

SAFETY DATA SHEET



According to Regulation (EC) No. 1907/2006 (REACH)

PETROLEUM

Version number: 1.0. Date of compilation: 2020-12-17 SDS03A

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name

PETROLEUM

Registration number (REACH)

not relevant (mixture)

1.1.6 Unique formula identifier (UFI)

QF00-30VK-000G-0QRK

Other means of identification

Alternative name(s)

Petroleum type B, Kerosene

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

Relevant identified uses

Home heating oil
Distribution
Fuel, aviation, turbine engine

1.3 Details of the supplier of the safety data sheet

VARO Energy Netherlands B.V.
Waalhaven Z.Z. 11
3089 JH Rotterdam
Netherlands

Telephone: +31 (0)881007000

e-mail (competent person)

HSE@varoenergy.com

1.4 Emergency telephone number

Country	Name	Telephone	Opening hours
United Kingdom	National Poisons Information Service (NPIS) (medical professionals only)	0344-8920111	Mon - Fri 09:00 - 17:00
United Kingdom	NHS (general public)	non-emergency: 111 or a doctor; emergency: 999	Mon - Fri 09:00 - 17:00

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Section	Hazard class	Category	Hazard class and category	Hazard statement
2.6	flammable liquid	3	Flam. Liq. 3	H226
3.2	skin corrosion/irritation	2	Skin Irrit. 2	H315
3.8D	specific target organ toxicity - single exposure (narcotic effects, drowsiness)	3	STOT SE 3	H336
3.10	aspiration hazard	1	Asp. Tox. 1	H304
4.1C	hazardous to the aquatic environment - chronic hazard	2	Aquatic Chronic 2	H411

SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006 (REACH)

PETROLEUM

Version number: 1.0. Date of compilation: 2020-12-17 SDS03A

For full text of abbreviations: see SECTION 16.

The most important adverse physicochemical, human health and environmental effects

The product is combustible and can be ignited by potential ignition sources. Spillage and fire water can cause pollution of watercourses.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

- signal word Danger

- pictograms

GHS02, GHS07,
GHS08, GHS09



- hazard statements

H226 Flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H336 May cause drowsiness or dizziness.
H411 Toxic to aquatic life with long lasting effects.

- precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor/...
P331 Do NOT induce vomiting.
P403+P235 Store in a well-ventilated place. Keep cool.

- hazardous ingredients for labelling

Kerosine (petroleum); Kerosine (petroleum), sweetened; Kerosine (petroleum), hydrodesulfurized

2.3 Other hazards

Of no significance.

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture)

3.2 Mixtures

Description of the mixture

Name of substance	Identifier	Wt%	Classification acc. to 1272/2008/EC	Pictograms	Notes	Specific Conc. Limits	M-Factors
Kerosine (petroleum), hydrodesulfurized	CAS No 64742-81-0 EC No 265-184-9	≤ 100	Flam. Liq. 3 / H226 Skin Irrit. 2 / H315 STOT SE 3 / H336 Asp. Tox. 1 / H304 Aquatic Chronic 2 /				

SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006 (REACH)

PETROLEUM

Version number: 1.0. Date of compilation: 2020-12-17 SDS03A

Name of substance	Identifier	Wt%	Classification acc. to 1272/2008/EC	Pictograms	Notes	Specific Conc. Limits	M-Factors
	Index No 649-423-00-8 REACH Reg. No 01-2119462828- 25-xxxx		H411	 			
Kerosine (petroleum)	CAS No 8008-20-6 EC No 232-366-4 Index No 649-404-00-4 REACH Reg. No 01-2119485517- 27-xxxx	≤ 100	Flam. Liq. 3 / H226 Skin Irrit. 2 / H315 STOT SE 3 / H336 Asp. Tox. 1 / H304 Aquatic Chronic 2 / H411	 			
Kerosine (petroleum), sweetened	CAS No 91770-15-9 EC No 294-799-5 Index No 649-427-00-X REACH Reg. No 01-2119502385- 46-xxxx	≤ 100	Flam. Liq. 3 / H226 Skin Irrit. 2 / H315 STOT SE 3 / H336 Asp. Tox. 1 / H304 Aquatic Chronic 2 / H411	 			

Remarks

For full text of H-phrases: see SECTION 16. All the percentages given are percentages by weight unless stated otherwise.

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. In case of unconsciousness place person in the recovery position. Never give anything by mouth. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice.

Following inhalation

Provide fresh air. If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. In case of respiratory tract irritation, consult a physician.

Following skin contact

Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.

PETROLEUM

Version number: 1.0. Date of compilation: 2020-12-17 SDS03A

Following eye contact

Irrigate copiously with clean, fresh water for at least 15 minutes, holding the eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting. Call a POISON CENTER or doctor if you feel unwell. Observe aspiration hazard if vomiting occurs. Immediately call a doctor.

4.2 Most important symptoms and effects, both acute and delayed

Delayed effects can be expected after short or long-term exposure. Narcotic effects. Nausea. Dizziness. Death following aspiration.

4.3 Indication of any immediate medical attention and special treatment needed

For specialist advice physicians should contact the poison centre.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water mist; Dry extinguishing powder; Carbon dioxide (CO₂); Alcohol resistant foam

Unsuitable extinguishing media

Water jet.

5.2 Special hazards arising from the substance or mixture

In case of insufficient ventilation and/or in use, may form flammable/explosive vapour-air mixture. Solvent vapours are heavier than air and may spread along floors. Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures. Vapours may form explosive mixtures with air. Danger of bursting container. Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures.

Hazardous combustion products

During fire hazardous fumes/smoke could be produced. Carbon monoxide (CO). Carbon dioxide (CO₂).

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

Self-contained breathing apparatus (EN 133). Standard protective clothing for firefighters.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety. Ventilate affected area.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases. Personal protective equipment: see section 8.

PETROLEUM

Version number: 1.0. Date of compilation: 2020-12-17 SDS03A

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority. Collect contaminated firefighting water separately.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains.

