up to 128 days/year Covers use up to 1 application per day Covers skin contact area up to 857.50 cm² For each use event, covers use amounts up to 27g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 0.33 hr/Single event.

No specific risk management measure identified beyond those operational conditions stated.

Biocidal products (e.g. Disinfectants, pest control)-Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)

Unless otherwise stated, Covers concentrations up to 20% Covers use up to 128 days/year Covers use up to 1 application per day Covers skin contact area up to 214.40 cm² For each use event, covers use amounts up to 35g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 0.17 hr/Single event.

No specific risk management measure identified beyond those operational conditions stated.

PC09 Coatings and Paints, Fillers, Putties, Thinners-Water-borne latex wall paint

Unless otherwise stated, Covers concentrations up to 50% Covers use up to 4 days/year Covers use up to 1 application per day Covers skin contact area up to 428.75 cm² For each use event, covers use amounts up to 2760g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 2.20 hr/Single event.

No specific risk management measure identified beyond those operational conditions stated.

PC09 Coatings and Paints, Fillers, Putties, Thinners-Solvent-rich, high-solid, water-borne paint

Unless otherwise stated, Covers concentrations up to 50% Covers use up to 6 days/year Covers use up to 1 application per day Covers skin contact area up to 428.75 cm² For each use event, covers use amounts up to 744g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 2.20 hr/Single event.

No specific risk management measure identified beyond those operational conditions stated.

PC09 Coatings and Paints, Fillers, Putties, Thinners-Aerosol spray can

Unless otherwise stated, Covers concentrations up to 10% Covers use up to 2 days/year Covers use up to 1 application per day For each use event, covers use amounts up to 215g Covers use in a one car garage (34 m³) under typical ventilation. Covers use in room size of 34m³ Covers exposure up to 0.33 hr/Single event.

No specific risk management measure identified beyond those operational conditions stated.

PC09 Coatings and Paints, Fillers, Putties, Thinners-Removers (paint-, glue-, wall paper-, sealant-remover)

Unless otherwise stated, Covers concentrations up to 90% Covers use up to 3 days/year Covers use up to 1 application per day Covers skin contact area up to 857.50 cm² For each use event, covers use amounts up to 491g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 2.00 hr/Single event.

No specific risk management measure identified beyond those operational conditions stated.

Lubricants, greases, release products-Liquids

Unless otherwise stated, Covers concentrations up to 50% Covers use up to 4 days/year Covers use up to 1 application per day Covers skin contact area up to 468.00 cm² For each use event, covers use amounts up to 2200g Covers use in a one car garage (34 m³) under typical ventilation. Covers use in room size of 34m³ Covers exposure up to 0.17 hr/Single event.

No specific risk management measure identified beyond those operational conditions stated.

Lubricants, greases, release products-Pastes

Unless otherwise stated, Covers concentrations up to 20% Covers use up to 10 days/year Covers use up to 1 application per day Covers skin contact area up to

468.00 cm² For each use event, covers use amounts up to 34g Covers use in room size of 20m³

No specific risk management measure identified beyond those operational conditions stated.

Lubricants, greases, release products-Sprays

Unless otherwise stated, Covers concentrations up to 50% Covers use up to 6 days/year Covers use up to 1 application per day Covers skin contact area up to 428.75 cm² For each use event, covers use amounts up to 73g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 0.17 hr/Single event.

No specific risk management measure identified beyond those operational conditions stated.

Washing and cleaning products (including solvent based products)-Laundry and dish-washing products

Unless otherwise stated, Covers concentrations up to 60% Covers use up to 365days/year Covers use up to 1 application per day Covers skin contact area up to 857.50 cm² For each use event, covers use amounts up to 15g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 0.50 hr/Single event.

No specific risk management measure identified beyond those operational conditions stated.

Washing and cleaning products (including solvent based products)-Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners)

Unless otherwise stated, Covers concentrations up to 50% Covers use up to 128days/year Covers use up to 1 application per day Covers skin contact area up to 857.50 cm² For each use event, covers use amounts up to 27g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers use up to 0.33 hr/Single event.

No specific risk management measure identified beyond those operational conditions stated.

Washing and cleaning products (including solvent based products)-Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)

Unless otherwise stated, Covers concentrations up to 20% Covers use up to 128days/year Covers use up to 1 application per day Covers skin contact area up to 428.00 cm² For each use event, covers use amounts up to 35g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 0.17 hr/Single event.

No specific risk management measure identified beyond those operational conditions stated.

Welding and soldering products (with flux coatings or flux cores.), flux products

Unless otherwise stated, Covers concentrations up to 20% Covers use up to 365 days/year Covers use up to 1 application per day For each use event, covers use amounts up to 12g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 1.00 hr/Single event.

No specific risk management measure identified beyond those operational conditions stated.

Conditions and measures related to personal protection and hygiene

Section 3: - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 0: Use in Cleaning Agents

Exposure assessment (environment): : Not available.

Exposure estimation : The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure estimation and reference to its source - Consumers: 1: Use in Cleaning Agents

Exposure assessment (human): : Not available.

Exposure estimation : The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated.

Section 4: - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Further details on scaling and control technologies are provided in SpERC factsheet.

Health : Predicted exposures are not expected to exceed the applicable consumer reference values when the operational conditions/risk management measures given in section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : Not available.

Annex to the extended Safety Data Sheet (eSDS)

Consumer

Identification of the substance or mixture

Product definition : Mixture
Code : 40711
Product name : JP-5

Section 1: - Title

Short title of the exposure scenario : Use in Lubricants - Consumer (kerosene): High Environmental Release Category

List of use descriptors : **Identified use name:** Use in Lubricants. - Consumer (Kerosene): high Environmental Release Category
Sector of end use: SU21
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC08a, ERC08d, ESVOV SpERC 8.6e.v1
Market sector by type of chemical product: PC01, PC24, PC31, PC06 Automotive Care Products

Environmental contributing scenarios : **Use in Lubricants.**

Health Contributing Scenarios : **Use in Lubricants.**

Industry Association : Concawe
Processes and activities covered by the exposure scenario : Covers the consumer use of formulated lubricants in closed and open systems including transfer operations, application, operation of engines and similar articles, equipment maintenance and disposal of waste oil.

Section 2: - Exposure controls

Contributing scenario controlling environmental exposure for 0: Use in Lubricants.

Product characteristics : Substance is complex UVCB Predominantly hydrophobic

Amounts used : Fraction of EU tonnage used in region:0.1
Regional use tonnage (tonnes/year):2.7e2
Fraction of Regional tonnage used locally:0.0005
Annual site tonnage (tonnes/year):1.4e-1
Maximum daily site tonnage (kg/day):3.7e-1

Frequency and duration of use : Continuous release.
Emission Days (days/year):365

Environment factors not influenced by risk management : Local freshwater dilution factor:10
Local marine water dilution factor:100

Other given operational conditions affecting environmental exposure : Release fraction to air from wide dispersive use (regional only):1.5e-1
Release fraction to wastewater from wide dispersive use:0.05
Release fraction to air from wide dispersive use (regional only):0.05

Conditions and measures related to municipal sewage treatment plant : Risk from environmental exposure is driven by freshwater.
Estimated substance removal from wastewater via on-site sewage treatment (%):94.7
Maximum allowable site tonnage (M_{safe}) based on release following total wastewater treatment removal (kg/d):47
Assumed on-site sewage treatment plant flow (m^3/d):2000

Conditions and measures related to external treatment of waste for disposal : External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste : External recovery and recycling of waste should comply with applicable local and/or national regulations.

Contributing scenario controlling consumer exposure for 0: Use in Lubricants.

Concentration of substance in mixture or article	: Unless otherwise stated. Covers concentrations up to 100%
Physical state	: Liquid, vapour pressure 0.5 - 10 kPa at STP.
Amounts used	: Unless otherwise stated. Covers use up to 2200g Covers skin contact area up to 468cm ²
Frequency and duration of use	: Unless otherwise stated. Covers use up to 4 application per day Covers exposure up to 8 hr/Single event.
Other given operational conditions affecting consumers exposure	: Assumes activities are at ambient temperature (unless stated differently). Covers use in room size of 20m ³ Use with adequate ventilation.
Conditions and measures related to information and behavioural advice to consumers	: Product Category(ies)-Operational conditions and risk management measures Air care products-Air care, instant action (aerosol sprays) Unless otherwise stated, Covers concentrations up to 50% Covers use up to 365days/year Covers use up to 4 application per day For each use event, covers use amounts up to 0.1g Covers use under typical household ventilation. Covers use in room size of 20m ³ Covers exposure up to 0.25 hr/Single event. No specific risk management measure identified beyond those operational conditions stated. Air care products-Air care, continuous action (solid and liquid) Unless otherwise stated, Covers concentrations up to 10% Covers use up to 365 days/year Covers use up to 1 application per day Covers skin contact area up to 35.70 cm ² For each use event, covers use amounts up to 0.48g Covers use under typical household ventilation. Covers use in room size of 20m ³ Covers exposure up to 8.00 hr/Single event. No specific risk management measure identified beyond those operational conditions stated. Anti-Freeze and de-icing products-Washing car window Unless otherwise stated, Covers concentrations up to 5% Covers use up to 365 days/year Covers use up to 1 application per day For each use event, covers use amounts up to 0.5g Covers use in a one car garage (34 m ³) under typical ventilation. Covers use in room size of 34m ³ Covers exposure up to 0.02 hr/Single event. No specific risk management measure identified beyond those operational conditions stated. Anti-Freeze and de-icing products-Pouring into radiator Unless otherwise stated, Covers concentrations up to 10% Covers use up to 365 days/year Covers use up to 1 application per day Covers skin contact area up to 428.00 cm ² For each use event, covers use amounts up to 2000g Covers use in a one car garage (34 m ³) under typical ventilation. Covers use in room size of 34m ³ Covers exposure up to 0.17hr/Single event. No specific risk management measure identified beyond those operational conditions stated. Anti-Freeze and de-icing products-Lock de-icer Unless otherwise stated, Covers concentrations up to 50% Covers use up to 55 days/year Covers use up to 1 application per day Covers skin contact area up to 214.40 cm ² For each use event, covers use amounts up to 4g Covers use in a one car garage (34 m ³) under typical ventilation. Covers use in room size of 34m ³ Covers exposure up to 0.25 hr/Single event. No specific risk management measure identified beyond those operational conditions stated. PC06 Automotive Care Products-spray application Unless otherwise stated, Covers concentrations up to 10% Covers use up to 55 days/year Covers use up to 1 application per day Covers skin contact area up to 214.40 cm ² For each use event, covers use amounts up to 10g Covers use under typical household ventilation. Covers use in room size of 20m ³ Covers exposure up to 0.17 hr/Single event. No specific risk management measure identified beyond those operational conditions stated.

PC06 Automotive Care Products-Polishing agents - Other polishing agents
Unless otherwise stated, Covers concentrations up to 30% Covers use up to 29 days/year Covers use up to 1 application per day Covers skin contact area up to 428.00 cm² For each use event, covers use amounts up to 100g Covers use in a one car garage (34 m³) under typical ventilation. Covers use in room size of 34m³ Covers exposure up to 0.50 hr/Single event.
No specific risk management measure identified beyond those operational conditions stated.

Lubricants, greases, release products-Pastes
Unless otherwise stated, Covers concentrations up to 20% Covers use up to 10 days/year Covers use up to 1 application per day Covers skin contact area up to 468.00 cm² For each use event, covers use amounts up to 34g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 0.17 hr/Single event.
No specific risk management measure identified beyond those operational conditions stated.

Lubricants, greases, release products-Sprays
Unless otherwise stated, Covers concentrations up to 50% Covers use up to 6 days/year Covers use up to 1 application per day Covers skin contact area up to 428.75 cm² For each use event, covers use amounts up to 73g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 0.17 hr/ Single event.
No specific risk management measure identified beyond those operational conditions stated.

Adhesives, sealants-Glues, hobby use
Unless otherwise stated, Covers concentrations up to 30% Covers use up to 365 days/year Covers use up to 1 application per day Covers skin contact area up to 35.73 cm² For each use event, covers use amounts up to 9g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 4 hr/ Single event.
No specific risk management measure identified beyond those operational conditions stated.

Adhesives, sealants-Glue from spray
Unless otherwise stated, Covers concentrations up to 30% Covers use up to 6days/year Covers use up to 1 application per day Covers skin contact area up to 35.73 cm² For each use event, covers use amounts up to 85.05g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 4.00 hr/Single event.
No specific risk management measure identified beyond those operational conditions stated.

Adhesives, sealants-Sealants
Unless otherwise stated, Covers concentrations up to 30% Covers use up to 365days/year Covers use up to 1 application per day Covers skin contact area up to 35.73 cm² For each use event, covers use amounts up to 75g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers use up to 1.00 hr/Single event.
No specific risk management measure identified beyond those operational conditions stated.

Polishes and wax blends-Polishes, wax/cream (floor, furniture, shoes)
Unless otherwise stated, Covers concentrations up to 50% Covers use up to 29days/year Covers use up to 1 application per day Covers skin contact area up to 430.00 cm² For each use event, covers use amounts up to 142g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 1.23 hr/Single event.
No specific risk management measure identified beyond those operational conditions stated.

Polishes and wax blends-Polishes, spray (furniture, shoes)
Unless otherwise stated, Covers concentrations up to 50% Covers use up to 8days/year Covers use up to 1 application per day Covers skin contact area up to 430.00 cm² For each use event, covers use amounts up to 35g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 0.33 hr/Single event.

No specific risk management measure identified beyond those operational conditions stated.

Lubricants, greases, release products-Liquids
Unless otherwise stated, Covers concentrations up to 100% Covers use up to 4 days/year Covers use up to 1 application per day Covers skin contact area up to 468.00 cm² For each use event, covers use amounts up to 2200g Covers use in a one car garage (34 m³) under typical ventilation. Covers use in room size of 34m³ Covers exposure up to 0.17 hr/ Single event.
No specific risk management measure identified beyond those operational conditions stated.

Conditions and measures related to personal protection and hygiene

Section 3: - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: Use in Lubricants.

Exposure assessment (environment): : Not available.

Exposure estimation : The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure estimation and reference to its source - Consumers: 0: Use in Lubricants.

Exposure assessment (human): : Not available.

Exposure estimation : The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated.

Section 4: - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Further details on scaling and control technologies are provided in SpERC factsheet.

Health : Predicted exposures are not expected to exceed the applicable consumer reference values when the operational conditions/risk management measures given in section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : Not available.

Annex to the extended Safety Data Sheet (eSDS)

Consumer

Identification of the substance or mixture

Product definition : Mixture
Code : 40711
Product name : JP-5

Section 1: - Title

Short title of the exposure scenario : Use in Lubricants - Consumer (kerosene): Low Environmental Release Category

List of use descriptors : **Identified use name:** Use in Lubricants. - Consumer (Kerosene): low Environmental Release Category
Sector of end use: SU21
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC09a, ERC09b, ESVOC SpERC 9.6d.v1
Market sector by type of chemical product: PC01, PC24, PC31, PC06 Automotive Care Products

Environmental contributing scenarios : **Use in Lubricants.**

Health Contributing Scenarios : **Use in Lubricants.**

Industry Association : Concawe
Processes and activities covered by the exposure scenario : Covers the consumer use of formulated lubricants in closed and open systems including transfer operations, application, operation of engines and similar articles, equipment maintenance and disposal of waste oil.

Section 2: - Exposure controls

Contributing scenario controlling environmental exposure for 0: Use in Lubricants.

Product characteristics : Substance is complex UVCB Predominantly hydrophobic

Amounts used : Fraction of EU tonnage used in region:0.1
Regional use tonnage (tonnes/year):2.7e2
Fraction of Regional tonnage used locally:0.0005
Annual site tonnage (tonnes/year):1.4e-1
Maximum daily site tonnage (kg/day):3.7e-1

Frequency and duration of use : Continuous release.
Emission Days (days/year):365

Environment factors not influenced by risk management : Local freshwater dilution factor:10
Local marine water dilution factor:100

Other given operational conditions affecting environmental exposure : Release fraction to air from wide dispersive use (regional only):0.01
Release fraction to wastewater from wide dispersive use:0.01
Release fraction to air from wide dispersive use (regional only):0.01

Conditions and measures related to municipal sewage treatment plant : Risk from environmental exposure is driven by freshwater.
Estimated substance removal from wastewater via on-site sewage treatment (%):94.7
Maximum allowable site tonnage (M_{safe}) based on release following total wastewater treatment removal (kg/d):48
Assumed on-site sewage treatment plant flow (m^3/d):2000

Conditions and measures related to external treatment of waste for disposal : External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste : External recovery and recycling of waste should comply with applicable local and/or national regulations.

Contributing scenario controlling consumer exposure for 0: Use in Lubricants.

Concentration of substance in mixture or article	: Unless otherwise stated. Covers concentrations up to 100%
Physical state	: Liquid, vapour pressure 0.5 - 10 kPa at STP.
Amounts used	: Unless otherwise stated. Covers use up to 2200g Covers skin contact area up to 468cm ²
Frequency and duration of use	: Unless otherwise stated. Covers use up to 4 application per day Covers exposure up to 8 hr/Single event.
Other given operational conditions affecting consumers exposure	: Assumes activities are at ambient temperature (unless stated differently). Covers use in room size of 20m ³ Use with adequate ventilation.
Conditions and measures related to information and behavioural advice to consumers	: Product Category(ies)-Operational conditions and risk management measures Air care products-Air care, instant action (aerosol sprays) Unless otherwise stated, Covers concentrations up to 50% Covers use up to 365days/year Covers use up to 4 application per day For each use event, covers use amounts up to 0.1g Covers use under typical household ventilation. Covers use in room size of 20m ³ Covers exposure up to 0.25 hr/Single event. No specific risk management measure identified beyond those operational conditions stated. Air care products-Air care, continuous action (solid and liquid) Unless otherwise stated, Covers concentrations up to 10% Covers use up to 365 days/year Covers use up to 1 application per day Covers skin contact area up to 35.70 cm ² For each use event, covers use amounts up to 0.48g Covers use under typical household ventilation. Covers use in room size of 20m ³ Covers exposure up to 8.00 hr/Single event. No specific risk management measure identified beyond those operational conditions stated. Anti-Freeze and de-icing products-Washing car window Unless otherwise stated, Covers concentrations up to 5% Covers use up to 365 days/year Covers use up to 1 application per day For each use event, covers use amounts up to 0.5g Covers use in a one car garage (34 m ³) under typical ventilation. Covers use in room size of 34m ³ Covers exposure up to 0.02 hr/Single event. No specific risk management measure identified beyond those operational conditions stated. Anti-Freeze and de-icing products-Pouring into radiator Unless otherwise stated, Covers concentrations up to 10% Covers use up to 365 days/year Covers use up to 1 application per day Covers skin contact area up to 428.00 cm ² For each use event, covers use amounts up to 2000g Covers use in a one car garage (34 m ³) under typical ventilation. Covers use in room size of 34m ³ Covers exposure up to 0.17hr/Single event. No specific risk management measure identified beyond those operational conditions stated. Anti-Freeze and de-icing products-Lock de-icer Unless otherwise stated, Covers concentrations up to 50% Covers use up to 55 days/year Covers use up to 1 application per day Covers skin contact area up to 214.40 cm ² For each use event, covers use amounts up to 4g Covers use in a one car garage (34 m ³) under typical ventilation. Covers use in room size of 34m ³ Covers exposure up to 0.25 hr/Single event. No specific risk management measure identified beyond those operational conditions stated. PC06 Automotive Care Products-spray application Unless otherwise stated, Covers concentrations up to 10% Covers use up to 55 days/year Covers use up to 1 application per day Covers skin contact area up to 214.40 cm ² For each use event, covers use amounts up to 10g Covers use under typical household ventilation. Covers use in room size of 20m ³ Covers exposure up to 0.17 hr/Single event. No specific risk management measure identified beyond those operational conditions stated.