Advice on how to clean up a spill

Collect spillage. Absorbent material (e.g. sand, diatomaceous earth, acid binder, universal binder, sawdust, etc.). Use explosion-proof electrical/ventilating/lighting/equipment.

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

- measures to prevent fire as well as aerosol and dust generation

Use only outdoors or in a well-ventilated area. Avoidance of ignition sources. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharge. Use local and general ventilation. Due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Collect spillage.

- specific notes/details

Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures. Vapours are heavier than air, spread along floors and form explosive mixtures with air. Vapours may form explosive mixtures with air. Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Keep away from food, drink and animal feedingstuffs. Personal protective equipment: see section 8.

7.2 Conditions for safe storage, including any incompatibilities

Managing of associated risks

- explosive atmospheres

Keep container tightly closed and in a well-ventilated place. Use local and general ventilation. Keep cool. Protect from sunlight.

- flammability hazards

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Protect from sunlight.

SAFETY DATA SHEET



According to Regulation (EC) No. 1907/2006 (REACH)

PETROLEUM

Version number: 1.0. Date of compilation: 2020-12-17 SDS03A

- incompatible substances or mixtures

Incompatible materials: see section 10.

Control of effects

Protect against external exposure, such as

High temperatures. UV-radiation/sunlight.

Consideration of other advice

Store in a well-ventilated place. Keep container tightly closed.

- ventilation requirements

Use local and general ventilation. Ground/bond container and receiving equipment.

- packaging compatibilities

Only packagings which are approved (e.g. acc. to ADR) may be used.

7.3 Specific end use(s)

There is no additional information.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)											
Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m ³]	STEL [ppm]	STEL [mg/m ³]	Ceiling-C [ppm]	Ceiling-C [mg/m ³]	Notation	Source
GB	hydrocarbon mixture (RCP method)		WEL		1,100		2,200				EH40/2005
GB	cycloalkanes (>C7)	8008-20-6	WEL		800						EH40/2005
GB	cycloalkanes (C5-C6)	8008-20-6	WEL		1,800						EH40/2005

Notation

Ceiling-C ceiling value is a limit value above which exposure should not occur
STEL short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)
TWA time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

Relevant DNELs/DMELs/PNECs and other threshold levels

No data available.

8.2 Exposure controls

Appropriate engineering controls

Use only outdoors or in a well-ventilated area. Use local exhaust ventilation.

SAFETY DATA SHEET



According to Regulation (EC) No. 1907/2006 (REACH)

PETROLEUM

Version number: 1.0. Date of compilation: 2020-12-17 SDS03A

Individual protection measures (personal protective equipment)

Eye/face protection



Use safety goggle with side protection (EN 166).

Skin protection

Protective clothing (EN 340 & EN ISO 13688).

- hand protection



Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

- type of material

Nitrile rubber

- material thickness

≥ 0,38 mm.

- breakthrough times of the glove material

Use gloves with a minimum breakthrough times of the glove material: >480 minutes (permeation: level 6).

- other protection measures

Wash hands thoroughly after handling.

Respiratory protection

Do not breathe vapour. Use local and general ventilation. In case of inadequate ventilation wear respiratory protection. Type: A (against organic gases and vapours with a boiling point of > 65 °C, colour code: Brown). At high concentrations (like vessel/ container cleaning) a breathing apparatus must be used (self-contained: SCBA/ fresh air hose breathing apparatus). (concentration oxygen <19.5%: wear self-contained breathing apparatus).

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	liquid
Colour	light yellow - clear
Odour	hydrocarbons, petrol

Other safety parameters

pH (value)	not determined
Melting point/freezing point	-49 °C at 101.3 kPa
Initial boiling point and boiling range	146 - 299 °C at 101.3 kPa
Flash point	>37 °C at 101.3 kPa

SAFETY DATA SHEET



According to Regulation (EC) No. 1907/2006 (REACH)

PETROLEUM

Version number: 1.0. Date of compilation: 2020-12-17 SDS03A

Evaporation rate	not determined
Flammability (solid, gas)	not relevant, (fluid)
Explosive limits	not determined
Vapour pressure	<3.7 kPa at 37.8 °C
Density	0.78 – 0.84 g/cm ³ at 15 °C
Vapour density	this information is not available
Solubility(ies)	not determined

Partition coefficient

- n-octanol/water (log KOW)	this information is not available
Auto-ignition temperature	220 °C (auto-ignition temperature (liquids and gases))
Viscosity	not determined
Explosive properties	none
Oxidising properties	none

9.2 Other information

There is no additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity

The mixture contains reactive substance(s). Risk of ignition.

If heated:

Risk of ignition.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Strong oxidisers.

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Hints to prevent fire or explosion

Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Use local exhaust ventilation.

10.5 Incompatible materials

Oxidisers. Acids.

SAFETY DATA SHEET



According to Regulation (EC) No. 1907/2006 (REACH)

PETROLEUM

Version number: 1.0. Date of compilation: 2020-12-17 SDS03A

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity

Shall not be classified as acutely toxic.

- acute toxicity of components of the mixture

Acute toxicity of components of the mixture					
Name of substance	CAS No	Exposure route	Endpoint	Value	Species
Kerosine (petroleum)	8008-20-6	oral	LD50	>5,000 mg/kg	rat
Kerosine (petroleum)	8008-20-6	inhalation: vapour	LC50	>5.28 mg/l/4h	rat
Kerosine (petroleum)	8008-20-6	dermal	LD50	>2,000 mg/kg	rabbit
Kerosine (petroleum), hydrodesulfurized	64742-81-0	oral	LD50	>5,000 mg/kg	rat
Kerosine (petroleum), hydrodesulfurized	64742-81-0	inhalation: vapour	LC50	>5.28 mg/l/4h	rat
Kerosine (petroleum), hydrodesulfurized	64742-81-0	dermal	LD50	>2,000 mg/kg	rabbit
Kerosine (petroleum), sweetened	91770-15-9	oral	LD50	>5,000 mg/kg	rat
Kerosine (petroleum), sweetened	91770-15-9	inhalation: vapour	LC50	>5.28 mg/l/4h	rat
Kerosine (petroleum), sweetened	91770-15-9	dermal	LD50	>2,000 mg/kg	rabbit

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

SAFETY DATA SHEET



According to Regulation (EC) No. 1907/2006 (REACH)

PETROLEUM

Version number: 1.0. Date of compilation: 2020-12-17 SDS03A

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard (aspiration hazard).