PC06 Automotive Care Products-Polishing agents - Other polishing agents
Unless otherwise stated, Covers concentrations up to 30% Covers use up to 29 days/year Covers use up to 1 application per day Covers skin contact area up to 428.00 cm² For each use event, covers use amounts up to 100g Covers use in a one car garage (34 m³) under typical ventilation. Covers use in room size of 34m³ Covers exposure up to 0.50 hr/Single event.
No specific risk management measure identified beyond those operational conditions stated.

Lubricants, greases, release products-Pastes
Unless otherwise stated, Covers concentrations up to 20% Covers use up to 10 days/year Covers use up to 1 application per day Covers skin contact area up to 468.00 cm² For each use event, covers use amounts up to 34g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 0.17 hr/Single event.
No specific risk management measure identified beyond those operational conditions stated.

Lubricants, greases, release products-Sprays
Unless otherwise stated, Covers concentrations up to 50% Covers use up to 6 days/year Covers use up to 1 application per day Covers skin contact area up to 428.75 cm² For each use event, covers use amounts up to 73g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 0.17 hr/ Single event.
No specific risk management measure identified beyond those operational conditions stated.

Adhesives, sealants-Glues, hobby use
Unless otherwise stated, Covers concentrations up to 30% Covers use up to 365 days/year Covers use up to 1 application per day Covers skin contact area up to 35.73 cm² For each use event, covers use amounts up to 9g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 4 hr/ Single event.
No specific risk management measure identified beyond those operational conditions stated.

Adhesives, sealants-Glue from spray
Unless otherwise stated, Covers concentrations up to 30% Covers use up to 6days/year Covers use up to 1 application per day Covers skin contact area up to 35.73 cm² For each use event, covers use amounts up to 85.05g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 4.00 hr/Single event.
No specific risk management measure identified beyond those operational conditions stated.

Adhesives, sealants-Sealants
Unless otherwise stated, Covers concentrations up to 30% Covers use up to 365days/year Covers use up to 1 application per day Covers skin contact area up to 35.73 cm² For each use event, covers use amounts up to 75g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers use up to 1.00 hr/Single event.
No specific risk management measure identified beyond those operational conditions stated.

Polishes and wax blends-Polishes, wax/cream (floor, furniture, shoes)
Unless otherwise stated, Covers concentrations up to 50% Covers use up to 29days/year Covers use up to 1 application per day Covers skin contact area up to 430.00 cm² For each use event, covers use amounts up to 142g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 1.23 hr/Single event.
No specific risk management measure identified beyond those operational conditions stated.

Polishes and wax blends-Polishes, spray (furniture, shoes)
Unless otherwise stated, Covers concentrations up to 50% Covers use up to 8days/year Covers use up to 1 application per day Covers skin contact area up to 430.00 cm² For each use event, covers use amounts up to 35g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 0.33 hr/Single event.

No specific risk management measure identified beyond those operational conditions stated.

Lubricants, greases, release products-Liquids
Unless otherwise stated, Covers concentrations up to100% Covers use up to4 days/year Covers use up to 1 application per day Covers skin contact area up to468.00 cm² For each use event, covers use amounts up to2200g Covers use in a one car garage (34 m³) under typical ventilation. Covers use in room size of34m³ Covers exposure up to0.17 hr/ Single event.
No specific risk management measure identified beyond those operational conditions stated.

Conditions and measures related to personal protection and hygiene

Section 3: - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: Use in Lubricants.

Exposure assessment (environment): : Not available.

Exposure estimation : The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure estimation and reference to its source - Consumers: 0: Use in Lubricants.

Exposure assessment (human): : Not available.

Exposure estimation : The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated.

Section 4: - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Further details on scaling and control technologies are provided in SpERC factsheet.

Health : Predicted exposures are not expected to exceed the applicable consumer reference values when the operational conditions/risk management measures given in section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : Not available.

Annex to the extended Safety Data Sheet (eSDS)

Consumer

Identification of the substance or mixture

Product definition : Mixture
Code : 40711
Product name : JP-5

Section 1: - Title

Short title of the exposure scenario : Uses in Coatings - Consumer (Kerosene)
List of use descriptors : **Identified use name:** Uses in Coatings - Consumer (Kerosene)
Sector of end use: SU21
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC08a, ERC08d, ESVOC SpERC 8.3c.v1
Market sector by type of chemical product: PC01, PC04, PC09a, PC09b, PC09c, PC15, PC18, PC23, PC24, PC31, PC34, PC05 Artists Supply and Hobby preparations, PC10 Building and construction preparations not covered elsewhere
Environmental contributing scenarios : **Uses in Coatings**
Health Contributing Scenarios : **Uses in Coatings**

Industry Association : Concawe
Processes and activities covered by the exposure scenario : Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including product transfer and preparation, application by brush, spray by hand or similar methods) and equipment cleaning.

Section 2: - Exposure controls

Contributing scenario controlling environmental exposure for 0: Uses in Coatings

Product characteristics : Substance is complex UVCB Predominantly hydrophobic
Amounts used : Fraction of EU tonnage used in region:0.1
Regional use tonnage (tonnes/year):2.1e2
Fraction of Regional tonnage used locally:0.0005
Annual site tonnage (tonnes/year):1.0e-1
Maximum daily site tonnage (kg/day):2.8e-1
Frequency and duration of use : Continuous release.
Emission Days (days/year):365
Environment factors not influenced by risk management : Local freshwater dilution factor:10
Local marine water dilution factor:100
Other given operational conditions affecting environmental exposure : Release fraction to air from wide dispersive use (regional only):0.99
Release fraction to wastewater from wide dispersive use:0.01
Release fraction to air from wide dispersive use (regional only):0.005
Conditions and measures related to municipal sewage treatment plant : Risk from environmental exposure is driven by freshwater.
Estimated substance removal from wastewater via on-site sewage treatment (%):94.7
Maximum allowable site tonnage (M_{safe}) based on release following total wastewater treatment removal (kg/d):3.6e1
Assumed on-site sewage treatment plant flow (m^3/d):2000
Conditions and measures related to external treatment of waste for disposal : External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste : External recovery and recycling of waste should comply with applicable local and/or national regulations.

Contributing scenario controlling consumer exposure for 0: Uses in Coatings

Concentration of substance in mixture or article	: Unless otherwise stated. Covers concentrations up to 100%
Physical state	: Liquid, vapour pressure 0.5 - 10 kPa at STP.
Amounts used	: Unless otherwise stated. Covers use up to 13800g Covers skin contact area up to 857.5cm ²
Frequency and duration of use	: Unless otherwise stated. Exposure duration per year: 1 application per day Covers exposure up to 6 hr/Single event.
Other given operational conditions affecting consumers exposure	: Assumes activities are at ambient temperature (unless stated differently). Covers use in room size of 20m ³ Use with adequate ventilation.
Conditions and measures related to information and behavioural advice to consumers	: Product Category(ies)-Operational conditions and risk management measures Adhesives, sealants-Glues, hobby use Unless otherwise stated, Covers concentrations up to 30% Covers use up to 110 days/year Covers use up to 1 application per day Covers skin contact area up to 35.73cm ² For each use event, covers use amounts up to 9g Covers use under typical household ventilation. Covers use in room size of 20m ³ Covers exposure up to 4.00 hr/Single event. No specific risk management measure identified beyond those operational conditions stated. Adhesives, sealants-Glues DIY-use (carpet glue, tile glue, wood parquet glue) Unless otherwise stated, Covers concentrations up to 30% Covers use up to 1 days/year Covers use up to 1 application per day Covers skin contact area up to 110.00 cm ² For each use event, covers use amounts up to 6390g Covers use under typical household ventilation. Covers use in room size of 20m ³ Covers exposure up to 6.00 hr/Single event. No specific risk management measure identified beyond those operational conditions stated. Adhesives, sealants-Glue from spray Unless otherwise stated, Covers concentrations up to 30% Covers use up to 6 days/year Covers use up to 1 application per day Covers skin contact area up to 35.73 cm ² For each use event, covers use amounts up to 85.05g Covers use under typical household ventilation. Covers use in room size of 20m ³ Covers exposure up to 4.00 hr/Single event. No specific risk management measure identified beyond those operational conditions stated. Adhesives, sealants-Sealants Unless otherwise stated, Covers concentrations up to 30% Covers use up to 55 days/year Covers use up to 1 application per day Covers skin contact area up to 35.73 cm ² For each use event, covers use amounts up to 75g Covers use under typical household ventilation. Covers use in room size of 20m ³ Covers exposure up to 1.00 hr/Single event. No specific risk management measure identified beyond those operational conditions stated. Anti-Freeze and de-icing products-Washing car window Unless otherwise stated, Covers concentrations up to 1% Covers use up to 365 days/year Covers use up to 1 application per day For each use event, covers use amounts up to 0.5g Covers use in a one car garage (34 m ³) under typical ventilation. Covers use in room size of 34m ³ Covers exposure up to 0.02 hr/Single event. No specific risk management measure identified beyond those operational conditions stated. Anti-Freeze and de-icing products-Pouring into radiator Unless otherwise stated, Covers concentrations up to 10% Covers use up to 365 days/year Covers use up to 1 application per day Covers skin contact area up to 428.00 cm ² For each use event, covers use amounts up to 2000g Covers use in a one car garage (34 m ³) under typical ventilation. Covers use in room size of 34m ³ Covers exposure up to 0.17 hr/Single event. No specific risk management measure identified beyond those operational conditions stated.

Anti-Freeze and de-icing products-Lock de-icer

Unless otherwise stated, Covers concentrations up to 50% Covers use up to 110 days/year Covers use up to 1 application per day Covers skin contact area up to 36.00 cm² For each use event, covers use amounts up to 4g Covers use in a one car garage (34 m³) under typical ventilation. Covers use in room size of 34m³ Covers exposure up to 0.25 hr/Single event.

No specific risk management measure identified beyond those operational conditions stated.

PC05 Artists Supply and Hobby preparations

Unless otherwise stated, Covers concentrations up to 30% Covers use up to 110 days/year Covers use up to 1 application per day Covers skin contact area up to 35.73 cm² For each use event, covers use amounts up to 9g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 4.00 hr/Single event.

No specific risk management measure identified beyond those operational conditions stated.

Coatings and paints, thinners, paint removers-Water-borne latex wall paint

Unless otherwise stated, Covers concentrations up to 5% Covers use up to 4 days/year Covers use up to 1 application per day Covers skin contact area up to 428.75 cm² For each use event, covers use amounts up to 2760g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 2.20 hr/Single event.

No specific risk management measure identified beyond those operational conditions stated.

Coatings and paints, thinners, paint removers-Solvent-rich, high-solid, water-borne paint

Unless otherwise stated, Covers concentrations up to 50% Covers use up to 6 days/year Covers use up to 1 application per day Covers skin contact area up to 428.75 cm² For each use event, covers use amounts up to 744g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 2.20 hr/Single event.

No specific risk management measure identified beyond those operational conditions stated.

Coatings and paints, thinners, paint removers-Aerosol spray can

Unless otherwise stated, Covers concentrations up to 50% Covers use up to 2 days/year Covers use up to 1 application per day For each use event, covers use amounts up to 215g Covers use in a one car garage (34 m³) under typical ventilation. Covers use in room size of 34m³ Covers exposure up to 0.33 hr/Single event.

No specific risk management measure identified beyond those operational conditions stated.

Coatings and paints, thinners, paint removers-Removers (paint-, glue-, wall paper-, sealant-remover)

Unless otherwise stated, Covers concentrations up to 90% Covers use up to 3 days/year Covers use up to 1 application per day Covers skin contact area up to 857.50 cm² For each use event, covers use amounts up to 491g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 2.00 hr/Single event.

No specific risk management measure identified beyond those operational conditions stated.

Fillers, putties, plasters, modelling clay-Fillers and putty

Unless otherwise stated, Covers concentrations up to 10% Covers use up to 12 days/year Covers use up to 1 application per day Covers skin contact area up to 35.73 cm² For each use event, covers use amounts up to 85g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 4.00 hr/Single event.

No specific risk management measure identified beyond those operational conditions stated.

Fillers, putties, plasters, modelling clay-Plasters and floor equalisers

Unless otherwise stated, Covers concentrations up to 3% Covers use up to 12 days/year Covers use up to 1 application per day Covers skin contact area up to 857.50 cm² For each use event, covers use amounts up to 13800g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 2.00 hr/Single event.

No specific risk management measure identified beyond those operational conditions stated.

Fillers, putties, plasters, modelling clay-Modelling clay

Unless otherwise stated, Covers concentrations up to 10% Covers use up to 365 days/year Covers use up to 1 application per day Covers skin contact area up to 254.40 cm² For each use event, assumes swallowed amount of 1g
No specific risk management measure identified beyond those operational conditions stated.

Finger paints-Finger paints

Unless otherwise stated, Covers concentrations up to 10% Covers use up to 365 days/year Covers use up to 1 application per day Covers skin contact area up to 254.40 cm² For each use event, assumes swallowed amount of 1.35g
No specific risk management measure identified beyond those operational conditions stated.

PC10 Building and construction preparations not covered elsewhere

Unless otherwise stated, Covers concentrations up to 50% Covers use up to 6 days/year Covers use up to 1 application per day Covers skin contact area up to 428.75 cm² For each use event, covers use amounts up to 744g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 2.20 hr/Single event.
No specific risk management measure identified beyond those operational conditions stated.

Non-metal-surface treatment products-Water-borne latex wall paint

Unless otherwise stated, Covers concentrations up to 50% Covers use up to 4 days/year Covers use up to 1 application per day Covers skin contact area up to 428.75 cm² For each use event, covers use amounts up to 2760g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 2.20 hr/Single event.
No specific risk management measure identified beyond those operational conditions stated.

Non-metal-surface treatment products-Solvent-rich, high-solid, water-borne paint

Unless otherwise stated, Covers concentrations up to 50% Covers use up to 6 days/year Covers use up to 1 application per day Covers skin contact area up to 428.75 cm² For each use event, covers use amounts up to 744g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 2.20 hr/Single event.
No specific risk management measure identified beyond those operational conditions stated.

Non-metal-surface treatment products-Aerosol spray can

Unless otherwise stated, Covers concentrations up to 50% Covers use up to 2 days/year Covers use up to 1 application per day For each use event, covers use amounts up to 215g Covers use in a one car garage (34 m³) under typical ventilation. Covers use in room size of 34m³ Covers use up to 0.33 hr/Single event.
No specific risk management measure identified beyond those operational conditions stated.

Non-metal-surface treatment products-Removers (paint-, glue-, wall paper-, sealant-remover)

Unless otherwise stated, Covers concentrations up to 90% Covers use up to 3 days/year Covers use up to 1 application per day Covers skin contact area up to 857.50 cm² For each use event, covers use amounts up to 491g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 2.00 hr/Single event.
No specific risk management measure identified beyond those operational conditions stated.

Ink and toners-Inks and toners

Unless otherwise stated, Covers concentrations up to 10% Covers use up to 365 days/year Covers use up to 1 application per day Covers skin contact area up to 35.70 cm² For each use event, covers use amounts up to 20g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 2.20 hr/Single event.
No specific risk management measure identified beyond those operational conditions stated.

Leather tanning, dye, finishing, impregnation and care products-Polishes, wax/cream (floor, furniture, shoes)
 Unless otherwise stated, Covers concentrations up to 50% Covers use up to 29 days/year Covers use up to 1 application per day Covers skin contact area up to 430.00 cm² For each use event, covers use amounts up to 56g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 1.23 hr/Single event.
 No specific risk management measure identified beyond those operational conditions stated.

Leather tanning, dye, finishing, impregnation and care products-Polishes, spray (furniture, shoes)
 Unless otherwise stated, Covers concentrations up to 50% Covers use up to 8 days/year Covers use up to 1 application per day Covers skin contact area up to 430.00 cm² For each use event, covers use amounts up to 56g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 0.33 hr/Single event.
 No specific risk management measure identified beyond those operational conditions stated.

Lubricants, greases, release products-Liquids
 Unless otherwise stated, Covers concentrations up to 100% Covers use up to 4 days/year Covers use up to 1 application per day Covers skin contact area up to 468.00 cm² For each use event, covers use amounts up to 2200g Covers use in a one car garage (34 m³) under typical ventilation. Covers use in room size of 34m³ Covers exposure up to 0.17 hr/Single event.
 No specific risk management measure identified beyond those operational conditions stated.

Lubricants, greases, release products-Pastes
 Unless otherwise stated, Covers concentrations up to 20% Covers use up to 10 days/year Covers use up to 1 application per day Covers skin contact area up to 468.00 cm² For each use event, covers use amounts up to 34g Covers use in room size of 20m³
 No specific risk management measure identified beyond those operational conditions stated.

Lubricants, greases, release products-Sprays
 Unless otherwise stated, Covers concentrations up to 50% Covers use up to 6 days/year Covers use up to 1 application per day Covers skin contact area up to 428.75 cm² For each use event, covers use amounts up to 73g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 0.17 hr/Single event.
 No specific risk management measure identified beyond those operational conditions stated.

Polishes and wax blends-Polishes, wax/cream (floor, furniture, shoes)
 Unless otherwise stated, Covers concentrations up to 15% Covers use up to 29 days/year Covers use up to 1 application per day Covers skin contact area up to 430.00 cm² For each use event, covers use amounts up to 142g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 1.23 hr-Single event.
 No specific risk management measure identified beyond those operational conditions stated.

Polishes and wax blends-Polishes, spray (furniture, shoes)
 Unless otherwise stated, Covers concentrations up to 50% Covers use up to 8 days/year Covers use up to 1 application per day Covers skin contact area up to 430.00 cm² For each use event, covers use amounts up to 35g Covers use under typical household ventilation. Covers use in room size of 20m³ Covers use up to 0.33 hr/Single event.
 No specific risk management measure identified beyond those operational conditions stated.

Textile dyes, finishing and impregnating products; including bleaches and other processing aids
 Unless otherwise stated, Covers concentrations up to 10% Covers use up to 55 days/year Covers use up to 1 application per day Covers skin contact area up to 857.50 cm² For each use event, covers use amounts up to 115g Covers use under

typical household ventilation. Covers use in room size of 20m³ Covers exposure up to 1.00 hr/Single event.

No specific risk management measure identified beyond those operational conditions stated.

Conditions and measures related to personal protection and hygiene

Section 3: - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: Uses in Coatings

Exposure assessment (environment): : Not available.

Exposure estimation : The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure estimation and reference to its source - Consumers: 0: Uses in Coatings

Exposure assessment (human): : Not available.

Exposure estimation : The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated.

Section 4: - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Further details on scaling and control technologies are provided in SpERC factsheet.

Health : Predicted exposures are not expected to exceed the applicable consumer reference values when the operational conditions/risk management measures given in section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : Not available.

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definition : Mixture
Code : 40711
Product name : JP-5

Section 1: - Title

Short title of the exposure scenario : Distribution of substance - Industrial (Kerosene)

List of use descriptors : **Identified use name:** Distribution of substance - Industrial (Kerosene)
Process Category: PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC09, PROC15
Sector of end use: SU03
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC01, ERC02, ERC03, ERC04, ERC05, ERC06a, ERC06b, ERC06c, ERC06d, ERC07, ESVOC SpERC 1.1b.v1
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.

Environmental contributing scenarios : **Distribution of substance**

Health Contributing Scenarios : **Distribution of substance**

Industry Association : Concawe

Processes and activities covered by the exposure scenario : Bulk loading (including marine vessel/barge, rail/road car and IBC loading) of substance within closed or contained systems, including incidental exposures during its sampling, storage, unloading, maintenance and associated laboratory activities.

Section 2: - Exposure controls

Contributing scenario controlling environmental exposure for 0: Distribution of substance

Product characteristics : Substance is complex UVCB Predominantly hydrophobic

Amounts used : Fraction of EU tonnage used in region:0.1
Regional use tonnage (tonnes/year):5.4e6
Fraction of Regional tonnage used locally:2.0e-3
Annual site tonnage (tonnes/year):1.1e4
Maximum daily site tonnage (kg/day):3.6e4

Frequency and duration of use : Continuous release. Emission Days (days/year):300

Environment factors not influenced by risk management : Local freshwater dilution factor:10
Local marine water dilution factor:100

Other given operational conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM):1.0e-3
Release fraction to wastewater from process (initial release prior to RMM):1.0e-5
Release fraction to soil from process (initial release prior to RMM):0.00001

Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.

Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater.
No wastewater treatment required.
Treat air emission to provide a typical removal efficiency of (%):90
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%):0
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):0

Organizational measures to prevent/limit release from site	: Do not apply industrial sludge to natural soils. sludge should be incinerated, contained or reclaimed.
Conditions and measures related to municipal sewage treatment plant	: Estimated substance removal from wastewater via on-site sewage treatment (%):94.7 Total efficiency of removal from wastewater after on-site and off-site (domestic treatment plant) RMMs (%):94.7 Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/d):2.6e6 Assumed on-site sewage treatment plant flow (m^3/d):2000
Conditions and measures related to external treatment of waste for disposal	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

Contributing scenario controlling worker exposure for 0: Distribution of substance

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100% (unless stated differently).
Physical state	: Liquid, vapour pressure 0.5 - 10 kPa at STP.
Amounts used	: Not applicable.
Frequency and duration of use	: Covers daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management	: Not applicable.
Other given operational conditions affecting workers exposure	: Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented. Contributing Scenarios-Operational conditions and risk management measures General measures (skin irritants) Avoid all skin contact with product, clean up contamination/spills as soon as they occur. Wear gloves (tested to EN374) if hand contamination likely, wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. General exposures (closed systems) No other specific measures identified. General exposures (open systems) No other specific measures identified. Process sampling No other specific measures identified. Bulk product storage No other specific measures identified. Laboratory activities No other specific measures identified. Equipment cleaning and maintenance No other specific measures identified. Bulk transfers No other specific measures identified. Drum and small package filling No other specific measures identified.

Conditions and measures related to personal protection and hygiene

Section 3: - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: Distribution of substance

Exposure assessment (environment): : Not available.

Exposure estimation : The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure estimation and reference to its source - Workers: 0: Distribution of substance

Exposure assessment (human): : Not available.

Exposure estimation : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 4: - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet.

Health : Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation. Available hazard data do not support the need for a DNEL to be established for other health effects. Users are advised to consider national Occupational Exposure Limits or other equivalent values. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : General exposures (closed systems)
Handle substance within a closed system.

General exposures (open systems)
Provide extract ventilation to points where emissions occur.
Clear lines prior to de-coupling.

Bulk transfers
Ensure material transfers are under containment or extract ventilation.
Clear lines prior to de-coupling.
Avoid splashing.

Process sampling
Ensure material transfers are under containment or extract ventilation.

Laboratory activities
Handle in a fume cupboard or under extract ventilation.

Bulk product storage
Store substance within a closed system.
Ensure dedicated sample points are provided.
Avoid dip sampling.

Equipment cleaning and maintenance
Drain down system prior to equipment break-in or maintenance.
Retain drain-downs in sealed storage pending disposal or for subsequent recycle.
Clean spills immediately.

Drum and small package filling
Fill containers/cans at dedicated fill points supplied with local extract ventilation.

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definition : Mixture
Code : 40711
Product name : JP-5

Section 1: - Title

Short title of the exposure scenario : Explosives manufacture and use - Professional (Kerosene)
List of use descriptors : **Identified use name:** Explosives manufacture and use-Professional (Kerosene)
Process Category: PROC01, PROC03, PROC05, PROC08a, PROC08b
Sector of end use: SU22
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC08e, ESVOC SpERC Not Applicable
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.
Environmental contributing scenarios : **Explosives manufacture and use**
Health Contributing Scenarios : **Explosives manufacture and use**

Industry Association : Concawe
Processes and activities covered by the exposure scenario : Covers exposures arising from the manufacture and use of slurry explosives (including materials transfer, mixing and charging) and equipment cleaning.

Section 2: - Exposure controls

Contributing scenario controlling environmental exposure for 0: Explosives manufacture and use
Product characteristics : Substance is complex UVCB Predominantly hydrophobic
Amounts used : Fraction of EU tonnage used in region:0.1
Regional use tonnage (tonnes/year):1.2e3
Fraction of Regional tonnage used locally:5e-4
Annual site tonnage (tonnes/year):0.62
Maximum daily site tonnage (kg/day):1.7
Frequency and duration of use : Continuous release. Emission Days (days/year):365
Environment factors not influenced by risk management : Local freshwater dilution factor:10
Local marine water dilution factor:100
Other given operational conditions affecting environmental exposure : Release fraction to air from wide dispersive use (regional only):0.001
Release fraction to wastewater from wide dispersive use:0.02
Release fraction to soil from wide dispersive use (regional only):0.01
Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater.
No wastewater treatment required.
Treat air emission to provide a typical removal efficiency of (%): Not applicable.
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%):0
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):0
Organizational measures to prevent/limit release from site : Do not apply industrial sludge to natural soils. sludge should be incinerated, contained or reclaimed.

Conditions and measures related to municipal sewage treatment plant	: Estimated substance removal from wastewater via on-site sewage treatment (%):94.7 Total efficiency of removal from wastewater after on-site and off-site (domestic treatment plant) RMMs (%):94.7 Maximum allowable site tonnage (M_{safe}) based on release following total wastewater treatment removal (kg/d):200 Assumed on-site sewage treatment plant flow (m^3/d):2000
Conditions and measures related to external treatment of waste for disposal	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

Contributing scenario controlling worker exposure for 0: Explosives manufacture and use

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100% (unless stated differently).
Physical state	: Liquid, vapour pressure 0.5 - 10 kPa at STP.
Amounts used	: Not applicable.
Frequency and duration of use	: Covers daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management	: Not applicable.
Other given operational conditions affecting workers exposure	: Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented. Contributing Scenarios-Operational conditions and risk management measures General measures (skin irritants) Avoid all skin contact with product, clean up contamination/spills as soon as they occur. Wear gloves (tested to EN374) if hand contamination likely, wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. General exposures (closed systems) No other specific measures identified. Bulk transfers Non-dedicated facility No other specific measures identified. Bulk transfers Dedicated facility No other specific measures identified. Mixing in containers No other specific measures identified. Transfer from/pouring from containers Dedicated facility No other specific measures identified. Transfer from/pouring from containers Non-dedicated facility No other specific measures identified. Drum/batch transfers No other specific measures identified. Equipment cleaning and maintenance No other specific measures identified. Bulk product storage

No other specific measures identified.

Conditions and measures related to personal protection and hygiene

Section 3: - Exposure estimation and reference to its source

Website: : Further information on the assumptions contained in this Exposure Scenario can be found at:

Exposure estimation and reference to its source - Environment: 1: Explosives manufacture and use

Exposure assessment (environment): : Not available.

Exposure estimation : The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure estimation and reference to its source - Workers: 0: Explosives manufacture and use

Exposure assessment (human): : Not available.

Exposure estimation : The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated.

Section 4: - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

Health : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : General exposures (closed systems)
Handle substance within a closed system.

Bulk transfers Dedicated facility

Ensure operation is undertaken outdoors. Ensure material transfers are under containment or extract ventilation. Clear lines prior to de-coupling. Ensure operatives are trained to minimise exposures.

Bulk transfers Non-dedicated facility

Ensure operation is undertaken outdoors. Avoid carrying out operation for more than 4 hours. Ensure operatives are trained to minimise exposures.

Mixing in containers

Ventilation is normally required when handling or using this product. Provide a good standard of controlled ventilation (10 to 15 air changes per hour).

Equipment cleaning and maintenance

Drain down system prior to equipment break-in or maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle. Apply vessel entry procedures, including use of forced supplied air. Transfer via enclosed lines.

Transfer from/pouring from containers Dedicated facility

Provide a good standard of general ventilation.

Natural ventilation is from doors, windows etc.

Controlled ventilation means air is supplied or removed by a powered fan.

Transfer from/pouring from containers Non-dedicated facility
Provide a good standard of controlled ventilation (10 to 15 air changes per hour).
Ensure operatives are trained to minimise exposures.

Drum/batch transfers

Provide a good standard of controlled ventilation (10 to 15 air changes per hour).
Use drum pumps. Avoid spillage when withdrawing pump. Clear up spills
immediately and dispose of waste safely.

Bulk product storage

Store substance within a closed system.

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definition : Mixture
Code : 40711
Product name : JP-5

Section 1: - Title

Short title of the exposure scenario : Formulation and (re)packing of substances and mixtures - Industrial (Kerosene)

List of use descriptors : **Identified use name:** Formulation and (re)packing of substances and mixtures - Industrial (Kerosene)
Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC09, PROC14, PROC15
Sector of end use: SU03, SU10
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC02, ESVOC SpERC 2.2.v1
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.

Environmental contributing scenarios : **Formulation and (re)packing of substances and mixtures**

Health Contributing Scenarios : **Formulation and (re)packing of substances and mixtures**

Industry Association : Concawe

Processes and activities covered by the exposure scenario : Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tableting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.

Section 2: - Exposure controls

Contributing scenario controlling environmental exposure for 0: Formulation and (re)packing of substances and mixtures

Product characteristics : Substance is complex UVCB Predominantly hydrophobic

Amounts used : Fraction of EU tonnage used in region:0.1
Regional use tonnage (tonnes/year):5.2e6
Fraction of Regional tonnage used locally:5.8e-3
Annual site tonnage (tonnes/year):3.0e4
Maximum daily site tonnage (kg/day):1.0e5

Frequency and duration of use : Continuous release. Emission Days (days/year):300

Environment factors not influenced by risk management : Local freshwater dilution factor:10
Local marine water dilution factor:100

Other given operational conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM):1.0e-2
Release fraction to wastewater from process (initial release prior to RMM):2.0e-4
Release fraction to soil from process (initial release prior to RMM):0.0001

Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.

Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater sediment.
Prevent discharge of undissolved substance to or recover from onsite wastewater.
If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
Treat air emission to provide a typical removal efficiency of (%):0
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%):86.0

Organizational measures to prevent/limit release from site	: If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of \geq (%):0 : Do not apply industrial sludge to natural soils. sludge should be incinerated, contained or reclaimed.
Conditions and measures related to municipal sewage treatment plant	: Estimated substance removal from wastewater via on-site sewage treatment (%):94.7 Total efficiency of removal from wastewater after on-site and off-site (domestic treatment plant) RMMs (%):94.7 Maximum allowable site tonnage (M_{safe}) based on release following total wastewater treatment removal (kg/d):2.6e5 Assumed on-site sewage treatment plant flow (m^3/d):2000
Conditions and measures related to external treatment of waste for disposal	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

Contributing scenario controlling worker exposure for 0: Formulation and (re)packing of substances and mixtures	
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100% (unless stated differently).
Physical state	: Liquid, vapour pressure 0.5 - 10 kPa at STP.
Amounts used	: Not applicable.
Frequency and duration of use	: Covers daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management	: Not applicable.
Other given operational conditions affecting workers exposure	: Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented.
	Contributing Scenarios-Operational conditions and risk management measures
	General measures (skin irritants) Avoid all skin contact with product, clean up contamination/spills as soon as they occur. Wear gloves (tested to EN374) if hand contamination likely, wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.
	General exposures (closed systems) No other specific measures identified.
	General exposures (open systems) No other specific measures identified.
	Process sampling No other specific measures identified.
	Bulk product storage No other specific measures identified.
	Laboratory activities No other specific measures identified.
	Equipment cleaning and maintenance No other specific measures identified.
	Bulk transfers

No other specific measures identified.

Drum and small package filling
No other specific measures identified.

Mixing operations (open systems)
No other specific measures identified.

Manual-Transfer from/pouring from containers
No other specific measures identified.

Drum/batch transfers
No other specific measures identified.

tableting, compression, extrusion or pelletisation
No other specific measures identified.

Conditions and measures related to personal protection and hygiene

Section 3: - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: Formulation and (re)packing of substances and mixtures

Exposure assessment (environment): : Not available.

Exposure estimation : The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure estimation and reference to its source - Workers: 0: Formulation and (re)packing of substances and mixtures

Exposure assessment (human): : Not available.

Exposure estimation : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 4: - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet.

Health : Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation. Available hazard data do not support the need for a DNEL to be established for other health effects. Users are advised to consider national Occupational Exposure Limits or other equivalent values. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : General exposures (closed systems)
Handle substance within a closed system.

General exposures (open systems)
Provide extract ventilation to points where emissions occur.
Clear lines prior to de-coupling.

Bulk transfers
Ensure material transfers are under containment or extract ventilation.

Clear lines prior to de-coupling.
Avoid splashing.

Process sampling
Ensure material transfers are under containment or extract ventilation.

Laboratory activities
Handle in a fume cupboard or under extract ventilation.

Bulk product storage
Store substance within a closed system.
Ensure dedicated sample points are provided.
Avoid dip sampling.

Equipment cleaning and maintenance
Drain down system prior to equipment break-in or maintenance.
Retain drain-downs in sealed storage pending disposal or for subsequent recycle.
Clean spills immediately.

Drum and small package filling
Fill containers/cans at dedicated fill points supplied with local extract ventilation.

Mixing operations (open systems)
Provide extract ventilation to points where emissions occur.

Manual-Transfer from/pouring from containers
Provide extract ventilation to points where emissions occur.
Use drum pumps or carefully pour from container.

Drum/batch transfers
Use drum pumps.
Provide extract ventilation to points where emissions occur.

tableting, compression, extrusion or pelletisation
Provide extract ventilation to points where emissions occur.

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definition : Mixture
 Code : 40711
 Product name : JP-5

Section 1: - Title

Short title of the exposure scenario : Metal working fluids/rolling oils - Industrial (Kerosene)
 List of use descriptors : **Identified use name:** Metal working fluids/rolling oils -Industrial (Kerosene)
Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b, PROC09, PROC10, PROC13, PROC17
Sector of end use: SU03
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC04, ESVOC SpERC 4.7a.v1
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.
 Environmental contributing scenarios : **Metal working fluids/rolling oils**
 Health Contributing Scenarios : **Metal working fluids/rolling oils**

Industry Association : Concawe
 Processes and activities covered by the exposure scenario : Covers the use in formulated MWFs/rolling oils including transfer operations, rolling and annealing activities, cutting/machining activities, automated and manual application of corrosion protections (including brushing, dipping and spraying), equipment maintenance, draining and disposal of waste oils.

Section 2: - Exposure controls

Contributing scenario controlling environmental exposure for 0: Metal working fluids/rolling oils

Product characteristics : Substance is complex UVCB Predominantly hydrophobic
 Amounts used : Fraction of EU tonnage used in region:0.1
 Regional use tonnage (tonnes/year):5.5e2
 Fraction of Regional tonnage used locally:0.18
 Annual site tonnage (tonnes/year):1.0e2
 Maximum daily site tonnage (kg/day):5.0e3
 Frequency and duration of use : Continuous release. Emission Days (days/year):20
 Environment factors not influenced by risk management : Local freshwater dilution factor:10
 Local marine water dilution factor:100
 Other given operational conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM):0.02
 Release fraction to wastewater from process (initial release prior to RMM):3.0e-5
 Release fraction to soil from process (initial release prior to RMM):0
 Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.
 Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater.
 Prevent discharge of undissolved substance to or recover from onsite wastewater.
 No wastewater treatment required.
 Treat air emission to provide a typical removal efficiency of (%):70
 Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%):0
 If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):0

Organizational measures to prevent/limit release from site	: Do not apply industrial sludge to natural soils. sludge should be incinerated, contained or reclaimed.
Conditions and measures related to municipal sewage treatment plant	: Estimated substance removal from wastewater via on-site sewage treatment (%):94.7 Total efficiency of removal from wastewater after on-site and off-site (domestic treatment plant) RMMs (%):94.7 Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/d):4.9e5 Assumed on-site sewage treatment plant flow (m^3/d):2000
Conditions and measures related to external treatment of waste for disposal	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

Contributing scenario controlling worker exposure for 0: Metal working fluids/rolling oils

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100% (unless stated differently).
Physical state	: Liquid, vapour pressure 0.5 - 10 kPa at STP.
Amounts used	: Not applicable.
Frequency and duration of use	: Covers daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management	: Not applicable.
Other given operational conditions affecting workers exposure	: Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented. Contributing Scenarios-Operational conditions and risk management measures General measures (skin irritants) Avoid all skin contact with product, clean up contamination/spills as soon as they occur. Wear gloves (tested to EN374) if hand contamination likely, wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying. General exposures (closed systems) No other specific measures identified. General exposures (open systems) No other specific measures identified. Bulk transfers No other specific measures identified. Filling/preparation of equipment from drums or containers No other specific measures identified. Process sampling No other specific measures identified. Metal machining operations No other specific measures identified. Treatment by dipping and pouring No other specific measures identified.