May be fatal if swallowed and enters airways.

SECTION 12: Ecological information

12.1 Toxicity

Toxic to aquatic life with long lasting effects.

Aquatic toxicity (acute) of components of the mixture					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Kerosine (petroleum)	8008-20-6	LL50	5 mg/l	fish	96 h
Kerosine (petroleum)	8008-20-6	EL50	1.4 mg/l	aquatic invertebrates	48 h
Kerosine (petroleum)	8008-20-6	LOEL	1 mg/l	algae	72 h
Kerosine (petroleum), hydrodesulfurized	64742-81-0	LL50	5 mg/l	fish	96 h
Kerosine (petroleum), hydrodesulfurized	64742-81-0	EL50	1.4 mg/l	aquatic invertebrates	48 h
Kerosine (petroleum), hydrodesulfurized	64742-81-0	LOEL	1 mg/l	algae	72 h
Kerosine (petroleum), sweetened	91770-15-9	LL50	5 mg/l	fish	96 h
Kerosine (petroleum), sweetened	91770-15-9	EL50	1.4 mg/l	aquatic invertebrates	48 h
Kerosine (petroleum), sweetened	91770-15-9	LOEL	1 mg/l	algae	72 h

Aquatic toxicity (chronic) of components of the mixture					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Kerosine (petroleum)	8008-20-6	EL50	0.89 mg/l	aquatic invertebrates	21 d
Kerosine (petroleum)	8008-20-6	LOEL	1.2 mg/l	aquatic invertebrates	21 d

SAFETY DATA SHEET



According to Regulation (EC) No. 1907/2006 (REACH)

PETROLEUM

Version number: 1.0. Date of compilation: 2020-12-17 SDS03A

Aquatic toxicity (chronic) of components of the mixture					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Kerosine (petroleum), hydrodesulfurized	64742-81-0	EL50	0.89 mg/l	aquatic invertebrates	21 d
Kerosine (petroleum), hydrodesulfurized	64742-81-0	NOEC	0.098 mg/l	fish	28 d
Kerosine (petroleum), hydrodesulfurized	64742-81-0	LOEL	1.2 mg/l	aquatic invertebrates	21 d
Kerosine (petroleum), sweetened	91770-15-9	EL50	0.89 mg/l	aquatic invertebrates	21 d
Kerosine (petroleum), sweetened	91770-15-9	LOEL	1.2 mg/l	aquatic invertebrates	21 d

12.2 Persistence and degradability

Data are not available.

12.3 Bioaccumulative potential

Data are not available.

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Other adverse effects

Data are not available.

Endocrine disrupting potential

None of the ingredients are listed.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste treatment-relevant information

Solvent reclamation/regeneration.

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

SAFETY DATA SHEET



According to Regulation (EC) No. 1907/2006 (REACH)

PETROLEUM

Version number: 1.0. Date of compilation: 2020-12-17 SDS03A

SECTION 14: Transport information

- 14.1 UN number** 1223
- 14.2 UN proper shipping name** KEROSENE
- 14.3 Transport hazard class(es)**
Class 3 (flammable liquids) (environmentally hazardous)
- 14.4 Packing group** III (substance presenting low danger)
- 14.5 Environmental hazards**
Environmentally hazardous substance (aquatic environment) hazardous to the aquatic environment
Kerosine (petroleum)
- 14.6 Special precautions for user**
Provisions for dangerous goods (ADR) should be complied within the premises.
- 14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code**
No data available.

14.8 Information for each of the UN Model Regulations

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)

UN number	1223
Proper shipping name	KEROSENE
Class	3
Classification code	F1
Packing group	III
Danger label(s)	3, fish and tree



Environmental hazards	yes (hazardous to the aquatic environment)
Special provisions (SP)	664
Excepted quantities (EQ)	E1
Limited quantities (LQ)	5 L
Transport category (TC)	3
Tunnel restriction code (TRC)	D/E
Hazard identification	30
Emergency Action Code	3Y
Remarks	
Dangers (ADN). N2, F NSTR 3232, KEROSENE.	

SAFETY DATA SHEET



According to Regulation (EC) No. 1907/2006 (REACH)

PETROLEUM

Version number: 1.0. Date of compilation: 2020-12-17 SDS03A

International Maritime Dangerous Goods Code (IMDG)

UN number	1223
Proper shipping name	KEROSENE
Class	3
Marine pollutant	yes (hazardous to the aquatic environment)
Packing group	III
Danger label(s)	3, fish and tree



Special provisions (SP)	–
Excepted quantities (EQ)	E1
Limited quantities (LQ)	5 L
EmS	F-E, S-E
Stowage category	A

International Civil Aviation Organization (ICAO-IATA/DGR)

UN number	1223
Proper shipping name	Kerosene
Class	3
Environmental hazards	yes (hazardous to the aquatic environment)
Packing group	III
Danger label(s)	3



Excepted quantities (EQ)	E1
Limited quantities (LQ)	10 L

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Relevant provisions of the European Union (EU)

Restrictions according to REACH, Annex XVII

Name	Name acc. to inventory	CAS No	Restriction	No
PETROLEUM	this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC		R3	3
Kerosine (petroleum), hydrodesulfurized	flammable / pyrophoric		R40	40
Kerosine (petroleum) UN1863	flammable / pyrophoric		R40	40

Legend

- R3 1. Shall not be used in:
- ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays,

SAFETY DATA SHEET



According to Regulation (EC) No. 1907/2006 (REACH)