Spraying
No other specific measures identified.

Manual applications e.g. brushing, rolling
No other specific measures identified.

Automated metal rolling/forming
No other specific measures identified.

Semi-automated metal rolling/forming
No other specific measures identified.

Equipment cleaning and maintenance-Dedicated facility
No other specific measures identified.

Equipment cleaning and maintenance-Non-dedicated facility
No other specific measures identified.

Storage
No other specific measures identified.

Conditions and measures related to personal protection and hygiene

Section 3: - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: Metal working fluids/rolling oils

Exposure assessment (environment): : Not available.

Exposure estimation : The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure estimation and reference to its source - Workers: 0: Metal working fluids/rolling oils

Exposure assessment (human): : Not available.

Exposure estimation : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 4: - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet.

Health : Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation. Available hazard data do not support the need for a DNEL to be established for other health effects. Users are advised to consider national Occupational Exposure Limits or other equivalent values. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : General exposures (closed systems)
Handle substance within a closed system.

General exposures (open systems)
Ensure material transfers are under containment or extract ventilation.

Bulk transfers
Provide extract ventilation to points where emissions occur.

Clear lines prior to de-coupling.

Filling/preparation of equipment from drums or containers
Provide a good standard of controlled ventilation (10 to 15 air changes per hour).
Use drum pumps or carefully pour from container.

Process sampling
Provide a good standard of controlled ventilation (10 to 15 air changes per hour).

Metal machining operations
Provide extract ventilation to points where emissions occur.

Spraying
Provide extract ventilation to points where emissions occur.

Treatment by dipping and pouring
Provide extract ventilation to points where emissions occur.

Manual applications e.g. brushing, rolling
Use ventilation to extract vapours from freshly coated articles/objects

Automated metal rolling/forming
Store substance within a closed system.

Semi-automated metal rolling/forming
Provide extract ventilation to points where emissions occur.

Equipment cleaning and maintenance-Dedicated facility
Drain down system prior to equipment break-in or maintenance.
Retain drain-downs in sealed storage pending disposal or for subsequent recycle.
Clean spills immediately.

Equipment cleaning and maintenance-Non-dedicated facility
Drain down system prior to equipment break-in or maintenance.
Retain drain-downs in sealed storage pending disposal or for subsequent recycle.
Clean spills immediately.

Storage
Store substance within a closed system.
Ensure dedicated sample points are provided.
Avoid dip sampling.

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definition : Mixture
 Code : 40711
 Product name : JP-5

Section 1: - Title

Short title of the exposure scenario : Metal working fluids/rolling oils - Profesional (Kerosene)

List of use descriptors : **Identified use name:** Metal working fluids/rolling oils-Professional (Kerosene)
Process Category: PROC01, PROC02, PROC03, PROC05, PROC08a, PROC08b, PROC09, PROC10, PROC11, PROC13, PROC17
Sector of end use: SU03
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC08a, ERC08d, ESVOC SpERC 8.7c.v1
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.

Environmental contributing scenarios : **Metal working fluids/rolling oils**

Health Contributing Scenarios : **Metal working fluids/rolling oils**

Industry Association : Concawe

Processes and activities covered by the exposure scenario : Covers the use in formulated MWFs/rolling oils including transfer operations, rolling and annealing activities, cutting/machining activities, automated and manual application of corrosion protections (including brushing, dipping and spraying), equipment maintenance, draining and disposal of waste oils.

Section 2: - Exposure controls

Contributing scenario controlling environmental exposure for 0: Metal working fluids/rolling oils

Product characteristics : Substance is complex UVCB Predominantly hydrophobic

Amounts used : Fraction of EU tonnage used in region:0.1
 Regional use tonnage (tonnes/year):5.5e2
 Fraction of Regional tonnage used locally:5e-4
 Annual site tonnage (tonnes/year):2.7e-1
 Maximum daily site tonnage (kg/day):7.5e-1

Frequency and duration of use : Continuous release. Emission Days (days/year):365

Environment factors not influenced by risk management : Local freshwater dilution factor:10
 Local marine water dilution factor:100

Other given operational conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM):0.15
 Release fraction to wastewater from process (initial release prior to RMM):0.05
 Release fraction to soil from process (initial release prior to RMM):0.05

Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.

Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater.
 No wastewater treatment required.
 Treat air emission to provide a typical removal efficiency of (%):N/A
 Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%):0
 If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):0

Organizational measures to prevent/limit release from site	: Do not apply industrial sludge to natural soils. sludge should be incinerated, contained or reclaimed.
Conditions and measures related to municipal sewage treatment plant	: Estimated substance removal from wastewater via on-site sewage treatment (%):94.7 Total efficiency of removal from wastewater after on-site and off-site (domestic treatment plant) RMMs (%):94.7 Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/d):90 Assumed on-site sewage treatment plant flow (m^3/d):2000
Conditions and measures related to external treatment of waste for disposal	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

Contributing scenario controlling worker exposure for 0: Metal working fluids/rolling oils

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100% (unless stated differently).
Physical state	: Liquid, vapour pressure 0.5 - 10 kPa at STP.
Amounts used	: Not applicable.
Frequency and duration of use	: Covers daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management	: Not applicable.
Other given operational conditions affecting workers exposure	: Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented. Contributing Scenarios-Operational conditions and risk management measures General measures (skin irritants) Avoid all skin contact with product, clean up contamination/spills as soon as they occur. Wear gloves (tested to EN374) if hand contamination likely, wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying. General exposures (closed systems) No other specific measures identified. Bulk transfers No other specific measures identified. Filling/preparation of equipment from drums or containers-Dedicated facility No other specific measures identified. Process sampling No other specific measures identified. Filling/preparation of equipment from drums or containers-Non-dedicated facility No other specific measures identified. Metal machining operations No other specific measures identified. Treatment by dipping and pouring No other specific measures identified.

Spraying
No other specific measures identified.

Manual applications e.g. brushing, rolling
No other specific measures identified.

Equipment cleaning and maintenance-Dedicated facility
No other specific measures identified.

Equipment cleaning and maintenance-Non-dedicated facility
No other specific measures identified.

Storage
No other specific measures identified.

Conditions and measures related to personal protection and hygiene

Section 3: - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: Metal working fluids/rolling oils

Exposure assessment (environment): : Not available.

Exposure estimation : The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure estimation and reference to its source - Workers: 0: Metal working fluids/rolling oils

Exposure assessment (human): : Not available.

Exposure estimation : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 4: - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet.

Health : Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation. Available hazard data do not support the need for a DNEL to be established for other health effects. Users are advised to consider national Occupational Exposure Limits or other equivalent values. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : General exposures (closed systems)
Handle substance within a closed system.

Filling/preparation of equipment from drums or containers-Non-dedicated facility
Provide a good standard of controlled ventilation (10 to 15 air changes per hour).
Use drum pumps or carefully pour from container.

Bulk transfers
Provide extract ventilation to points where emissions occur.
Clear lines prior to de-coupling.

Filling/preparation of equipment from drums or containers-Non-dedicated facility
Provide a good standard of controlled ventilation (10 to 15 air changes per hour).
Use drum pumps or carefully pour from container.

Process sampling
Provide a good standard of controlled ventilation (10 to 15 air changes per hour).

Metal machining operations
Provide extract ventilation to points where emissions occur.

Spraying
Provide extract ventilation to points where emissions occur.
Avoid carrying out operation for more than 4 hours.
Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.
Provide a good standard of controlled ventilation (10 to 15 air changes per hour).
Wear a respirator conforming to EN140 with Type A filter or better.

Treatment by dipping and pouring
Provide extract ventilation to points where emissions occur.
Provide a good standard of controlled ventilation (10 to 15 air changes per hour).

Manual applications e.g. brushing, rolling
Use ventilation to extract vapours from freshly coated articles/objects
Provide a good standard of controlled ventilation (10 to 15 air changes per hour).

Equipment cleaning and maintenance-Dedicated facility
Drain down system prior to equipment break-in or maintenance.
Retain drain-downs in sealed storage pending disposal or for subsequent recycle.
Clean spills immediately.

Equipment cleaning and maintenance-Non-dedicated facility
Drain down system prior to equipment break-in or maintenance.
Retain drain-downs in sealed storage pending disposal or for subsequent recycle.
Clean spills immediately.

Storage
Store substance within a closed system.
Ensure dedicated sample points are provided.
Avoid dip sampling.

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definition : Mixture
Code : 40711
Product name : JP-5

Section 1: - Title

Short title of the exposure scenario : Road and construction applications - Professional (Kerosene)
List of use descriptors : **Identified use name:** Road and construction applications -Professional (Kerosene)
Process Category: PROC08a, PROC08b, PROC09, PROC10, PROC11, PROC13
Sector of end use: SU22
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC08d, ERC08f, ESVOC SpERC 8.15.v1
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.
Environmental contributing scenarios : **Road and construction applications**
Health Contributing Scenarios : **Road and construction applications**

Industry Association : Concawe
Processes and activities covered by the exposure scenario : Application of surface coatings and binders in road and construction activities, including paving uses, manual mastic and in the application of roofing and water-proofing membranes.

Section 2: - Exposure controls

Contributing scenario controlling environmental exposure for 0: Road and construction applications

Product characteristics : Substance is complex UVCB Predominantly hydrophobic
Amounts used : Fraction of EU tonnage used in region:0.1
Regional use tonnage (tonnes/year):5.1e3
Fraction of Regional tonnage used locally:5e-4
Annual site tonnage (tonnes/year):2.5
Maximum daily site tonnage (kg/day):7.0
Frequency and duration of use : Continuous release. Emission Days (days/year):365
Environment factors not influenced by risk management : Local freshwater dilution factor:10
Local marine water dilution factor:100
Other given operational conditions affecting environmental exposure : Release fraction to air from wide dispersive use (regional only):0.95
Release fraction to wastewater from wide dispersive use:0.01
Release fraction to soil from wide dispersive use (regional only):0.04
Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater.
No wastewater treatment required.
Treat air emission to provide a typical removal efficiency of (%): Not applicable.
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%):0
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):0
Organizational measures to prevent/limit release from site : Do not apply industrial sludge to natural soils. sludge should be incinerated, contained or reclaimed.

Conditions and measures related to municipal sewage treatment plant	: Estimated substance removal from wastewater via on-site sewage treatment (%):94.7 Total efficiency of removal from wastewater after on-site and off-site (domestic treatment plant) RMMs (%):94.7 Maximum allowable site tonnage (M_{safe}) based on release following total wastewater treatment removal (kg/d):780 Assumed on-site sewage treatment plant flow (m^3/d):2000
Conditions and measures related to external treatment of waste for disposal	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

Contributing scenario controlling worker exposure for 0: Road and construction applications

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100% (unless stated differently).
Physical state	: Liquid, vapour pressure 0.5 - 10 kPa at STP.
Amounts used	: Not applicable.
Frequency and duration of use	: Covers daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management	: Not applicable.
Other given operational conditions affecting workers exposure	: Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented. Contributing Scenarios-Operational conditions and risk management measures General measures (skin irritants) Avoid all skin contact with product, clean up contamination/spills as soon as they occur. Wear gloves (tested to EN374) if hand contamination likely, wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Drum/batch transfers-Non-dedicated facility No other specific measures identified. Manual applications e.g. brushing, rolling No other specific measures identified. Spraying/fogging by machine application elevated temperature No other specific measures identified. Dipping, immersion and pouring No other specific measures identified. Equipment cleaning and maintenance No other specific measures identified.
Conditions and measures related to personal protection and hygiene	

Section 3: - Exposure estimation and reference to its source

Website: : Further information on the assumptions contained in this Exposure Scenario can be found at:

Exposure estimation and reference to its source - Environment: 1: Road and construction applications

Exposure assessment (environment): : Not available.

Exposure estimation : The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure estimation and reference to its source - Workers: 0: Road and construction applications

Exposure assessment (human): : Not available.

Exposure estimation : The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated.

Section 4: - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet.

Health : Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data do not enable the derivation of a DNEL for carcinogenic effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk Management Measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : Drum/batch transfers-Non-dedicated facility
Ensure operation is undertaken outdoors. Avoid carrying out operation for more than 1 hour. Use drum pumps. Avoid spillage when withdrawing pump. Clear up spills immediately and dispose of waste safely.

Manual applications e.g. brushing, rolling
Ensure operation is undertaken outdoors. Avoid carrying out operation for more than 4 hours. Use long-handled brushes and rollers where possible. Ensure operatives are trained to minimise exposures.

Spraying/fogging by machine application elevated temperature
Ensure operation is undertaken outdoors. Wear a respirator conforming to EN140 with Type A filter or better. Apply within a vented cab supplied with filtered air under positive pressure and with a protection factor of >20. Segregate the activity away from other operations.

Dipping, immersion and pouring
Ensure operation is undertaken outdoors. Avoid carrying out operation for more than 4 hours. Ensure operatives are trained to minimise exposures.

Equipment cleaning and maintenance
Drain down system prior to equipment break-in or maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle.

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definition : Mixture
Code : 40711
Product name : JP-5

Section 1: - Title

Short title of the exposure scenario : Use as a Fuel - Industrial (Kerosene)
List of use descriptors : **Identified use name:** Use as a fuel -Industrial (Kerosene)
Process Category: PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC16
Sector of end use: SU03
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC07, ESVOC SpERC 7.12a.v1
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.
Environmental contributing scenarios : Use as a fuel
Health Contributing Scenarios : Use as a fuel

Industry Association : Concawe
Processes and activities covered by the exposure scenario : Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

Section 2: - Exposure controls

Contributing scenario controlling environmental exposure for 0: Use as a fuel

Product characteristics : Substance is complex UVCB Predominantly hydrophobic
Amounts used : Fraction of EU tonnage used in region:0.1
Regional use tonnage (tonnes/year):5.5e5
Fraction of Regional tonnage used locally:1
Annual site tonnage (tonnes/year):5.5e5
Maximum daily site tonnage (kg/day):1.8e6
Frequency and duration of use : Continuous release. Emission Days (days/year):300
Environment factors not influenced by risk management : Local freshwater dilution factor:10
Local marine water dilution factor:100
Other given operational conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM):5.0e-3
Release fraction to wastewater from process (initial release prior to RMM):0.00001
Release fraction to soil from process (initial release prior to RMM):0
Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater sediment.
If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
Treat air emission to provide a typical removal efficiency of (%):95
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%):84.6
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):0
Organizational measures to prevent/limit release from site : Do not apply industrial sludge to natural soils. sludge should be incinerated, contained or reclaimed.

Conditions and measures related to municipal sewage treatment plant	: Estimated substance removal from wastewater via on-site sewage treatment (%):94.7 Total efficiency of removal from wastewater after on-site and off-site (domestic treatment plant) RMMs (%):94.7 Maximum allowable site tonnage (M_{safe}) based on release following total wastewater treatment removal (kg/d):5.3e6 Assumed on-site sewage treatment plant flow (m^3/d):2000
Conditions and measures related to external treatment of waste for disposal	: Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment.
Conditions and measures related to external recovery of waste	: This substance is consumed during use and no waste from the substance is generated.

Contributing scenario controlling worker exposure for 0: Use as a fuel

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100% (unless stated differently).
Physical state	: Liquid, vapour pressure 0.5 - 10 kPa at STP.
Amounts used	: Not applicable.
Frequency and duration of use	: Covers daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management	: Not applicable.
Other given operational conditions affecting workers exposure	: Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented.
	Contributing Scenarios-Operational conditions and risk management measures
	General measures (skin irritants) Avoid all skin contact with product, clean up contamination/spills as soon as they occur. Wear gloves (tested to EN374) if hand contamination likely, wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.
	General exposures (closed systems) No other specific measures identified.
	Bulk transfers No other specific measures identified.
	Use as a fuel-Closed system No other specific measures identified.
	Drum/batch transfers No other specific measures identified.
	Equipment cleaning and maintenance No other specific measures identified.
	Bulk product storage No other specific measures identified.
Conditions and measures related to personal protection and hygiene	

Section 3: - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: Use as a fuel

Exposure assessment (environment): : Not available.

Exposure estimation : The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure estimation and reference to its source - Workers: 0: Use as a fuel

Exposure assessment (human): : Not available.

Exposure estimation : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 4: - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet.
Health	: Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation. Available hazard data do not support the need for a DNEL to be established for other health effects. Users are advised to consider national Occupational Exposure Limits or other equivalent values. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH CSA

Environment	: Not available.
Health	: General exposures (closed systems) Handle substance within a closed system.
	<p>Bulk transfers Ensure operation is undertaken outdoors. Ensure material transfers are under containment or extract ventilation. Clear lines prior to de-coupling. Ensure operatives are trained to minimise exposures.</p> <p>Use as a fuel Closed system Handle substance within a closed system.</p> <p>Drum/batch transfers Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Use drum pumps. Avoid spillage when withdrawing pump. Ensure operatives are trained to minimise exposures.</p> <p>Equipment cleaning and maintenance Drain down system prior to equipment break-in or maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle. Clean spills immediately. Apply vessel entry procedures, including use of forced supplied air. Transfer via enclosed lines.</p> <p>Bulk product storage Store substance within a closed system. Ensure dedicated sample points are provided. Avoid dip sampling.</p>

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definition : Mixture
Code : 40711
Product name : JP-5

Section 1: - Title

Short title of the exposure scenario : Use as a Fuel - Professional (Kerosene)
List of use descriptors : **Identified use name:** Use as a fuel-Professional (Kerosene)
Process Category: PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC16
Sector of end use: SU22
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC09a, ERC09b, ESVOC SpERC 9.12b.v1
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.
Environmental contributing scenarios : **Use as a fuel**
Health Contributing Scenarios : **Use as a fuel**

Industry Association : Concawe
Processes and activities covered by the exposure scenario : Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

Section 2: - Exposure controls

Contributing scenario controlling environmental exposure for 0: Use as a fuel

Product characteristics : Substance is complex UVCB Predominantly hydrophobic
Amounts used : Fraction of EU tonnage used in region:0.1
Regional use tonnage (tonnes/year):4.4e6
Fraction of Regional tonnage used locally:5.0e-4
Annual site tonnage (tonnes/year):2.2e3
Maximum daily site tonnage (kg/day):6.1e3
Frequency and duration of use : Continuous release. Emission Days (days/year):365
Environment factors not influenced by risk management : Local freshwater dilution factor:10
Local marine water dilution factor:100
Other given operational conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM):1.0e-3
Release fraction to wastewater from process (initial release prior to RMM):0.00001
Release fraction to soil from process (initial release prior to RMM):0.00001
Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater.
No wastewater treatment required.
Treat air emission to provide a typical removal efficiency of (%):N/A
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%):0
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):0
Organizational measures to prevent/limit release from site : Do not apply industrial sludge to natural soils. sludge should be incinerated, contained or reclaimed.

Conditions and measures related to municipal sewage treatment plant	: Estimated substance removal from wastewater via on-site sewage treatment (%):94.7 Total efficiency of removal from wastewater after on-site and off-site (domestic treatment plant) RMMs (%):94.7 Maximum allowable site tonnage (M_{safe}) based on release following total wastewater treatment removal (kg/d):6.9e5 Assumed on-site sewage treatment plant flow (m ³ /d):2000
Conditions and measures related to external treatment of waste for disposal	: Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment.
Conditions and measures related to external recovery of waste	: This substance is consumed during use and no waste from the substance is generated.

Contributing scenario controlling worker exposure for 0: Use as a fuel

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100% (unless stated differently).
Physical state	: Liquid, vapour pressure 0.5 - 10 kPa at STP.
Amounts used	: Not applicable.
Frequency and duration of use	: Covers daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management	: Not applicable.
Other given operational conditions affecting workers exposure	: Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented.
	Contributing Scenarios-Operational conditions and risk management measures
	General measures (skin irritants) Avoid all skin contact with product, clean up contamination/spills as soon as they occur. Wear gloves (tested to EN374) if hand contamination likely, wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.
	General exposures (closed systems) No other specific measures identified.
	Use as a fuel-Closed system No other specific measures identified.
	Bulk transfers No other specific measures identified.
	Transfer from/pouring from containers No other specific measures identified.
	Equipment cleaning and maintenance No other specific measures identified.
	Bulk product storage No other specific measures identified.
Conditions and measures related to personal protection and hygiene	

Section 3: - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: Use as a fuel

Exposure assessment (environment): : Not available.

Exposure estimation : The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure estimation and reference to its source - Workers: 0: Use as a fuel

Exposure assessment (human): : Not available.

Exposure estimation : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 4: - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet.
Health	: Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation. Available hazard data do not support the need for a DNEL to be established for other health effects. Users are advised to consider national Occupational Exposure Limits or other equivalent values. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH CSA

Environment	: Not available.
Health	: General exposures (closed systems) Handle substance within a closed system. Use as a fuel-Closed system Handle substance within a closed system. Bulk transfers Ensure operation is undertaken outdoors. Ensure material transfers are under containment or extract ventilation. Clear lines prior to de-coupling. Ensure operatives are trained to minimise exposures. Transfer from/pouring from containers Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Use drum pumps or carefully pour from container. Avoid spillage when withdrawing pump. Equipment cleaning and maintenance Drain down system prior to equipment break-in or maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle. Clean spills immediately. Apply vessel entry procedures, including use of forced supplied air. Transfer via enclosed lines. Bulk product storage Store substance within a closed system. Ensure dedicated sample points are provided. Avoid dip sampling.

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definition : Mixture
Code : 40711
Product name : JP-5

Section 1: - Title

Short title of the exposure scenario : Use as an intermediate - Industrial (Kerosene)
List of use descriptors : **Identified use name:** Use as an intermediate. -Industrial (Kerosene)
Process Category: PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC15
Sector of end use: SU03, SU08, SU09
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC06a, ESVOC SpERC 6.1a.v1
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.
Environmental contributing scenarios : **Use as an intermediate.**
Health Contributing Scenarios : **Use as an intermediate.**

Industry Association : Concawe
Processes and activities covered by the exposure scenario : Use of substance as an intermediate within closed or contained systems (not related to Strictly Controlled Conditions).
Includes incidental exposures during recycling/recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).

Section 2: - Exposure controls

Contributing scenario controlling environmental exposure for 0: Use as an intermediate.

Product characteristics : Substance is complex UVCB Predominantly hydrophobic
Amounts used : Fraction of EU tonnage used in region:0.1
Regional use tonnage (tonnes/year):1.8e5
Fraction of Regional tonnage used locally:8.3e-2
Annual site tonnage (tonnes/year):1.5e4
Maximum daily site tonnage (kg/day):5.0e4
Frequency and duration of use : Continuous release. Emission Days (days/year):300
Environment factors not influenced by risk management : Local freshwater dilution factor:10
Local marine water dilution factor:100
Other given operational conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM):1.0e-3
Release fraction to wastewater from process (initial release prior to RMM):3.0e-4
Release fraction to soil from process (initial release prior to RMM):0.001
Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater sediment. Prevent discharge of undissolved substance to or recover from onsite wastewater. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
Treat air emission to provide a typical removal efficiency of (%):80
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%):81.4
If discharging to domestic sewage treatment plant, provide the required onsite

Organizational measures to prevent/limit release from site	: wastewater removal efficiency of \geq (%):0 : Do not apply industrial sludge to natural soils. sludge should be incinerated, contained or reclaimed.
Conditions and measures related to municipal sewage treatment plant	: Estimated substance removal from wastewater via on-site sewage treatment (%):94.7 Total efficiency of removal from wastewater after on-site and off-site (domestic treatment plant) RMMs (%):94.7 Maximum allowable site tonnage (M_{safe}) based on release following total wastewater treatment removal (kg/d):1.8e5 Assumed on-site sewage treatment plant flow (m^3/d):2000
Conditions and measures related to external treatment of waste for disposal	: This substance is consumed during use and no waste from the substance is generated.
Conditions and measures related to external recovery of waste	: This substance is consumed during use and no waste from the substance is generated.

Contributing scenario controlling worker exposure for 0: Use as an intermediate.

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100% (unless stated differently).
Physical state	: Liquid, vapour pressure 0.5 - 10 kPa at STP.
Amounts used	: Not applicable.
Frequency and duration of use	: Covers daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management	: Not applicable.
Other given operational conditions affecting workers exposure	: Operation is carried out at elevated temperature ($> 20^\circ\text{C}$ above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios-Operational conditions and risk management measures

General measures (skin irritants)

Avoid all skin contact with product, clean up contamination/spills as soon as they occur.

Wear gloves (tested to EN374) if hand contamination likely, wash off any skin contamination immediately.

Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

General exposures (open systems)

No other specific measures identified.

General exposures (closed systems)

No other specific measures identified.

Process sampling

No other specific measures identified.

Bulk product storage

No other specific measures identified.

Laboratory activities

No other specific measures identified.

Equipment cleaning and maintenance

No other specific measures identified.

Bulk transfers

No other specific measures identified.

Conditions and measures related to personal protection and hygiene

Section 3: - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: Use as an intermediate.

Exposure assessment (environment): : Not available.

Exposure estimation : The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure estimation and reference to its source - Workers: 0: Use as an intermediate.

Exposure assessment (human): : Not available.

Exposure estimation : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 4: - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet.

Health : Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation. Available hazard data do not support the need for a DNEL to be established for other health effects. Users are advised to consider national Occupational Exposure Limits or other equivalent values. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : General exposures (closed systems)
Handle substance within a closed system.

General exposures (open systems)
Provide extract ventilation to points where emissions occur.
Clear lines prior to de-coupling.

Bulk transfers
Ensure material transfers are under containment or extract ventilation.
Clear lines prior to de-coupling.
Avoid splashing.

Process sampling
Ensure material transfers are under containment or extract ventilation.

Laboratory activities
Handle in a fume cupboard or under extract ventilation.

Equipment cleaning and maintenance
Drain down system prior to equipment break-in or maintenance.
Retain drain-downs in sealed storage pending disposal or for subsequent recycle.
Clean spills immediately.

Bulk product storage
Store substance within a closed system.
Ensure dedicated sample points are provided.
Avoid dip sampling.

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definition : Mixture
Code : 40711
Product name : JP-5

Section 1: - Title

Short title of the exposure scenario : Use as binders and release agents - Industrial (Kerosene)
List of use descriptors : **Identified use name:** Use as binders and release agents -Industrial (Kerosene)
Process Category: PROC01, PROC02, PROC03, PROC04, PROC06, PROC07, PROC08b, PROC10, PROC13, PROC14
Sector of end use: SU03
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC04, ESVOC SpERC 4.10a.v1
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.
Environmental contributing scenarios : **Use as binders and release agents**
Health Contributing Scenarios : **Use as binders and release agents**

Industry Association : Concawe
Processes and activities covered by the exposure scenario : Covers the use as binders and release agents including material transfers, mixing, application (including spraying and brushing), mould forming and casting, and handling of waste.

Section 2: - Exposure controls

Contributing scenario controlling environmental exposure for 0: Use as binders and release agents

Product characteristics : Substance is complex UVCB Predominantly hydrophobic
Amounts used : Fraction of EU tonnage used in region:0.1
Regional use tonnage (tonnes/year):8.0e2
Fraction of Regional tonnage used locally:1
Annual site tonnage (tonnes/year):8.0e2
Maximum daily site tonnage (kg/day):4.0e4
Frequency and duration of use : Continuous release. Emission Days (days/year):20
Environment factors not influenced by risk management : Local freshwater dilution factor:10
Local marine water dilution factor:100
Other given operational conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM):1.0
Release fraction to wastewater from process (initial release prior to RMM):3.0e-6
Release fraction to soil from process (initial release prior to RMM):0
Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater.
Prevent discharge of undissolved substance to or recover from onsite wastewater.
No wastewater treatment required.
Treat air emission to provide a typical removal efficiency of (%):80
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%):0
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):0

Organizational measures to prevent/limit release from site	: Do not apply industrial sludge to natural soils. sludge should be incinerated, contained or reclaimed.
Conditions and measures related to municipal sewage treatment plant	: Estimated substance removal from wastewater via on-site sewage treatment (%):94.7 Total efficiency of removal from wastewater after on-site and off-site (domestic treatment plant) RMMs (%):94.7 Maximum allowable site tonnage (M_{safe}) based on release following total wastewater treatment removal (kg/d):4.1e6 Assumed on-site sewage treatment plant flow (m^3/d):2000
Conditions and measures related to external treatment of waste for disposal	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

Contributing scenario controlling worker exposure for 0: Use as binders and release agents

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100% (unless stated differently).
Physical state	: Liquid, vapour pressure 0.5 - 10 kPa at STP.
Amounts used	: Not applicable.
Frequency and duration of use	: Covers daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management	: Not applicable.
Other given operational conditions affecting workers exposure	: Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented. Contributing Scenarios-Operational conditions and risk management measures General measures (skin irritants) Avoid all skin contact with product, clean up contamination/spills as soon as they occur. Wear gloves (tested to EN374) if hand contamination likely, wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying. Drum/batch transfers No other specific measures identified. Bulk transfers No other specific measures identified. Mixing operations (closed systems) No other specific measures identified. Mixing operations (open systems) No other specific measures identified. Mould forming No other specific measures identified. Casting operations No other specific measures identified. Machine Spraying No other specific measures identified.

Manual Spraying
No other specific measures identified.

Manual applications e.g. brushing, rolling
No other specific measures identified.

Dipping, immersion and pouring
No other specific measures identified.

Bulk product storage
No other specific measures identified.

Conditions and measures related to personal protection and hygiene

Section 3: - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: Use as binders and release agents

Exposure assessment (environment): : Not available.

Exposure estimation : The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure estimation and reference to its source - Workers: 0: Use as binders and release agents

Exposure assessment (human): : Not available.

Exposure estimation : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 4: - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet.
Health	: Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation. Available hazard data do not support the need for a DNEL to be established for other health effects. Users are advised to consider national Occupational Exposure Limits or other equivalent values. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : Bulk transfers
Handle substance within a closed system.

Drum/batch transfers
Provide a good standard of general ventilation.
Natural ventilation is from doors, windows etc.
Controlled ventilation means air is supplied or removed by a powered fan.
Use drum pumps.
Avoid spillage when withdrawing pump.

Mixing operations (closed systems)
Provide a good standard of general ventilation.
Natural ventilation is from doors, windows etc.
Controlled ventilation means air is supplied or removed by a powered fan.
Transfer materials directly to mixing vessels.

Mixing operations (open systems)

Provide a good standard of general ventilation.

Natural ventilation is from doors, windows etc.

Controlled ventilation means air is supplied or removed by a powered fan.

Mould forming

Provide a good standard of general ventilation.

Natural ventilation is from doors, windows etc.

Controlled ventilation means air is supplied or removed by a powered fan.

Casting operations

Provide a good standard of general ventilation.

Natural ventilation is from doors, windows etc.

Controlled ventilation means air is supplied or removed by a powered fan.

Machine Spraying

Provide extract ventilation to points where emissions occur.

Automate activity where possible.

Manual Spraying

Provide a good standard of controlled ventilation (10 to 15 air changes per hour).

Avoid carrying out operation for more than 4 hours.

Automate activity where possible.

Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.

Ensure operatives are trained to minimise exposures.

Manual applications e.g. brushing, rolling

Provide a good standard of general ventilation.

Natural ventilation is from doors, windows etc.

Controlled ventilation means air is supplied or removed by a powered fan.

Use long-handled brushes and rollers where possible.

Dipping, immersion and pouring

Provide a good standard of general ventilation.

Natural ventilation is from doors, windows etc.

Controlled ventilation means air is supplied or removed by a powered fan.

Bulk product storage

Store substance within a closed system.

Ensure dedicated sample points are provided.

Avoid dip sampling.

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definition : Mixture
Code : 40711
Product name : JP-5

Section 1: - Title

Short title of the exposure scenario : Use as binders and release agents - Professional (Kerosene)
List of use descriptors : **Identified use name:** Use as binders and release agents-Professional (Kerosene)
Process Category: PROC01, PROC02, PROC03, PROC04, PROC06, PROC08a, PROC08b, PROC10, PROC11, PROC14
Sector of end use: SU22
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC08a, ERC08d, ESVOC SpERC 8.10b.v1
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.
Environmental contributing scenarios : **Use as binders and release agents**
Health Contributing Scenarios : **Use as binders and release agents**

Industry Association : Concawe
Processes and activities covered by the exposure scenario : Covers the use as binders and release agents including material transfers, mixing, application by spraying, brushing, and handling of waste.

Section 2: - Exposure controls

Contributing scenario controlling environmental exposure for 0: Use as binders and release agents

Product characteristics : Substance is complex UVCB Predominantly hydrophobic
Amounts used : Fraction of EU tonnage used in region:0.1
Regional use tonnage (tonnes/year):8.0e2
Fraction of Regional tonnage used locally:5e-4
Annual site tonnage (tonnes/year):0.4
Maximum daily site tonnage (kg/day):1.1
Frequency and duration of use : Continuous release. Emission Days (days/year):365
Environment factors not influenced by risk management : Local freshwater dilution factor:10
Local marine water dilution factor:100
Other given operational conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM):0.95
Release fraction to wastewater from process (initial release prior to RMM):0.025
Release fraction to soil from process (initial release prior to RMM):0.025
Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater.
No wastewater treatment required.
Treat air emission to provide a typical removal efficiency of (%):N/A
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%):0
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):0
Organizational measures to prevent/limit release from site : Do not apply industrial sludge to natural soils. sludge should be incinerated, contained or reclaimed.

Conditions and measures related to municipal sewage treatment plant	: Estimated substance removal from wastewater via on-site sewage treatment (%):94.7 Total efficiency of removal from wastewater after on-site and off-site (domestic treatment plant) RMMs (%):94.7 Maximum allowable site tonnage (M_{safe}) based on release following total wastewater treatment removal (kg/d):130 Assumed on-site sewage treatment plant flow (m^3/d):2000
Conditions and measures related to external treatment of waste for disposal	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

Contributing scenario controlling worker exposure for 0: Use as binders and release agents

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100% (unless stated differently).
Physical state	: Liquid, vapour pressure 0.5 - 10 kPa at STP.
Amounts used	: Not applicable.
Frequency and duration of use	: Covers daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management	: Not applicable.
Other given operational conditions affecting workers exposure	: Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented.
	Contributing Scenarios-Operational conditions and risk management measures
	General measures (skin irritants) Avoid all skin contact with product, clean up contamination/spills as soon as they occur. Wear gloves (tested to EN374) if hand contamination likely, wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.
	Bulk transfers No other specific measures identified.
	Drum/batch transfers No other specific measures identified.
	Mixing operations (closed systems) No other specific measures identified.
	Mixing operations (open systems) No other specific measures identified.
	Mould forming No other specific measures identified.
	Casting operations No other specific measures identified.
	Machine-Spraying No other specific measures identified.
	Manual-Spraying No other specific measures identified.

Manual applications e.g. brushing, rolling
No other specific measures identified.

Dipping, immersion and pouring
No other specific measures identified.

Bulk product storage
No other specific measures identified.

Conditions and measures related to personal protection and hygiene

Section 3: - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: Use as binders and release agents

Exposure assessment (environment): : Not available.

Exposure estimation : The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure estimation and reference to its source - Workers: 0: Use as binders and release agents

Exposure assessment (human): : Not available.

Exposure estimation : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 4: - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet.

Health : Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation. Available hazard data do not support the need for a DNEL to be established for other health effects. Users are advised to consider national Occupational Exposure Limits or other equivalent values. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : Bulk transfers
Handle substance within a closed system.

Drum/batch transfers
Provide a good standard of general ventilation.
Natural ventilation is from doors, windows etc.
Controlled ventilation means air is supplied or removed by a powered fan. Use drum pumps. Avoid spillage when withdrawing pump.

Mixing operations (closed systems)
Provide a good standard of general ventilation.
Natural ventilation is from doors, windows etc.
Controlled ventilation means air is supplied or removed by a powered fan. Transfer materials directly to mixing vessels.

Mixing operations (open systems)
Provide a good standard of general ventilation.
Natural ventilation is from doors, windows etc.