PETROLEUM

Version number: 1.0. Date of compilation: 2020-12-17 SDS03A

Legend

- tricks and jokes,
 - games for one or more participants, or any article intended to be used as such, even with ornamental aspects,
2. Articles not complying with paragraph 1 shall not be placed on the market.
3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they:
- can be used as fuel in decorative oil lamps for supply to the general public, and,
 - present an aspiration hazard and are labelled with R65 or H304,
4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN).
5. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met:
- (a) lamp oils, labelled with R65 or H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: 'Keep lamps filled with this liquid out of the reach of children'; and, by 1 December 2010, 'Just a sip of lamp oil - or even sucking the wick of lamps - may lead to life-threatening lung damage';
 - (b) grill lighter fluids, labelled with R65 or H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: 'Just a sip of grill lighter may lead to life threatening lung damage';
 - (c) lamp oils and grill lighters, labelled with R65 or H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.
6. No later than 1 June 2014, the Commission shall request the European Chemicals Agency to prepare a dossier, in accordance with Article 69 of the present Regulation with a view to ban, if appropriate, grill lighter fluids and fuel for decorative lamps, labelled R65 or H304, intended for supply to the general public.
7. Natural or legal persons placing on the market for the first time lamp oils and grill lighter fluids, labelled with R65 or H304, shall by 1 December 2011, and annually thereafter, provide data on alternatives to lamp oils and grill lighter fluids labelled R65 or H304 to the competent authority in the Member State concerned. Member States shall make those data available to the Commission.
- R40
1. Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following:
- metallic glitter intended mainly for decoration,
 - artificial snow and frost,
 - 'whoopee' cushions,
 - silly string aerosols,
 - imitation excrement,
 - horns for parties,
 - decorative flakes and foams,
 - artificial cobwebs,
 - stink bombs.
2. Without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with: 'For professional users only'.
3. By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to Article 8 (1a) of Council Directive 75/324/EEC (2).
4. The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.

List of substances subject to authorisation (REACH, Annex XIV) / SVHC - candidate list

None of the ingredients are listed.

Seveso Directive

2012/18/EU (Seveso III)			
No	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the application of lower and upper-tier requirements	Notes
34b	petroleum product (kerosenes)	2,500 25,000	11)

SAFETY DATA SHEET



According to Regulation (EC) No. 1907/2006 (REACH)

PETROLEUM

Version number: 1.0. Date of compilation: 2020-12-17 SDS03A

Notation

11) including jet fuels

Regulation 166/2006/EC concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

None of the ingredients are listed.

Water Framework Directive (WFD)

None of the ingredients are listed.

Regulation 98/2013/EU on the marketing and use of explosives precursors

None of the ingredients are listed.

15.2 Chemical Safety Assessment

For the substances of this mixture a chemical safety assessment has been carried out.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

First version.

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
Aquatic Chronic	Hazardous to the aquatic environment - chronic hazard
Asp. Tox.	Aspiration hazard
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	Ceiling value
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
DGR	Dangerous Goods Regulations (see IATA/DGR)
DMEL	Derived Minimal Effect Level
DNEL	Derived No-Effect Level
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
EH40/2005	EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-licence/)
EINECS	European Inventory of Existing Commercial Chemical Substances
EL50	Effective Loading 50 %: the EL50 corresponds to the loading rate required to produce a response in 50% of the test organisms

SAFETY DATA SHEET



According to Regulation (EC) No. 1907/2006 (REACH)

PETROLEUM

Version number: 1.0. Date of compilation: 2020-12-17 SDS03A

Abbr.	Descriptions of used abbreviations
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
Flam. Liq.	Flammable liquid
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
index No	The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
LL50	Lethal Loading 50 %: the LL50 corresponds to the loading rate causing 50 % lethality
LOEL	Lowest Observed Effect Level
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
NLP	No-Longer Polymer
NOEC	No Observed Effect Concentration
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
ppm	Parts per million
RCP	Reciprocal calculation procedure
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
Skin Corr.	Corrosive to skin
Skin Irrit.	Irritant to skin
STEL	Short-term exposure limit
STOT SE	Specific target organ toxicity - single exposure
SVHC	Substance of Very High Concern
TWA	Time-weighted average
vPvB	Very Persistent and very Bioaccumulative
WEL	Workplace exposure limit

SAFETY DATA SHEET



According to Regulation (EC) No. 1907/2006 (REACH)

PETROLEUM

Version number: 1.0. Date of compilation: 2020-12-17 SDS03A

Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU.

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

Physical and chemical properties: The classification is based on tested mixture.

Health hazards, Environmental hazards: The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in chapter 2 and 3)

Code	Text
H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

1. Manufacture of substance - Industrial

Section 1 Exposure Scenario	
Kerosenes	
Title	Manufacture of substance
Use Descriptor	
Sector(s) of use	3, 8, 9
Process category(ies)	1, 2, 3, 4, 8a, 8b, 15
Environmental release category(ies)	1, 4
Specific Environmental Release Category	ESVOC SpERC 1.1.v1
Processes, tasks, activities covered	
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 Operational conditions and risk management measures	
2.1 Control of worker exposure	
Product characteristics	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently).
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affecting 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 / Product Category	
Specific Risk Management Measures & Operating Conditions	
General measures (skin irritants)	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. 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
Bulk transfers	No other specific measures identified
Process sampling	No other specific measures identified
Laboratory activities	No other specific measures identified
Equipment cleaning and maintenance	No other specific measures identified
Bulk product storage	No other specific measures identified
Kerosene exhibits irritation to the skin and is classified R38 (Irritating to skin) accordingly. The available data for this adverse effect do not provide quantitative dose-response information, but there exists toxicity data appropriate to allow a qualitative risk characterisation; please see section 2 of the SDS for the necessary RMMs.	
2.2 Control of environmental exposure	
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	0.11
Frequency and duration of use	
Continuous release.	
Emission days (days/year)	300

Environmental factors not influenced by risk management	
Local freshwater dilution factor	10
Local marine water dilution factor	100
Other operational conditions of use 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 onsite 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. Onsite wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%):	90
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency >= (%):	97.7
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):	56.1
Organisation measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.	
Estimated substance removal from wastewater via domestic sewage treatment (%):	94.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%):	97.7
Maximum allowable site tonnage (Msafe) based on release following total wastewater treatment removal (kg/d):	2.0e6
Assumed domestic 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.	
Conditions and measures related to external recovery of waste	
During manufacturing no waste of the substance is generated.	
Section 3 Exposure Estimation	
3.1 Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	
3.2 Environment	
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.	
Section 4 Guidance to check compliance with the Exposure Scenario	
4.1 Health	
Available hazard data does not enable the derivation of a DNEL for dermal irritant effects. Risk management measures are based on qualitative risk characterization. Available hazard data does 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.	
4.2 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 (http://cefic.org/en/reach-for-industries-libraries.html). Scaled local assessments for EU refineries have been performed using site-specific data and are attached in PETRORISK file – “Site-Specific Production” worksheet.	