Controlled ventilation means air is supplied or removed by a powered fan.

Mould forming

Provide a good standard of controlled ventilation (10 to 15 air changes per hour).

Casting operations

Provide a good standard of controlled ventilation (10 to 15 air changes per hour).

Machine Spraying

Provide extract ventilation to points where emissions occur. Automate activity where possible. Avoid carrying out operation for more than 1 hour.

Manual Spraying

Provide a good standard of general ventilation.

Natural ventilation is from doors, windows etc.

Controlled ventilation means air is supplied or removed by a powered fan.

Segregate the activity away from other operations. Automate activity where possible.

Wear a respirator conforming to EN140 with Type A filter or better. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.

Manual applications e.g. brushing, rolling

Provide a good standard of controlled ventilation (10 to 15 air changes per hour).

Use long-handled brushes and rollers where possible.

Dipping, immersion and pouring

Provide a good standard of controlled ventilation (10 to 15 air changes per hour).

Bulk product storage

Store substance within a closed system. Ensure dedicated sample points are provided. Avoid dip sampling.

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definition : Mixture
Code : 40711
Product name : JP-5

Section 1: - Title

Short title of the exposure scenario : Use as functional fluids - Industrial (Kerosene)
List of use descriptors : **Identified use name:** Use as functional fluids. -Industrial (Kerosene)
Process Category: PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC09
Sector of end use: SU03
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC07, ESVOC SpERC 7.13a.v1
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.
Environmental contributing scenarios : **Use as functional fluids.**
Health Contributing Scenarios : **Use as functional fluids.**

Industry Association : Concawe
Processes and activities covered by the exposure scenario : Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in industrial equipment including maintenance and related material transfers.

Section 2: - Exposure controls

Contributing scenario controlling environmental exposure for 0: Use as functional fluids.
Product characteristics : Substance is complex UVCB Predominantly hydrophobic
Amounts used : Fraction of EU tonnage used in region:0.1
Regional use tonnage (tonnes/year):550
Fraction of Regional tonnage used locally:0.018
Annual site tonnage (tonnes/year):10
Maximum daily site tonnage (kg/day):500
Frequency and duration of use : Continuous release. Emission Days (days/year):20
Environment factors not influenced by risk management : Local freshwater dilution factor:10
Local marine water dilution factor:100
Other given operational conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM):5.0e-3
Release fraction to wastewater from process (initial release prior to RMM):3.0e-5
Release fraction to soil from process (initial release prior to RMM):0.001
Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater.
Prevent discharge of undissolved substance to or recover from onsite wastewater.
No wastewater treatment required.
Treat air emission to provide a typical removal efficiency of (%):0
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%):0
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):0

Organizational measures to prevent/limit release from site	: Do not apply industrial sludge to natural soils. sludge should be incinerated, contained or reclaimed.
Conditions and measures related to municipal sewage treatment plant	: Estimated substance removal from wastewater via on-site sewage treatment (%):94.7 Total efficiency of removal from wastewater after on-site and off-site (domestic treatment plant) RMMs (%):94.7 Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/d):6.3e4 Assumed on-site sewage treatment plant flow (m^3/d):2000
Conditions and measures related to external treatment of waste for disposal	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

Contributing scenario controlling worker exposure for 0: Use as functional fluids.

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100% (unless stated differently).
Physical state	: Liquid, vapour pressure 0.5 - 10 kPa at STP.
Amounts used	: Not applicable.
Frequency and duration of use	: Covers daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management	: Not applicable.
Other given operational conditions affecting workers exposure	: Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented. Contributing Scenarios-Operational conditions and risk management measures General measures (skin irritants) Avoid all skin contact with product, clean up contamination/spills as soon as they occur. Wear gloves (tested to EN374) if hand contamination likely, wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. General exposures (closed systems) No other specific measures identified. Bulk transfers No other specific measures identified. General exposures (open systems) No other specific measures identified. Drum/batch transfers No other specific measures identified. Equipment maintenance No other specific measures identified. Storage No other specific measures identified. Filling of articles/equipment-Closed system No other specific measures identified. Filling/preparation of equipment from drums or containers No other specific measures identified.

Remanufacture of reject articles
No other specific measures identified.

Conditions and measures related to personal protection and hygiene

Section 3: - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: Use as functional fluids.

Exposure assessment (environment): : Not available.

Exposure estimation : The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure estimation and reference to its source - Workers: 0: Use as functional fluids.

Exposure assessment (human): : Not available.

Exposure estimation : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 4: - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet.

Health : Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation. Available hazard data do not support the need for a DNEL to be established for other health effects. Users are advised to consider national Occupational Exposure Limits or other equivalent values. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : General exposures (closed systems)
Handle substance within a closed system.

Bulk transfers
Handle substance within a closed system.

Filling of articles/equipment Closed system
Ensure material transfers are under containment or extract ventilation.

Drum/batch transfers
Use drum pumps.

Equipment maintenance
Drain down system prior to equipment break-in or maintenance.
Retain drain-downs in sealed storage pending disposal or for subsequent recycle.

Storage
Store substance within a closed system.
Ensure dedicated sample points are provided.
Avoid dip sampling.

Filling/preparation of equipment from drums or containers
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

General exposures (open systems)

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Remanufacture of reject articles

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definition : Mixture
Code : 40711
Product name : JP-5

Section 1: - Title

Short title of the exposure scenario : Use in Agrochemicals uses - Professional (Kerosene)
List of use descriptors : **Identified use name:** Use in Agrochemicals - Professional (Kerosene)
Process Category: PROC01, PROC02, PROC04, PROC08a, PROC08b, PROC11, PROC13
Sector of end use: SU22
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC08a, ERC08d, ESVOC SpERC 8.11a.v1
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.
Environmental contributing scenarios : **Use in Agrochemicals**
Health Contributing Scenarios : **Use in Agrochemicals**

Industry Association : Concawe
Processes and activities covered by the exposure scenario : Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging; including equipment clean-downs and disposal.

Section 2: - Exposure controls

Contributing scenario controlling environmental exposure for 0: Use in Agrochemicals

Product characteristics : Substance is complex UVCB Predominantly hydrophobic
Amounts used : Fraction of EU tonnage used in region:0.1
Regional use tonnage (tonnes/year):3.1e2
Fraction of Regional tonnage used locally:0.002
Annual site tonnage (tonnes/year):6.2e-1
Maximum daily site tonnage (kg/day):1.7
Frequency and duration of use : Continuous release. Emission Days (days/year):365
Environment factors not influenced by risk management : Local freshwater dilution factor:10
Local marine water dilution factor:100
Other given operational conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM):0.9
Release fraction to wastewater from process (initial release prior to RMM):0.01
Release fraction to soil from process (initial release prior to RMM):0.09
Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater.
No wastewater treatment required.
Treat air emission to provide a typical removal efficiency of (%):N/A
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%):0
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):0
Organizational measures to prevent/limit release from site : Do not apply industrial sludge to natural soils. sludge should be incinerated, contained or reclaimed.

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Conditions and measures related to municipal sewage treatment plant	: Estimated substance removal from wastewater via on-site sewage treatment (%):94.7 Total efficiency of removal from wastewater after on-site and off-site (domestic treatment plant) RMMs (%):94.7 Maximum allowable site tonnage (M_{safe}) based on release following total wastewater treatment removal (kg/d):2.1e2 Assumed on-site sewage treatment plant flow (m ³ /d):2000
Conditions and measures related to external treatment of waste for disposal	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

Contributing scenario controlling worker exposure for 0: Use in Agrochemicals

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100% (unless stated differently).
Physical state	: Liquid, vapour pressure 0.5 - 10 kPa at STP.
Amounts used	: Not applicable.
Frequency and duration of use	: Covers daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management	: Not applicable.
Other given operational conditions affecting workers exposure	: Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented.
	Contributing Scenarios-Operational conditions and risk management measures
	General measures (skin irritants) Avoid all skin contact with product, clean up contamination/spills as soon as they occur. Wear gloves (tested to EN374) if hand contamination likely, wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.
	Transfer from/pouring from containers No other specific measures identified.
	Mixing in containers No other specific measures identified.
	Spraying/fogging by manual application No other specific measures identified.
	Spraying/fogging by machine application No other specific measures identified.
	Ad hoc manual application via trigger sprays, dipping etc. No other specific measures identified.
	Equipment cleaning and maintenance No other specific measures identified.
	Bulk product storage No other specific measures identified.
Conditions and measures related to personal protection and hygiene	

Section 3: - Exposure estimation and reference to its source

Website:	: Not applicable.
Exposure estimation and reference to its source - Environment: 1: Use in Agrochemicals	
Exposure assessment (environment):	: Not available.
Exposure estimation	: The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.
Exposure estimation and reference to its source - Workers: 0: Use in Agrochemicals	
Exposure assessment (human):	: Not available.
Exposure estimation	: The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 4: - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet.
Health	: Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation. Available hazard data do not support the need for a DNEL to be established for other health effects. Users are advised to consider national Occupational Exposure Limits or other equivalent values. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH CSA

Environment	: Not available.
Health	: <ul style="list-style-type: none"> Transfer from/pouring from containers <ul style="list-style-type: none"> Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Ensure operatives are trained to minimise exposures. Mixing in containers <ul style="list-style-type: none"> Ensure operation is undertaken outdoors. Provide extract ventilation to points where emissions occur. Clear lines prior to de-coupling. Spraying/fogging by manual application <ul style="list-style-type: none"> Ensure operation is undertaken outdoors. Wear a respirator conforming to EN140 with Type A filter or better. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying. Ensure operatives are trained to minimise exposures. Spraying/fogging by machine application <ul style="list-style-type: none"> Apply within a vented cab supplied with filtered air under positive pressure and with a protection factor of >20. Ensure operation is undertaken outdoors. Ad hoc manual application via trigger sprays, dipping etc. <ul style="list-style-type: none"> Ensure operation is undertaken outdoors. Avoid carrying out operation for more than 4 hours. Ensure operatives are trained to minimise exposures. Equipment cleaning and maintenance <ul style="list-style-type: none"> Drain down system prior to equipment break-in or maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle. Clean spills immediately.

Bulk product storage

Store substance within a closed system. Ensure dedicated sample points are provided. Avoid dip sampling.

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definition : Mixture
 Code : 40711
 Product name : JP-5

Section 1: - Title

Short title of the exposure scenario : Use in Cleaning Agents - Industrial (kerosene)
 List of use descriptors : **Identified use name:** Use in Cleaning Agents - Industrial (Kerosene)
Process Category: PROC01, PROC02, PROC03, PROC04, PROC07, PROC08a, PROC08b, PROC10, PROC13
Sector of end use: SU03
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC04, ESVOC SpERC 4.4a.v1
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.
 Environmental contributing scenarios : **Use in Cleaning Agents**
 Health Contributing Scenarios : **Use in Cleaning Agents**

Industry Association : Concawe
 Processes and activities covered by the exposure scenario : Covers the use as a component of cleaning products including transfer from storage, pouring/unloading from drums or containers.
 Exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance.

Section 2: - Exposure controls

Contributing scenario controlling environmental exposure for 0: Use in Cleaning Agents

Product characteristics : Substance is complex UVCB Predominantly hydrophobic
 Amounts used : Fraction of EU tonnage used in region:0.1
 Regional use tonnage (tonnes/year):3.1e4
 Fraction of Regional tonnage used locally:3.2e-3
 Annual site tonnage (tonnes/year):1.0e2
 Maximum daily site tonnage (kg/day):5.0e3
 Frequency and duration of use : Continuous release. Emission Days (days/year):20
 Environment factors not influenced by risk management : Local freshwater dilution factor:10
 Local marine water dilution factor:100
 Other given operational conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM):1.0
 Release fraction to wastewater from process (initial release prior to RMM):3.0e-6
 Release fraction to soil from process (initial release prior to RMM):0
 Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.
 Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater.
 Prevent discharge of undissolved substance to or recover from onsite wastewater.
 No wastewater treatment required.
 Treat air emission to provide a typical removal efficiency of (%):70
 Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%):0
 If discharging to domestic sewage treatment plant, provide the required onsite

Organizational measures to prevent/limit release from site	: wastewater removal efficiency of \geq (%):0 : Do not apply industrial sludge to natural soils. sludge should be incinerated, contained or reclaimed.
Conditions and measures related to municipal sewage treatment plant	: Estimated substance removal from wastewater via on-site sewage treatment (%):94.7 Total efficiency of removal from wastewater after on-site and off-site (domestic treatment plant) RMMs (%):94.7 Maximum allowable site tonnage (M_{safe}) based on release following total wastewater treatment removal (kg/d):6.3e5 Assumed on-site sewage treatment plant flow (m^3/d):2000
Conditions and measures related to external treatment of waste for disposal	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

Contributing scenario controlling worker exposure for 0: Use in Cleaning Agents

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100% (unless stated differently).
Physical state	: Liquid, vapour pressure 0.5 - 10 kPa at STP.
Amounts used	: Not applicable.
Frequency and duration of use	: Covers daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management	: Not applicable.
Other given operational conditions affecting workers exposure	: Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented. Contributing Scenarios-Operational conditions and risk management measures General measures (skin irritants) Avoid all skin contact with product, clean up contamination/spills as soon as they occur. Wear gloves (tested to EN374) if hand contamination likely, wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying. General exposures (closed systems) No other specific measures identified. Bulk transfers No other specific measures identified. Automatic processing with:(semi) Closed system Use in contained systems No other specific measures identified. Automatic processing with:(semi) Use in contained systems Drum/batch transfers No other specific measures identified. Cleaning Products-Closed system No other specific measures identified. Filling/preparation of equipment from drums or containers Dedicated facility No other specific measures identified. Use in contained batch processes Semi-automated process. (e.g. Semi-automatic application of floor care and maintenance products)

No other specific measures identified.

Dipping, immersion and pouring
No other specific measures identified.

Cleaning with low-pressure washers
No other specific measures identified.

Cleaning with high-pressure washers
No other specific measures identified.

Manual-Cleaning Surfaces no spraying
No other specific measures identified.

Equipment cleaning and maintenance
No other specific measures identified.

Storage-Product sampling
No other specific measures identified.

Conditions and measures related to personal protection and hygiene

Section 3: - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: Use in Cleaning Agents

Exposure assessment (environment): : Not available.

Exposure estimation : The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure estimation and reference to its source - Workers: 0: Use in Cleaning Agents

Exposure assessment (human): : Not available.

Exposure estimation : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 4: - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet.

Health : Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation. Available hazard data do not support the need for a DNEL to be established for other health effects. Users are advised to consider national Occupational Exposure Limits or other equivalent values. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : General exposures (closed systems)
Handle substance within a closed system.

Bulk transfers
Ensure material transfers are under containment or extract ventilation.
Clear lines prior to de-coupling.

Automatic processing with:(semi) Closed system Use in contained systems
Handle substance within a closed system.

Automatic processing with: (semi) Closed system Use in contained systems Drum/
batch transfers

Handle substance within a closed system.

Application of cleaning products in closed systems

Handle substance within a closed system.

Filling/preparation of equipment from drums or containers Dedicated facility

Use drum pumps or carefully pour from container.

Avoid spillage when withdrawing pump.

Clear up spills immediately and dispose of waste safely.

Use in contained batch processes Semi-automated process. (e.g. Semi-automatic
application of floor care and maintenance products)

Provide extract ventilation to points where emissions occur.

Dipping, immersion and pouring

Provide extract ventilation to points where emissions occur.

Avoid manual contact with wet work pieces.

Cleaning with low-pressure washers

Avoid carrying out operation for more than 4 hours.

Ensure operatives are trained to minimise exposures.

Cleaning with high-pressure washers

Ventilation is normally required when handling or using this product.

Segregate the activity away from other operations.

Manual Cleaning Surfaces no spraying

Ventilation is normally required when handling or using this product.

Equipment cleaning and maintenance

Drain down system prior to equipment break-in or maintenance.

Retain drain-downs in sealed storage pending disposal or for subsequent recycle.

Clean spills immediately.

Storage Product sampling

Store substance within a closed system.

Ensure dedicated sample points are provided.

Avoid dip sampling.

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definition : Mixture
Code : 40711
Product name : JP-5

Section 1: - Title

Short title of the exposure scenario : Use in Cleaning Agents - Professional (Kerosene)
List of use descriptors : **Identified use name:** Use in Cleaning Agents - Professional (Kerosene)
Process Category: PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC10, PROC11, PROC13
Sector of end use: SU22
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC08a, ERC08d, ESVOC SpERC 8.4b.v1
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.
Environmental contributing scenarios : **Use in Cleaning Agents**
Health Contributing Scenarios : **Use in Cleaning Agents**

Industry Association : Concawe
Processes and activities covered by the exposure scenario : Covers the use as a component of cleaning products including pouring/unloading from drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping automated and by hand).

Section 2: - Exposure controls

Contributing scenario controlling environmental exposure for 0: Use in Cleaning Agents

Product characteristics : Substance is complex UVCB Predominantly hydrophobic
Amounts used : Fraction of EU tonnage used in region:0.1
Regional use tonnage (tonnes/year):4.5e3
Fraction of Regional tonnage used locally:1
Annual site tonnage (tonnes/year):2.2
Maximum daily site tonnage (kg/day):6.1
Frequency and duration of use : Continuous release. Emission Days (days/year):365
Environment factors not influenced by risk management : Local freshwater dilution factor:10
Local marine water dilution factor:100
Other given operational conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM):0.02
Release fraction to wastewater from process (initial release prior to RMM):0.000001
Release fraction to soil from process (initial release prior to RMM):0
Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater.
No wastewater treatment required.
Treat air emission to provide a typical removal efficiency of (%):N/A
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%):0
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):0

Organizational measures to prevent/limit release from site	: Do not apply industrial sludge to natural soils. sludge should be incinerated, contained or reclaimed.
Conditions and measures related to municipal sewage treatment plant	: Estimated substance removal from wastewater via on-site sewage treatment (%):94.7 Total efficiency of removal from wastewater after on-site and off-site (domestic treatment plant) RMMs (%):94.7 Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/d):7.9e2 Assumed on-site sewage treatment plant flow (m^3/d):2000
Conditions and measures related to external treatment of waste for disposal	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

Contributing scenario controlling worker exposure for 0: Use in Cleaning Agents

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100% (unless stated differently).
Physical state	: Liquid, vapour pressure 0.5 - 10 kPa at STP.
Amounts used	: Not applicable.
Frequency and duration of use	: Covers daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management	: Not applicable.
Other given operational conditions affecting workers exposure	: Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented. Contributing Scenarios-Operational conditions and risk management measures General measures (skin irritants) Avoid all skin contact with product, clean up contamination/spills as soon as they occur. Wear gloves (tested to EN374) if hand contamination likely, wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying. Filling/preparation of equipment from drums or containers-Non-dedicated facility No other specific measures identified. Filling/preparation of equipment from drums or containers-Dedicated facility No other specific measures identified. Filling/preparation of equipment from drums or containers-Batch process No other specific measures identified. Use in contained batch processes-Semi-automated process. (e.g.: Semi-automatic application of floor care and maintenance products) No other specific measures identified. Automatic processing with: (semi) Closed system Use in contained systems No other specific measures identified. Automatic processing with: (semi) Closed system Use in contained systems Drum/ batch transfers No other specific measures identified. Use in contained batch processes-Semi-automated process. (e.g.: Semi-automatic

application of floor care and maintenance products)
No other specific measures identified.

Manual-Cleaning-Surfaces-Dipping, immersion and pouring
No other specific measures identified.

Cleaning with low-pressure washers-Rolling, Brushing-no spraying
No other specific measures identified.

Cleaning with high-pressure washers-Spraying-Indoor.
No other specific measures identified.

Manual-Cleaning-Wiping-Rolling, Brushing-Spraying-Surfaces
No other specific measures identified.

Degreasing small objects in cleaning station-Ad hoc manual application via trigger sprays, dipping etc.-Wiping-Rolling, Brushing
No other specific measures identified.

Large surfaces-Cleaning with high-pressure washers-Spraying-Indoor.
No other specific measures identified.

Application of cleaning products in closed systems Outdoor.
No other specific measures identified.

Cleaning of medical devices
No other specific measures identified.

Equipment cleaning and maintenance
No other specific measures identified.

Storage Use in closed, continuous process with occasional controlled exposure
No other specific measures identified.

Conditions and measures related to personal protection and hygiene

Section 3: - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: Use in Cleaning Agents

Exposure assessment (environment): : Not available.

Exposure estimation : The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure estimation and reference to its source - Workers: 0: Use in Cleaning Agents

Exposure assessment (human): : Not available.

Exposure estimation : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 4: - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet.

Health	: Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation. Available hazard data do not support the need for a DNEL to be established for other health effects. Users are advised to consider national Occupational Exposure Limits or other equivalent values. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
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Additional good practice advice beyond the REACH CSA

Environment	: Not available.
Health	: <p>Filling/preparation of equipment from drums or containers Non-dedicated facility Ensure operation is undertaken outdoors. Avoid carrying out operation for more than 4 hours. Ensure operatives are trained to minimise exposures.</p> <p>Filling/preparation of equipment from drums or containers Dedicated facility Ensure operation is undertaken outdoors. Avoid carrying out operation for more than 4 hours. Ensure operatives are trained to minimise exposures.</p> <p>Filling/preparation of equipment from drums or containers Batch process Handle substance within a closed system.</p> <p>Automatic processing with: (semi) Closed system Use in contained systems Handle substance within a closed system.</p> <p>Automatic processing with: (semi) Closed system Use in contained systems Drum/ batch transfers Handle substance within a closed system.</p> <p>Use in contained batch processes Semi-automated process. (e.g. Semi-automatic application of floor care and maintenance products) Handle substance within a closed system.</p> <p>Manual Cleaning Surfaces Dipping, immersion and pouring Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Avoid carrying out operation for more than 4 hours. Ensure operatives are trained to minimise exposures.</p> <p>Cleaning with low-pressure washers Rolling, Brushing no spraying Limit the substance content in the product to 5%. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Ensure operatives are trained to minimise exposures.</p> <p>Cleaning with high-pressure washers Spraying Indoor. Limit the substance content in the product to 1%. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Ensure operatives are trained to minimise exposures. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.</p> <p>Manual Cleaning Wiping Rolling, Brushing Spraying Surfaces Limit the substance in product to 10%. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Ensure operatives are trained to minimise exposures.</p> <p>Degreasing small objects in cleaning station Ad hoc manual application via trigger sprays, dipping etc. Wiping Rolling, Brushing Provide extract ventilation to points where emissions occur. Ensure operatives are trained to minimise exposures. Limit the substance in product to 10%. Avoid carrying out operation for more than 4 hours.</p>

Large surfaces Cleaning with high-pressure washers Spraying Indoor.
Limit the substance content in the product to 1%. Ensure operation is undertaken outdoors. Ensure operatives are trained to minimise exposures. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.

Application of cleaning products in closed systems Outdoor.
Handle substance within a closed system.

Cleaning of medical devices
Handle substance within a closed system.

Equipment cleaning and maintenance
Drain down system prior to equipment break-in or maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle. Clean spills immediately.

Storage Use in closed, continuous process with occasional controlled exposure
Store substance within a closed system. Ensure dedicated sample points are provided. Avoid dip sampling.

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definition : Mixture
Code : 40711
Product name : JP-5

Section 1: - Title

Short title of the exposure scenario : Use in Lubricants - Profesional (Kerosene): High Environmental Release Categories

List of use descriptors : **Identified use name:** Use in Lubricants. - Profesional (Kerosene): high Environmental Release Category
Process Category: PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC09, PROC10, PROC11, PROC13, PROC17, PROC18, PROC20
Sector of end use: SU22
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC08a, ERC08d, ESVOC SpERC 8.6c.v1
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.

Environmental contributing scenarios : **Use in Lubricants.**

Health Contributing Scenarios : **Use in Lubricants.**

Industry Association : Concawe
Processes and activities covered by the exposure scenario : Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of engines and similar articles, reworking on reject articles, equipment maintenance and disposal of waste oil.

Section 2: - Exposure controls

Contributing scenario controlling environmental exposure for 0: Use in Lubricants.

Product characteristics : Substance is complex UVCB Predominantly hydrophobic
Amounts used : Fraction of EU tonnage used in region:0.1
Regional use tonnage (tonnes/year):2.7e2
Fraction of Regional tonnage used locally:5e-4
Annual site tonnage (tonnes/year):1.4e-1
Maximum daily site tonnage (kg/day):3.7e-1
Frequency and duration of use : Continuous release. Emission Days (days/year):365
Environment factors not influenced by risk management : Local freshwater dilution factor:10
Local marine water dilution factor:100
Other given operational conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM):1.5e-1
Release fraction to wastewater from process (initial release prior to RMM):0.05
Release fraction to soil from process (initial release prior to RMM):0.05
Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater.
No wastewater treatment required.
Treat air emission to provide a typical removal efficiency of (%):N/A
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%):0
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):0

Organizational measures to prevent/limit release from site	: Do not apply industrial sludge to natural soils. sludge should be incinerated, contained or reclaimed.
Conditions and measures related to municipal sewage treatment plant	: Estimated substance removal from wastewater via on-site sewage treatment (%):94.7 Total efficiency of removal from wastewater after on-site and off-site (domestic treatment plant) RMMs (%):94.7 Maximum allowable site tonnage (M_{safe}) based on release following total wastewater treatment removal (kg/d):4.7e1 Assumed on-site sewage treatment plant flow (m^3/d):2000
Conditions and measures related to external treatment of waste for disposal	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

Contributing scenario controlling worker exposure for 0: Use in Lubricants.

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100% (unless stated differently).
Physical state	: Liquid, vapour pressure 0.5 - 10 kPa at STP.
Amounts used	: Not applicable.
Frequency and duration of use	: Covers daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management	: Not applicable.
Other given operational conditions affecting workers exposure	: Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented. Contributing Scenarios-Operational conditions and risk management measures General measures (skin irritants) Avoid all skin contact with product, clean up contamination/spills as soon as they occur. Wear gloves (tested to EN374) if hand contamination likely, wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying. General exposures (closed systems) No other specific measures identified. Operation of equipment containing engine oils and similar No other specific measures identified. General exposures (open systems) No other specific measures identified. Bulk transfers No other specific measures identified. Filling/preparation of equipment from drums or containers-Dedicated facility No other specific measures identified. Operation and lubrication of high energy open equipment Indoor. No other specific measures identified. Operation and lubrication of high energy open equipment Outdoor. No other specific measures identified.

Filling/preparation of equipment from drums or containers-Non-dedicated facility
No other specific measures identified.

Treatment by dipping and pouring
No other specific measures identified.

Spraying
No other specific measures identified.

Maintenance (of larger plant items) and machine set-up.
No other specific measures identified.

Drainage aids Equipment
No other specific measures identified.

Engine lubricant service
No other specific measures identified.

Manual applications e.g. brushing, rolling
No other specific measures identified.

Storage
No other specific measures identified.

Conditions and measures related to personal protection and hygiene

Section 3: - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: Use in Lubricants.

Exposure assessment (environment): : Not available.

Exposure estimation : The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure estimation and reference to its source - Workers: 0: Use in Lubricants.

Exposure assessment (human): : Not available.

Exposure estimation : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 4: - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet.

Health : Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation. Available hazard data do not support the need for a DNEL to be established for other health effects. Users are advised to consider national Occupational Exposure Limits or other equivalent values. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH CSA

Environment	: Not available.
Health	: General exposures (closed systems) Handle substance within a closed system.
	General exposures (open systems) Ensure material transfers are under containment or extract ventilation.
	Bulk transfers Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
	Filling/preparation of equipment from drums or containers-Dedicated facility Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Use drum pumps or carefully pour from container.
	Filling/preparation of equipment from drums or containers-Non-dedicated facility Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Use drum pumps or carefully pour from container.
	Operation and lubrication of high energy open equipment-Indoor. Provide extract ventilation to points where emissions occur.
	Manual applications e.g. brushing, rolling Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Provide extract ventilation to points where emissions occur.
	Treatment by dipping and pouring Provide extract ventilation to points where emissions occur. Allow time for product to drain from workpiece.
	Spraying Provide extract ventilation to points where emissions occur. Avoid carrying out operation for more than 4 hours. Wear a respirator conforming to EN140 with Type A filter or better. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.
	Maintenance (of larger plant items) and machine set-up. Ensure material transfers are under containment or extract ventilation.
	Drainage aids Equipment Drain down system prior to equipment break-in or maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle.
	Operation and lubrication of high energy open equipment Outdoor. Ensure operation is undertaken outdoors. Avoid carrying out operation for more than 1 hour.
	Storage Store substance within a closed system. Ensure dedicated sample points are provided. Avoid dip sampling.
	Engine lubricant service Drain down system prior to equipment break-in or maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle.
	Operation of equipment containing engine oils and similar Handle substance within a closed system.

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definition : Mixture
Code : 40711
Product name : JP-5

Section 1: - Title

Short title of the exposure scenario : Use in Lubricants - Profesional (Kerosene): Low Environmental Release

List of use descriptors : **Identified use name:** Use in Lubricants. - Profesional (Kerosene): low Environmental Release Category
Process Category: PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC09, PROC10, PROC11, PROC13, PROC17, PROC18, PROC20
Sector of end use: SU22
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC09a, ERC09b, ESVOV SpERC 9.6b.v1
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.

Environmental contributing scenarios : **Use in Lubricants.**
Health Contributing Scenarios : **Use in Lubricants.**

Industry Association : Concawe
Processes and activities covered by the exposure scenario : Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of engines and similar articles, reworking on reject articles, equipment maintenance and disposal of waste oil.

Section 2: - Exposure controls

Contributing scenario controlling environmental exposure for 0: Use in Lubricants.

Product characteristics : Substance is complex UVCB Predominantly hydrophobic
Amounts used : Fraction of EU tonnage used in region:0.1
Regional use tonnage (tonnes/year):2.7e2
Fraction of Regional tonnage used locally:1
Annual site tonnage (tonnes/year):1.4e-1
Maximum daily site tonnage (kg/day):3.7e-1
Frequency and duration of use : Continuous release. Emission Days (days/year):365
Environment factors not influenced by risk management : Local freshwater dilution factor:10
Local marine water dilution factor:100
Other given operational conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM):0.01
Release fraction to wastewater from process (initial release prior to RMM):0.01
Release fraction to soil from process (initial release prior to RMM):0.01
Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater.
No wastewater treatment required.
Treat air emission to provide a typical removal efficiency of (%):N/A
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%):0
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):0

Organizational measures to prevent/limit release from site	: Do not apply industrial sludge to natural soils. sludge should be incinerated, contained or reclaimed.
Conditions and measures related to municipal sewage treatment plant	: Estimated substance removal from wastewater via on-site sewage treatment (%):94.7 Total efficiency of removal from wastewater after on-site and off-site (domestic treatment plant) RMMs (%):94.7 Maximum allowable site tonnage (M_{safe}) based on release following total wastewater treatment removal (kg/d):4.8e1 Assumed on-site sewage treatment plant flow (m ³ /d):2000
Conditions and measures related to external treatment of waste for disposal	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

Contributing scenario controlling worker exposure for 0: Use in Lubricants.

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100% (unless stated differently).
Physical state	: Liquid, vapour pressure 0.5 - 10 kPa at STP.
Amounts used	: Not applicable.
Frequency and duration of use	: Covers daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management	: Not applicable.
Other given operational conditions affecting workers exposure	: Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented. Contributing Scenarios-Operational conditions and risk management measures General measures (skin irritants) Avoid all skin contact with product, clean up contamination/spills as soon as they occur. Wear gloves (tested to EN374) if hand contamination likely, wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying. General exposures (closed systems) No other specific measures identified. General exposures (open systems) No other specific measures identified. Bulk transfers No other specific measures identified. Filling/preparation of equipment from drums or containers-Dedicated facility No other specific measures identified. Operation of equipment containing engine oils and similar No other specific measures identified. Operation and lubrication of high energy open equipment-Indoor. No other specific measures identified. Operation and lubrication of high energy open equipment-Outdoor. No other specific measures identified.

Filling/preparation of equipment from drums or containers-Non-dedicated facility
No other specific measures identified.

Treatment by dipping and pouring
No other specific measures identified.

Spraying with local exhaust ventilation
No other specific measures identified.

Spraying without local exhaust ventilation
No other specific measures identified.

Maintenance (of larger plant items) and machine set-up.
No other specific measures identified.

Drainage aids Equipment
No other specific measures identified.

Engine lubricant service
No other specific measures identified.

Manual applications e.g. brushing, rolling
No other specific measures identified.

Storage
No other specific measures identified.

Conditions and measures related to personal protection and hygiene

Section 3: - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: Use in Lubricants.

Exposure assessment (environment): : Not available.

Exposure estimation : The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure estimation and reference to its source - Workers: 0: Use in Lubricants.

Exposure assessment (human): : Not available.

Exposure estimation : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 4: - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet.

Health : Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation. Available hazard data do not support the need for a DNEL to be established for other health effects. Users are advised to consider national Occupational Exposure Limits or other equivalent values. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH CSA

Environment	: Not available.
Health	: General exposures (closed systems) Handle substance within a closed system.
	General exposures (open systems) Ensure material transfers are under containment or extract ventilation.
	Bulk transfers Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
	Filling/preparation of equipment from drums or containers-Dedicated facility Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Use drum pumps or carefully pour from container.
	Filling/preparation of equipment from drums or containers-Non-dedicated facility Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Use drum pumps or carefully pour from container.
	Operation and lubrication of high energy open equipment-Indoor. Provide extract ventilation to points where emissions occur.
	Manual applications e.g. brushing, rolling Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Provide extract ventilation to points where emissions occur.
	Treatment by dipping and pouring Provide extract ventilation to points where emissions occur. Allow time for product to drain from workpiece.
	Spraying with local exhaust ventilation Provide extract ventilation to points where emissions occur. Avoid carrying out operation for more than 4 hours. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.
	Maintenance (of larger plant items) and machine set-up. Ensure material transfers are under containment or extract ventilation.
	Drainage aids Equipment Drain down system prior to equipment break-in or maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle.
	Operation of equipment containing engine oils and similar Handle substance within a closed system.
	Storage Store substance within a closed system. Ensure dedicated sample points are provided. Avoid dip sampling.
	Operation and lubrication of high energy open equipment Outdoor. Ensure operation is undertaken outdoors. Avoid carrying out operation for more than 1 hour.
	Engine lubricant service Drain down system prior to equipment break-in or maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle.
	Spraying without local exhaust ventilation Avoid carrying out operation for more than 4 hours. Wear a respirator conforming to EN140 with Type A filter or better. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definition : Mixture
Code : 40711
Product name : JP-5

Section 1: - Title

Short title of the exposure scenario : Use in Lubricants - Industrial (Kerosene)
List of use descriptors : **Identified use name:** Use in Lubricants. - Industrial (Kerosene)
Process Category: PROC01, PROC02, PROC03, PROC04, PROC07, PROC08a, PROC08b, PROC09, PROC10, PROC13, PROC17, PROC18
Sector of end use: SU03
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC04, ERC07, ESVOC SpERC 4.6a.v1
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.
Environmental contributing scenarios : **Use in Lubricants.**
Health Contributing Scenarios : **Use in Lubricants.**

Industry Association : Concawe
Processes and activities covered by the exposure scenario : Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of machinery/engines and similar articles, reworking on reject articles, equipment maintenance and disposal of wastes.

Section 2: - Exposure controls

Contributing scenario controlling environmental exposure for 0: Use in Lubricants.
Product characteristics : Substance is complex UVCB Predominantly hydrophobic
Amounts used : Fraction of EU tonnage used in region:0.1
Regional use tonnage (tonnes/year):5.5e2
Fraction of Regional tonnage used locally:1
Annual site tonnage (tonnes/year):1.0e2
Maximum daily site tonnage (kg/day):5.0e3
Frequency and duration of use : Continuous release. Emission Days (days/year):20
Environment factors not influenced by risk management : Local freshwater dilution factor:10
Local marine water dilution factor:100
Other given operational conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM):5.0e-3
Release fraction to wastewater from process (initial release prior to RMM):3.0e-5
Release fraction to soil from process (initial release prior to RMM):0.001
Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater.
Prevent discharge of undissolved substance to or recover from onsite wastewater.
No wastewater treatment required.
Treat air emission to provide a typical removal efficiency of (%):70
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%):0
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):0

Organizational measures to prevent/limit release from site	: Do not apply industrial sludge to natural soils. sludge should be incinerated, contained or reclaimed.
Conditions and measures related to municipal sewage treatment plant	: Estimated substance removal from wastewater via on-site sewage treatment (%):94.7 Total efficiency of removal from wastewater after on-site and off-site (domestic treatment plant) RMMs (%):94.7 Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/d):4.9e5 Assumed on-site sewage treatment plant flow (m^3/d):2000
Conditions and measures related to external treatment of waste for disposal	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

Contributing scenario controlling worker exposure for 0: Use in Lubricants.