2. Use of substance as an intermediate - Industrial

Section 1 Exposure Scenario	
Kerosenes	
Title	Use as an intermediate
Use Descriptor	
Sector(s) of use	3, 8, 9
Process category(ies)	1, 2, 3, 4, 8a, 8b, 15
Environmental release category(ies)	6a
Specific Environmental Release Category	ESVOC SpERC 6.1a.v1
Processes, tasks, activities covered	
Use of substance as an intermediate (not related to Strictly Controlled Conditions). Includes recycling/recovery, material transfers,	

storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).

Section 2 Operational conditions and risk management measures

2.1 Control of worker exposure

Product characteristics

Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently).
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affecting 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 / Product Category	Specific Risk Management Measures & Operating Conditions
General measures (skin irritants)	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. 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
Bulk transfers	No other specific measures identified
Process sampling	No other specific measures identified
Laboratory activities	No other specific measures identified
Equipment cleaning and maintenance	No other specific measures identified
Bulk product storage	No other specific measures identified

Kerosene exhibits irritation to the skin and is classified R38 (Irritating to skin) accordingly. The available data for this adverse effect do not provide quantitative dose-response information, but there exists toxicity data appropriate to allow a qualitative risk characterisation; please see section 2 of the SDS for the necessary RMMs.

2.2 Control of environmental exposure

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

Frequency and duration of use

Continuous release.

Emission days (days/year)	300
---------------------------	-----

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Other operational conditions of use 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)	0.0001

Technical conditions and measures at process level (source) to prevent release

Common practices vary across sites thus conservative process release estimates used.

Technical onsite 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 onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency >= (%):	81.4
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):	0

Organisation measures to prevent/limit release from site

Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Estimated substance removal from wastewater via domestic sewage treatment (%):	94.7
--	------

Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%):	94.7
Maximum allowable site tonnage (Msafe) based on release following total wastewater treatment removal (kg/d):	1.8e5
Assumed domestic 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 of the substance is generated.	
Conditions and measures related to external recovery of waste	
This substance is consumed during use and no waste of the substance is generated.	
Section 3 Exposure Estimation	
3.1 Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	
3.2 Environment	
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.	
Section 4 Guidance to check compliance with the Exposure Scenario	
4.1 Health	
Available hazard data does not enable the derivation of a DNEL for dermal irritant effects. Risk management measures are based on qualitative risk characterization. Available hazard data does 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.	
4.2 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 (http://cefic.org/en/reach-for-industries-libraries.html).	

3. Distribution of substance Industrial

Section 1 Exposure Scenario	
Kerosenes	
Title	Distribution of substance
Use Descriptor	
Sector(s) of use	3
Process category(ies)	1, 2, 3, 4, 8a, 8b, 9, 15
Environmental release category(ies)	1, 2, 3, 4, 5, 6a, 6b, 6c, 6d, 7
Specific Environmental Release Category	ESVOC SpERC 1.1b.v1
Processes, tasks, activities covered	
Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading distribution and associated laboratory activities.	
Section 2 Operational conditions and risk management measures	
2.1 Control of worker exposure	
Product characteristics	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently).
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affecting 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 / Product Category	
General measures (skin irritants)	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. 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
Laboratory activities	No other specific measures identified
Bulk transfers	No other specific measures identified
Drum and small package filling	No other specific measures identified
Equipment cleaning and maintenance	No other specific measures identified
Bulk product storage	No other specific measures identified
Kerosene exhibits irritation to the skin and is classified R38 (Irritating to skin) accordingly. The available data for this adverse effect do not provide quantitative dose-response information, but there exists toxicity data appropriate to allow a qualitative risk characterisation; please see section 2 of the SDS for the necessary RMMs.	
2.2 Control of environmental exposure	
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
Frequency and duration of use	
Continuous release.	
Emission days (days/year)	300
Environmental factors not influenced by risk management	
Local freshwater dilution factor	10
Local marine water dilution factor	100
Other operational conditions of use 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 onsite 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 onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency >= (%):	0
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):	0
Organisation measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.	
Estimated substance removal from wastewater via domestic sewage treatment (%):	94.7
Total efficiency of removal from wastewater after onsite and offsite (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 domestic 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	
During manufacturing no waste of the substance is generated.	
Section 3 Exposure Estimation	
3.1 Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	
3.2 Environment	
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.	
Section 4 Guidance to check compliance with the Exposure Scenario	
4.1 Health	
Available hazard data does not enable the derivation of a DNEL for dermal irritant effects. Risk management measures are based on qualitative risk characterization. Available hazard data does 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.	
4.2 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 (<http://cefic.org/en/reach-for-industries-libraries.html>).

4. Formulation & (Re)packing of substance - Industrial

Section 1 Exposure Scenario	
Kerosenes	
Title	Formulation & (re)packing of substances and mixtures
Use Descriptor	
Sector(s) of use	3, 10
Process category(ies)	1, 2, 3, 4, 5, 8a, 8b, 9, 14, 15
Environmental release category(ies)	2
Specific Environmental Release Category	ESVOC SpERC 2.2.v1
Processes, tasks, activities covered	
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 Operational conditions and risk management measures	
2.1 Control of worker exposure	
Product characteristics	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently).
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affecting 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 / Product Category	
Specific Risk Management Measures & Operating Conditions	
General measures (skin irritants)	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. 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
Laboratory activities	No other specific measures identified
Bulk transfers	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
Production or preparation of articles by tableting, compression, extrusion or pelletisation	No other specific measures identified
Drum and small package filling	No other specific measures identified
Equipment cleaning and maintenance	No other specific measures identified
Bulk product storage	No other specific measures identified
Kerosene exhibits irritation to the skin and is classified R38 (Irritating to skin) accordingly. The available data for this adverse effect do not provide quantitative dose-response information, but there exists toxicity data appropriate to allow a qualitative risk characterisation; please see section 2 of the SDS for the necessary RMMs.	
2.2 Control of environmental exposure	
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
Frequency and duration of use	
Continuous release.	
Emission days (days/year)	300
Environmental factors not influenced by risk management	
Local freshwater dilution factor	10
Local marine water dilution factor	100
Other operational conditions of use 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 onsite 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 onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency >= (%):	86.0
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):	0
Organisation measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.	
Estimated substance removal from wastewater via domestic sewage treatment (%):	94.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%):	94.7
Maximum allowable site tonnage (Msafe) based on release following total wastewater treatment removal (kg/d):	2.6e5
Assumed domestic 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.	
Section 3 Exposure Estimation	
3.1 Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	
3.2 Environment	
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.	
Section 4 Guidance to check compliance with the Exposure Scenario	
4.1 Health	
Available hazard data does not enable the derivation of a DNEL for dermal irritant effects. Risk management measures are based on qualitative risk characterization. Available hazard data does 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.	
4.2 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 (http://cefic.org/en/reach-for-industries-libraries.html).	

5. Use of substance in Metal working fluids / rolling oils - Industrial

Section 1 Exposure Scenario	
Kerosenes	
Title	Metal working fluids / rolling oils
Use Descriptor	
Sector(s) of use	3
Process category(ies)	1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 17

Environmental release category(ies)	4
Specific Environmental Release Category	ESVOC SpERC 4.7a.v1
Processes, tasks, activities covered	
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 Operational conditions and risk management measures	
2.1 Control of worker exposure	
Product characteristics	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently).
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affecting 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 / Product Category	
Specific Risk Management Measures & Operating Conditions	
General measures (skin irritants)	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. 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 Roller, spreader, flow application	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
Kerosene exhibits irritation to the skin and is classified R38 (Irritating to skin) accordingly. The available data for this adverse effect do not provide quantitative dose-response information, but there exists toxicity data appropriate to allow a qualitative risk characterisation; please see section 2 of the SDS for the necessary RMMs.	
2.2 Control of environmental exposure	
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
Frequency and duration of use	
Continuous release.	
Emission days (days/year)	20
Environmental factors not influenced by risk management	
Local freshwater dilution factor	10
Local marine water dilution factor	100
Other operational conditions of use 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 onsite 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 onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency >= (%):	0
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):	0
Organisation measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.	
Estimated substance removal from wastewater via domestic sewage treatment (%):	94.7
Total efficiency of removal from wastewater after onsite and offsite (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 domestic 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.	
Section 3 Exposure Estimation	
3.1 Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	
3.2 Environment	
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.	
Section 4 Guidance to check compliance with the Exposure Scenario	
4.1 Health	
Available hazard data does not enable the derivation of a DNEL for dermal irritant effects. Risk management measures are based on qualitative risk characterization. Available hazard data does 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.	
4.2 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 (http://cefic.org/en/reach-for-industries-libraries.html).	

6. Use of substance in Metal working fluids / rolling oils - Professional

Section 1 Exposure Scenario	
Kerosenes	
Title	Metal working fluids / rolling oils
Use Descriptor	
Sector(s) of use	3
Process category(ies)	1, 2, 3, 5, 8a, 8b, 9, 10, 11, 13, 17
Environmental release category(ies)	8a, 8d
Specific Environmental Release Category	ESVOC SpERC 8.7c.v1
Processes, tasks, activities covered	
Covers the use in formulated MWFs including transfer operations, open and contained cutting/machining activities, automated and manual application of corrosion protections, draining and working on contaminated/reject articles, and disposal of waste oils.	
Section 2 Operational conditions and risk management measures	
2.1 Control of worker exposure	
Product characteristics	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently).

Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affecting 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 / Product Category	
Specific Risk Management Measures & Operating Conditions	
General measures (skin irritants)	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. 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
Filling / preparation of equipment from drums or containers Non-dedicated facility	No other specific measures identified
Process sampling	No other specific measures identified
Metal machining operations	No other specific measures identified
Manual Roller, spreader, flow application	No other specific measures identified
Spraying	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
Treatment by dipping and pouring	No other specific measures identified
Storage	No other specific measures identified
Kerosene exhibits irritation to the skin and is classified R38 (Irritating to skin) accordingly. The available data for this adverse effect do not provide quantitative dose-response information, but there exists toxicity data appropriate to allow a qualitative risk characterisation; please see section 2 of the SDS for the necessary RMMs.	
2.2 Control of environmental exposure	
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	5.0e-4
Frequency and duration of use	
Continuous release.	
Emission days (days/year)	365
Environmental factors not influenced by risk management	
Local freshwater dilution factor	10
Local marine water dilution factor	100
Other operational conditions of use 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	
Technical conditions and measures at process level (source) to prevent release. Common practices vary across sites thus conservative process release estimates used.	
Technical onsite 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 onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency >= (%):	0
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):	0
Organisation measures to prevent/limit release from site	

Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.	
Estimated substance removal from wastewater via domestic sewage treatment (%):	94.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%):	94.7
Maximum allowable site tonnage (Msafe) based on release following total wastewater treatment removal (kg/d):	90
Assumed domestic 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.	
Section 3 Exposure Estimation	
3.1 Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	
3.2 Environment	
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.	
Section 4 Guidance to check compliance with the Exposure Scenario	
4.1 Health	
Available hazard data does not enable the derivation of a DNEL for dermal irritant effects. Risk management measures are based on qualitative risk characterization. Available hazard data does 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.	
4.2 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 (http://cefic.org/en/reach-for-industries-libraries.html).	