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100% (unless stated differently).
Physical state	: Liquid, vapour pressure 0.5 - 10 kPa at STP.
Amounts used	: Not applicable.
Frequency and duration of use	: Covers daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management	: Not applicable.
Other given operational conditions affecting workers exposure	: Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented. Contributing Scenarios-Operational conditions and risk management measures General measures (skin irritants) Avoid all skin contact with product, clean up contamination/spills as soon as they occur. Wear gloves (tested to EN374) if hand contamination likely, wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying. General exposures (closed systems) No other specific measures identified. General exposures (open systems) No other specific measures identified. Bulk transfers No other specific measures identified. Filling/preparation of equipment from drums or containers No other specific measures identified. Initial factory fill of equipment No other specific measures identified. Operation and lubrication of high energy open equipment No other specific measures identified. Manual applications e.g. brushing, rolling No other specific measures identified.

Treatment by dipping and pouring
No other specific measures identified.

Spraying
No other specific measures identified.

Maintenance (of larger plant items) and machine set-up.
No other specific measures identified.

Drainage aids Equipment
No other specific measures identified.

Remanufacture of reject articles
No other specific measures identified.

Storage
No other specific measures identified.

Conditions and measures related to personal protection and hygiene

Section 3: - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: Use in Lubricants.

Exposure assessment (environment): : Not available.

Exposure estimation : The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure estimation and reference to its source - Workers: 0: Use in Lubricants.

Exposure assessment (human): : Not available.

Exposure estimation : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 4: - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet.

Health : Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation. Available hazard data do not support the need for a DNEL to be established for other health effects. Users are advised to consider national Occupational Exposure Limits or other equivalent values. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : General exposures (closed systems)
Handle substance within a closed system.

General exposures (open systems)
Ensure material transfers are under containment or extract ventilation.

Bulk transfers
Ensure material transfers are under containment or extract ventilation.

Filling/preparation of equipment from drums or containers
Provide a good standard of general ventilation.

Natural ventilation is from doors, windows etc.
Controlled ventilation means air is supplied or removed by a powered fan.
Use drum pumps or carefully pour from container.

Initial factory fill of equipment
Provide extract ventilation to points where emissions occur.

Operation and lubrication of high energy open equipment
Provide extract ventilation to points where emissions occur.

Manual applications e.g. brushing, rolling
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Use long-handled brushes and rollers where possible.

Treatment by dipping and pouring
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Allow time for product to drain from workpiece.

Spraying
Carry out in a vented booth or extracted enclosure.

Maintenance (of larger plant items) and machine set-up.
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Clear lines prior to de-coupling.
Provide extract ventilation to points where emissions occur.

Drainage aids Equipment
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Retain drain-downs in sealed storage pending disposal or for subsequent recycle.

Remanufacture of reject articles
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Retain drain-downs in sealed storage pending disposal or for subsequent recycle.

Storage
Store substance within a closed system.
Ensure dedicated sample points are provided.
Avoid dip sampling.

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definition : Mixture
 Code : 40711
 Product name : JP-5

Section 1: - Title

Short title of the exposure scenario : Uses in Coatings - Industrial (Kerosene)
 List of use descriptors : **Identified use name:** Uses in Coatings - Industrial (Kerosene)
Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b, PROC10, PROC13, PROC15
Sector of end use: SU03
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC04, ESVOC SpERC 4.3a.v1
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.
 Environmental contributing scenarios : **Uses in Coatings**
 Health Contributing Scenarios : **Uses in Coatings**

Industry Association : Concawe
 Processes and activities covered by the exposure scenario : Covers the use in coatings (paints, inks, adhesives, etc) within closed or contained systems including incidental exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application activities and film formation) and equipment cleaning, maintenance and associated laboratory activities.

Section 2: - Exposure controls

Contributing scenario controlling environmental exposure for 0: Uses in Coatings

Product characteristics : Substance is complex UVCB Predominantly hydrophobic
 Amounts used : Fraction of EU tonnage used in region:0.1
 Regional use tonnage (tonnes/year):9.8e2
 Fraction of Regional tonnage used locally:1
 Annual site tonnage (tonnes/year):9.8e2
 Maximum daily site tonnage (kg/day):4.9e4
 Frequency and duration of use : Continuous release. Emission Days (days/year):20
 Environment factors not influenced by risk management : Local freshwater dilution factor:10
 Local marine water dilution factor:100
 Other given operational conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM):0.98
 Release fraction to wastewater from process (initial release prior to RMM):7.0e-4
 Release fraction to soil from process (initial release prior to RMM):0
 Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.
 Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater sediment.
 Prevent discharge of undissolved substance to or recover from onsite wastewater.
 If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
 Treat air emission to provide a typical removal efficiency of (%):90
 Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%):91.8
 If discharging to domestic sewage treatment plant, provide the required onsite

Organizational measures to prevent/limit release from site	: wastewater removal efficiency of \geq (%):0 : Do not apply industrial sludge to natural soils. sludge should be incinerated, contained or reclaimed.
Conditions and measures related to municipal sewage treatment plant	: Estimated substance removal from wastewater via on-site sewage treatment (%):94.7 Total efficiency of removal from wastewater after on-site and off-site (domestic treatment plant) RMMs (%):94.7 Maximum allowable site tonnage (M_{safe}) based on release following total wastewater treatment removal (kg/d):7.5e4 Assumed on-site sewage treatment plant flow (m^3/d):2000
Conditions and measures related to external treatment of waste for disposal	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

Contributing scenario controlling worker exposure for 0: Uses in Coatings

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100% (unless stated differently).
Physical state	: Liquid, vapour pressure 0.5 - 10 kPa at STP.
Amounts used	: Not applicable.
Frequency and duration of use	: Covers daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management	: Not applicable.
Other given operational conditions affecting workers exposure	: Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented. Contributing Scenarios-Operational conditions and risk management measures General measures (skin irritants) Avoid all skin contact with product, clean up contamination/spills as soon as they occur. Wear gloves (tested to EN374) if hand contamination likely, wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying. General exposures (closed systems) No other specific measures identified. Film formation - force drying, stoving and other technologies No other specific measures identified. Mixing operations (closed systems) No other specific measures identified. Film formation - air drying No other specific measures identified. Preparation of material for application-Mixing operations (open systems) No other specific measures identified. Spraying (automatic/robotic) No other specific measures identified. Spraying-Manual No other specific measures identified.

Material transfers-Dedicated facility
No other specific measures identified.

Material transfers-Non-dedicated facility
No other specific measures identified.

Roller, spreader, flow application
No other specific measures identified.

Dipping, immersion and pouring
No other specific measures identified.

Laboratory activities
No other specific measures identified.

Equipment cleaning and maintenance
No other specific measures identified.

Storage-Product sampling
No other specific measures identified.

Conditions and measures related to personal protection and hygiene

Section 3: - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: Uses in Coatings

Exposure assessment (environment): : Not available.

Exposure estimation : The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure estimation and reference to its source - Workers: 0: Uses in Coatings

Exposure assessment (human): : Not available.

Exposure estimation : The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated.

Section 4: - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet.

Health : Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation. Available hazard data do not support the need for a DNEL to be established for other health effects. Users are advised to consider national Occupational Exposure Limits or other equivalent values. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH CSA

Environment	: Not available.
Health	: General exposures (closed systems) Handle substance within a closed system.
	Film formation - force drying, stoving and other technologies Handle substance within a closed system. Ensure material transfers are under containment or extract ventilation.
	Mixing operations (closed systems) Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Transfer materials directly to mixing vessels.
	Film formation - air drying Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
	Preparation of material for application-Mixing operations (open systems) Provide extract ventilation to points where emissions occur. Avoid manual contact with wet work pieces.
	Spraying (automatic/robotic) Ventilation is normally required when handling or using this product. Automate activity where possible.
	Spraying Manual Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Avoid carrying out operation for more than 4 hours. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.
	Material transfers-Dedicated facility Ensure material transfers are under containment or extract ventilation. Clear lines prior to de-coupling.
	Material transfers-Non-dedicated facility Provide extract ventilation to points where emissions occur.
	Roller, spreader, flow application Provide extract ventilation to points where emissions occur.
	Dipping, immersion and pouring Provide extract ventilation to points where emissions occur. Avoid manual contact with wet work pieces.
	Laboratory activities Handle in a fume cupboard or under extract ventilation.
	Equipment cleaning and maintenance Drain down system prior to equipment break-in or maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle. Clean spills immediately.
	Storage-Product sampling Store substance within a closed system. Ensure dedicated sample points are provided. Avoid dip sampling.

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definition : Mixture
Code : 40711
Product name : JP-5

Section 1: - Title

Short title of the exposure scenario : Uses in Coatings - Professional (Kerosene)
List of use descriptors : **Identified use name:** Uses in Coatings - Professional (Kerosene)
Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC10, PROC11, PROC13, PROC15, PROC19
Sector of end use: SU22
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC08a, ERC08d, ESVOC SpERC 8.3b.v1
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.
Environmental contributing scenarios : **Uses in Coatings**
Health Contributing Scenarios : **Uses in Coatings**

Industry Association : Concawe
Processes and activities covered by the exposure scenario : Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, brush, spreader by hand or similar methods, and film formation), and equipment cleaning, maintenance and associated laboratory activities.

Section 2: - Exposure controls

Contributing scenario controlling environmental exposure for 0: Uses in Coatings

Product characteristics : Substance is complex UVCB Predominantly hydrophobic
Amounts used : Fraction of EU tonnage used in region:0.1
Regional use tonnage (tonnes/year):2.1e2
Fraction of Regional tonnage used locally:5.0e-4
Annual site tonnage (tonnes/year):1.0e-1
Maximum daily site tonnage (kg/day):2.8e-1
Frequency and duration of use : Continuous release. Emission Days (days/year):365
Environment factors not influenced by risk management : Local freshwater dilution factor:10
Local marine water dilution factor:100
Other given operational conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM):0.98
Release fraction to wastewater from process (initial release prior to RMM):0.01
Release fraction to soil from process (initial release prior to RMM):0.01
Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater.
No wastewater treatment required.
Treat air emission to provide a typical removal efficiency of (%):N/A
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%):0
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):0

Organizational measures to prevent/limit release from site	: Do not apply industrial sludge to natural soils. sludge should be incinerated, contained or reclaimed.
Conditions and measures related to municipal sewage treatment plant	: Estimated substance removal from wastewater via on-site sewage treatment (%):94.7 Total efficiency of removal from wastewater after on-site and off-site (domestic treatment plant) RMMs (%):94.7 Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/d):3.6e1 Assumed on-site sewage treatment plant flow (m^3/d):2000
Conditions and measures related to external treatment of waste for disposal	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

Contributing scenario controlling worker exposure for 0: Uses in Coatings

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100% (unless stated differently).
Physical state	: Liquid, vapour pressure 0.5 - 10 kPa at STP.
Amounts used	: Not applicable.
Frequency and duration of use	: Covers daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management	: Not applicable.
Other given operational conditions affecting workers exposure	: Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented. Contributing Scenarios-Operational conditions and risk management measures General measures (skin irritants) Avoid all skin contact with product, clean up contamination/spills as soon as they occur. Wear gloves (tested to EN374) if hand contamination likely, wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying. General exposures (closed systems)-Use in contained systems No other specific measures identified. General exposures (closed systems) with sample collection-Use in contained systems No other specific measures identified. Drum/batch transfers No other specific measures identified. Filling/preparation of equipment from drums or containers No other specific measures identified. Preparation of material for application-Mixing operations (closed systems) No other specific measures identified. Film formation - air drying Outdoor. No other specific measures identified. Preparation of material for application Indoor. No other specific measures identified.

Preparation of material for application-Mixing operations (open systems)-Pouring from small containers-Indoor.

No other specific measures identified.

Preparation of material for application-Mixing operations (open systems)-Pouring from small containers-Outdoor.

No other specific measures identified.

Material transfers-Drum/batch transfers-Non-dedicated facility

No other specific measures identified.

Material transfers-Drum/batch transfers-Dedicated facility

No other specific measures identified.

Material transfers-Drum/batch transfers

No other specific measures identified.

Roller, spreader, flow application-Indoor.

No other specific measures identified.

Roller, spreader, flow application-Outdoor.

No other specific measures identified.

Manual Spraying Indoor.

No other specific measures identified.

Dipping, immersion and pouring Indoor.

No other specific measures identified.

Dipping, immersion and pouring Outdoor.

No other specific measures identified.

Laboratory activities

No other specific measures identified.

Hand application - fingerpaints, pastels, adhesives-Indoor.

No other specific measures identified.

Hand application - fingerpaints, pastels, adhesives-Outdoor.

No other specific measures identified.

Equipment cleaning and maintenance

No other specific measures identified.

Storage-Product sampling

No other specific measures identified.

Conditions and measures related to personal protection and hygiene

Section 3: - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: Uses in Coatings

Exposure assessment (environment): : Not available.

Exposure estimation : The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure estimation and reference to its source - Workers: 0: Uses in Coatings

Exposure assessment (human): : Not available.

Exposure estimation : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 4: - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Date of issue/Date of revision : 24/11/2015.

118/123

Environment	: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet.
Health	: Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation. Available hazard data do not support the need for a DNEL to be established for other health effects. Users are advised to consider national Occupational Exposure Limits or other equivalent values. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH CSA

Environment	: Not available.
Health	: General exposures (closed systems) Handle substance within a closed system.
	General exposures (closed systems)-with sample collection-Use in contained systems Handle substance within a closed system. Ensure material transfers are under containment or extract ventilation.
	Drum/batch transfers Ventilation is normally required when handling or using this product. Use drum pumps.
	Filling/preparation of equipment from drums or containers Handle substance within a closed system. Ensure material transfers are under containment or extract ventilation.
	Preparation of material for application-Mixing operations (closed systems) Handle substance within a closed system. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
	Film formation - air drying-Outdoor. Ensure material transfers are under containment or extract ventilation.
	Preparation of material for application-Indoor. Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Avoid manual contact with wet work pieces. Ensure operatives are trained to minimise exposures.
	Material transfers-Drum/batch transfers-Non-dedicated facility Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Use drum pumps.
	Material transfers-Drum/batch transfers-Dedicated facility Provide extract ventilation to points where emissions occur. Use drum pumps.
	Roller, spreader, flow application Indoor. Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Avoid manual contact with wet work pieces. Ensure operatives are trained to minimise exposures.
	Manual Spraying Indoor. Apply within a vented cab supplied with filtered air under positive pressure and with a protection factor of >20. Avoid carrying out operation for more than 1 hour. Ensure operatives are trained to minimise exposures. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.

Dipping, immersion and pouring-Indoor.
Provide a good standard of controlled ventilation (10 to 15 air changes per hour).
Avoid manual contact with wet work pieces.

Laboratory activities

Provide a good standard of general ventilation.
Natural ventilation is from doors, windows etc.
Controlled ventilation means air is supplied or removed by a powered fan.

Hand application - fingerpaints, pastels, adhesives-Indoor.

Provide a good standard of controlled ventilation (10 to 15 air changes per hour).

Equipment cleaning and maintenance

Drain down system prior to equipment break-in or maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle. Clean spills immediately.

Storage-Product sampling

Store substance within a closed system. Ensure dedicated sample points are provided. Avoid dip sampling.

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definition : Mixture
Code : 40711
Product name : JP-5

Section 1: - Title

Short title of the exposure scenario : [919-446-0] Manufacture of Substance - Industrial
List of use descriptors : **Identified use name:** Manufacture of substance -Industrial
Process Category: PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC15
Sector of end use: SU03
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC01, ERC04, ESVOC SpERC 1.1.v1
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.
Environmental contributing scenarios : **Manufacture of substance**
Health Contributing Scenarios : **Manufacture of substance**

Industry Association : ESIG
Processes and activities covered by the exposure scenario : Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities.

Section 2: - Exposure controls

Contributing scenario controlling environmental exposure for 0: Manufacture of substance

Product characteristics : Substance is complex UVCB Predominantly hydrophobic
Amounts used : Fraction of EU tonnage used in region:0.1
Regional use tonnage (tonnes/year):17000
Fraction of Regional tonnage used locally:1
Annual site tonnage (tonnes/year):17000
Maximum daily site tonnage (kg/day):56000
Frequency and duration of use : Continuous release. Emission Days (days/year):300
Environment factors not influenced by risk management : Local freshwater dilution factor:10
Local marine water dilution factor:100
Other given operational conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM):1.0e-2
Release fraction to wastewater from process (initial release prior to RMM):3.0e-4
Release fraction to soil from process (initial release prior to RMM):0.0001
Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater sediment. Prevent discharge of undissolved substance to or recover from onsite wastewater. No wastewater treatment required.
Treat air emission to provide a typical removal efficiency of (%):90
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%):0
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):0

Organizational measures to prevent/limit release from site	: Do not apply industrial sludge to natural soils. sludge should be incinerated, contained or reclaimed.
Conditions and measures related to municipal sewage treatment plant	: Estimated substance removal from wastewater via on-site sewage treatment (%):93.7 Total efficiency of removal from wastewater after on-site and off-site (domestic treatment plant) RMMs (%):93.7 Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/d):3200000 Assumed on-site sewage treatment plant flow (m^3/d):10000
Conditions and measures related to external treatment of waste for disposal	: During manufacturing, no waste of the substance is generated. External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	: During manufacturing, no waste of the substance is generated. External recovery and recycling of waste should comply with applicable local and/or national regulations.

Contributing scenario controlling worker exposure for 0: Manufacture of substance

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100% (unless stated differently).
Physical state	: Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	: Not applicable.
Frequency and duration of use	: Covers daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management	: Not applicable.
Other given operational conditions affecting workers exposure	: Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios-Operational conditions and risk management measures

General exposures (closed systems)
No other specific measures identified.

General exposures (open systems)
No other specific measures identified.

Process sampling
No other specific measures identified.

Laboratory activities
No other specific measures identified.

General exposures (open systems)
No other specific measures identified.

Bulk transfers
No other specific measures identified.

Equipment cleaning and maintenance
No other specific measures identified.

Storage
No other specific measures identified.

Conditions and measures related to personal protection and hygiene

Section 3: - Exposure estimation and reference to its source

Website: : Further information on the assumptions contained in this Exposure Scenario can be found at:
<http://www.esig.org/>

Exposure estimation and reference to its source - Environment: 1: Manufacture of substance

Exposure assessment (environment): : Not available.

Exposure estimation : The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure estimation and reference to its source - Workers: 0: Manufacture of substance

Exposure assessment (human): : Not available.

Exposure estimation : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 4: - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet. Scaled local assessments for EU refineries have been performed using site-specific data and are attached in PETRORISK file - "Site-Specific Production" worksheet.

Health : Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : Not available.