7. Use of substance as Release agents or binders - Industrial

Section 1 Exposure Scenario	
Kerosenes	
Title	Use as binders and release agents
Use Descriptor	
Sector(s) of use	3
Process category(ies)	1, 2, 3, 4, 6, 7, 8b, 10, 13, 14
Environmental release category(ies)	4
Specific Environmental Release Category	ESVOC SpERC 4.10a.v1
Processes, tasks, activities covered	
Covers the use as binders and release agents including material transfers, mixing, application (including spraying and brushing), mold forming and casting, and handling of waste.	
Section 2 Operational conditions and risk management measures	
2.1 Control of worker exposure	
Product characteristics	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently).
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affecting 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 / Product Category	
Specific Risk Management Measures & Operating Conditions	
General measures (skin irritants)	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. 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 Rolling, Brushing	No other specific measures identified
Dipping, immersion and pouring	No other specific measures identified
Bulk product storage	No other specific measures identified
Kerosene exhibits irritation to the skin and is classified R38 (Irritating to skin) accordingly. The available data for this adverse effect do not provide quantitative dose-response information, but there exists toxicity data appropriate to allow a qualitative risk characterisation; please see section 2 of the SDS for the necessary RMMs.	
2.2 Control of environmental exposure	
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
Frequency and duration of use	
Continuous release.	
Emission days (days/year)	20
Environmental factors not influenced by risk management	
Local freshwater dilution factor	10
Local marine water dilution factor	100
Other operational conditions of use 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 onsite 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 onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency >= (%):	0
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):	0
Organisation measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.	
Estimated substance removal from wastewater via domestic sewage treatment (%):	94.7
Total efficiency of removal from wastewater after onsite and offsite (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 domestic 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.	
Section 3 Exposure Estimation	
3.1 Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

3.2 Environment
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.
Section 4 Guidance to check compliance with the Exposure Scenario
4.1 Health
Available hazard data does not enable the derivation of a DNEL for dermal irritant effects. Risk management measures are based on qualitative risk characterization. Available hazard data does 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.
4.2 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 (http://cefic.org/en/reach-for-industries-libraries.html).

8. Use of substance as Release agents or binders - Professional

Section 1 Exposure Scenario	
Kerosenes	
Title	Use as binders and release agents
Use Descriptor	
Sector(s) of use	22
Process category(ies)	1, 2, 3, 4, 6, 8a, 8b, 10, 11, 14
Environmental release category(ies)	8a, 8d
Specific Environmental Release Category	ESVOC SpERC 8.10b.v1
Processes, tasks, activities covered	
Covers the use as binders and release agents including material transfers, mixing, application by spraying, brushing, and handling of waste.	
Section 2 Operational conditions and risk management measures	
2.1 Control of worker exposure	
Product characteristics	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently).
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affecting 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 / Product Category	
General measures (skin irritants)	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. 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
Rolling, Brushing	No other specific measures identified
Dipping, immersion and pouring	No other specific measures identified

Bulk product storage	No other specific measures identified
Kerosene exhibits irritation to the skin and is classified R38 (Irritating to skin) accordingly. The available data for this adverse effect do not provide quantitative dose-response information, but there exists toxicity data appropriate to allow a qualitative risk characterisation; please see section 2 of the SDS for the necessary RMMs.	
2.2 Control of environmental exposure	
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
Frequency and duration of use	
Continuous release.	
Emission days (days/year)	365
Environmental factors not influenced by risk management	
Local freshwater dilution factor	10
Local marine water dilution factor	100
Other operational conditions of use 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 onsite 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 onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency >= (%):	0
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):	0
Organisation measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.	
Estimated substance removal from wastewater via domestic sewage treatment (%):	94.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%):	94.7
Maximum allowable site tonnage (Msafe) based on release following total wastewater treatment removal (kg/d):	130
Assumed domestic 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.	
Section 3 Exposure Estimation	
3.1 Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	
3.2 Environment	
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.	
Section 4 Guidance to check compliance with the Exposure Scenario	
4.1 Health	
Available hazard data does not enable the derivation of a DNEL for carcinogenic effects. Risk management measures are based on qualitative risk characterization. Available hazard data does 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.	
4.2 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 (http://cefic.org/en/reach-for-industries-libraries.html).	

9. Use of substance as a Fuel - Industrial

Section 1 Exposure Scenario	
Kerosenes	
Title	Use as a fuel
Use Descriptor	
Sector(s) of use	3
Process category(ies)	1, 2, 3, 8a, 8b, 16
Environmental release category(ies)	7
Specific Environmental Release Category	ESVOC SpERC 7.12a.v1
Processes, tasks, activities covered	
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 Operational conditions and risk management measures	
2.1 Control of worker exposure	
Product characteristics	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently).
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affecting 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 / Product Category	
Specific Risk Management Measures & Operating Conditions	
General measures (skin irritants)	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. 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 systems)	No other specific measures identified
Bulk transfers	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
Kerosene exhibits irritation to the skin and is classified R38 (Irritating to skin) accordingly. The available data for this adverse effect do not provide quantitative dose-response information, but there exists toxicity data appropriate to allow a qualitative risk characterisation; please see section 2 of the SDS for the necessary RMMs.	
2.2 Control of environmental exposure	
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
Frequency and duration of use	
Continuous release.	
Emission days (days/year)	300
Environmental factors not influenced by risk management	
Local freshwater dilution factor	10
Local marine water dilution factor	100
Other operational conditions of use 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 onsite 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 onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency >= (%):	84.6
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):	0
Organisation measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.	
Estimated substance removal from wastewater via domestic sewage treatment (%):	94.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%):	94.7
Maximum allowable site tonnage (Msafe) based on release following total wastewater treatment removal (kg/d):	5.3e6
Assumed domestic 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 of the substance is generated.	
Section 3 Exposure Estimation	
3.1 Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	
3.2 Environment	
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.	
Section 4 Guidance to check compliance with the Exposure Scenario	
4.1 Health	
Available hazard data does not enable the derivation of a DNEL for carcinogenic effects. Risk management measures are based on qualitative risk characterization. Available hazard data does 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.	
4.2 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 (http://cefic.org/en/reach-for-industries-libraries.html).	

10. Use of substance as a Fuel - Professional

Section 1 Exposure Scenario	
Kerosenes	
Title	Use as a fuel
Use Descriptor	
Sector(s) of use	22
Process category(ies)	1, 2, 3, 8a, 8b, 16
Environmental release category(ies)	9a, 9b
Specific Environmental Release Category	ESVOC SpERC 9.12b.v1
Processes, tasks, activities covered	
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 Operational conditions and risk management measures	
2.1 Control of worker exposure	
Product characteristics	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently).
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affecting 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 / Product Category	Specific Risk Management Measures & Operating Conditions
General measures (skin irritants)	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. 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 systems)	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
Kerosene exhibits irritation to the skin and is classified R38 (Irritating to skin) accordingly. The available data for this adverse effect do not provide quantitative dose-response information, but there exists toxicity data appropriate to allow a qualitative risk characterisation; please see section 2 of the SDS for the necessary RMMs.	
2.2 Control of environmental exposure	
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
Frequency and duration of use	
Continuous release.	
Emission days (days/year)	365
Environmental factors not influenced by risk management	
Local freshwater dilution factor	10
Local marine water dilution factor	100
Other operational conditions of use 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 onsite 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 onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency >= (%):	0
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):	0
Organisation measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.	
Estimated substance removal from wastewater via domestic sewage treatment (%):	94.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%):	94.7
Maximum allowable site tonnage (Msafe) based on release following total wastewater treatment removal (kg/d):	6.9e5
Assumed domestic sewage treatment plant flow (m³/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 of the substance is generated.	
Section 3 Exposure Estimation	
3.1 Health	

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
3.2 Environment
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.
Section 4 Guidance to check compliance with the Exposure Scenario
4.1 Health
Available hazard data does not enable the derivation of a DNEL for dermal irritant effects. Risk management measures are based on qualitative risk characterization. Available hazard data does 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.
4.2 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 (http://cefic.org/en/reach-for-industries-libraries.html).

11. Use of substance as a Fuel - Consumer

Section 1 Exposure Scenario	
Kerosenes	
Title	Use as a fuel
Use Descriptor	
Sector(s) of use	21
Product category(ies)	13
Environmental release category(ies)	9a, 9b
Specific Environmental Release Category	ESVOC SpERC 9.12c.v1
Processes, tasks, activities covered	
Covers consumer uses in liquid fuels.	
Section 2 Operational conditions and risk management measures	
2.1 Control of consumer exposure	
Product characteristics	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently).
Amounts used	For each use event, covers use amounts up to (g): 50000 . Covers skin contact area up to (cm ²): 420.
Frequency and duration of use	Covers use up to (times/day of use): 0.143 Covers exposure up to (hours/event): 2
Other operational conditions affecting exposure	Covers use at ambient temperatures. Covers use in room size of (m ³): 20. Covers use under typical household ventilation.
Contributing Scenarios / Product Category	
Specific Risk Management Measures & Operating Conditions	
Liquid: Automotive Refuelling	Covers concentrations up to (%): 100%. Covers use up to (days/year): 52. Covers use up to (times/day of use): 1. Covers skin contact area up to (cm ²): 210.00. For each use event, covers use amounts up to (g): 50000. Covers outdoor use Covers use in room size of (m ³): 100. Covers exposure up to (hours/event): 0.05. No specific risk management measure identified beyond those operational conditions stated
Liquid: home space heater fuel	Covers concentrations up to (%): 100%. Covers use up to (days/year): 365. Covers use up to (times/day of use): 1. Covers skin contact area up to (cm ²): 210.00. For each use event, covers use amounts up to (g): 1500. Covers use under typical household ventilation Covers use in room size of (m ³): 20. Covers exposure up to (hours/event): 0.03. No specific risk management measure identified beyond those operational conditions stated
Liquid Garden Equipment - Use	Covers concentrations up to (%): 100%. Covers use up to

	(days/year): 26. Covers use up to (times/day of use): 1. For each use event, covers use amounts up to (g): 1000. Covers outdoor use Covers use in room size of (m ³): 100. Covers exposure up to (hours/event): 2.00. No specific risk management measure identified beyond those operational conditions stated
Liquid: garden equipment - refuelling	Covers concentrations up to (%): 100%. Covers use up to (days/year): 26. Covers use up to (times/day of use): 1. Covers skin contact area up to (cm ²): 420.00. For each use event, covers use amounts up to (g): 1000. Covers use in a one car garage (34 m ³) under typical ventilation. Covers use in room size of (m ³): 34. Covers exposure up to (hours/event): 0.03. No specific risk management measure identified beyond those operational conditions stated
Kerosene exhibits irritation to the skin and is classified R38 (Irritating to skin) accordingly. The available data for this adverse effect do not provide quantitative dose-response information, but there exists toxicity data appropriate to allow a qualitative risk characterisation; please see section 2 of the SDS for the necessary RMMs.	
2.2 Control of environmental exposure	
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
Frequency and duration of use	
Continuous release.	
Emission days (days/year)	365
Environmental factors not influenced by risk management	
Local freshwater dilution factor	10
Local marine water dilution factor	100
Other operational conditions of use 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
Conditions and measures related to municipal sewage treatment plant	
Risk from environmental exposure is driven by freshwater	
Estimated substance removal from wastewater via domestic sewage treatment (%):	94.7
Maximum allowable site tonnage (M _{safe}) based on release following total wastewater treatment removal (kg/d):	3.1e4
Assumed domestic 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 of the substance is generated.	
Section 3 Exposure Estimation	
3.1 Health	
The ECETOC TRA tool has been used to estimate consumer exposures, consistent with the content of ECETOC report #107 and the Chapter R15 of the IR&CSA TGD. Where exposure determinants differ to these sources, then they are indicated.	
3.2 Environment	
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.	
Section 4 Guidance to check compliance with the Exposure Scenario	
4.1 Health	
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.	
4.2 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 (http://cefic.org/en/reach-for-industries-libraries.html).	