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

1.1. Product identifier

Product form	:	Substance (UVCB)
Trade name	:	Eni Lamix 30
Chemical name	:	Hydrocarbons, C11-C14, n-alkanes, iso-alkanes, cyclics < 2% aromatics
IUPAC name	:	Hydrocarbons, C11-C14, n-alkanes, iso-alkanes, cyclics < 2% aromatics
EC Index-No.	:	N/A
EC-No.	:	926-141-6
CAS-No.	:	N/D
REACH registration No	:	01-2119456620-43
Product code	:	7073
Type of product	:	Mixture of hydrocarbons
Formula	:	0118-2015
Product group	:	Trade product

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

1.2.1. Relevant identified uses

Main use category	:	Industrial use,Professional use
Industrial/Professional use spec	:	Use resulting in inclusion into or onto a matrix Used in closed systems Wide dispersive use
Use of the substance/mixture	:	Drilling mud (re-)formulation
Use of the substance/mixture	:	Additive for lubricants Additive for drilling fluid Solvent
Function or use category	:	Construction materials additives, Hydraulic fluids and additives, Lubricants and additives, Viscosity adjusters, Solvents

Title	Use descriptors
Manufacture of substance (ES Ref.: 01)	SU3, SU8, SU9, PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC15, ERC1, ERC4, ESVOC SPERC 1.1.v1, (ENV), (ERC)
Distribution of substance (ES Ref.: 02)	SU3, PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15, ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC6d, ERC7, ESVOC SPERC 1.1b.v1
Formulation & (re)packing of substances and mixtures (ES Ref.: 03)	SU3, SU10, PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15, ERC2, ESVOC SPERC 2.2.v1
Uses in mining operations (ES Ref.: 04)	SU3, PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, ERC4, ESVOC SPERC 4.23.v1
Use as Functional Fluids (ES Ref.: 05)	SU3, PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, ERC7, ESVOC SPERC 7.13a.v1
Use in laboratories (ES Ref.: 06)	SU3, PROC15, ERC4, ESVOC SPERC 4.24.v1
Lubricants (ES Ref.: 07)	SU3, PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC17, PROC18, ERC4, ERC7, ESVOC SPERC 4.6a.v1
Use in Oil and Gas field drilling and production operations (ES Ref.: 08)	SU3, PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, ERC4, ESVOC SPERC 4.5a.v1
Use as Functional Fluids (ES Ref.: 09)	SU22, PROC1, PROC2, PROC3, PROC8a, PROC9, PROC20, ERC9a, ERC9b, ESVOC SPERC 9.13b.v1
Use in laboratories (ES Ref.: 10)	SU22, PROC15, ERC8a, ERC9a, ESVOC SPERC 8.17.v1
Lubricants (ES Ref.: 11)	SU22, PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC17, PROC18, PROC20, ERC8a, ERC8d, ERC9a, ERC9b, ESVOC SPERC 8.6c.v1
Use in Oil and Gas field drilling and production operations - Professional (ES Ref.: 12)	SU22, PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, ERC8d, ERC9b, ESVOC SPERC 8.5b.v1

Full text of use descriptors: see section 16

1.2.2. Uses advised against

Recommended use are listed above; other uses are not recommended unless an assessment has provided that risks are controlled.

1.3. Details of the supplier of the safety data sheet

ENI S.p.A.
P.le E. Mattei 1 - 00144 Rome Italy
Phone: (+39) 06 59821
www.eni.com

Contact:
Refining & Marketing

Competent person responsible for the Safety Data Sheet (Reg. EC nr. 1907/2006): SDSInfo@eni.com

1.4. Emergency telephone number

Emergency number : CNIT +39 0382 24444 (24h) (IT + EN)

Poison centre (UK):
National Poisons Information Service Edinburgh (24h)
(+44) 844 892 0111
0870 600 6266 (UK only)
(Source: UN-WHO)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [EU-GHS / CLP]

Aspiration hazard, Category 1 H304

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

Aspiration into lungs can cause a chemical pneumonia. Prolonged and repeated skin contact may cause reddening, irritation and dermatitis, due to a defatting effect. For specific information about the toxicological/ecotoxicological properties and classification of this product, see Sect. 11 and/or Sect. 12.

2.2. Label elements

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

Hazard pictograms (CLP) :

GHS08

CLP Signal word : Danger

Hazard statements (CLP) : H304 - May be fatal if swallowed and enters airways.

Precautionary statements (CLP) : P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P331 - Do NOT induce vomiting.
P405 - Store locked up.
P501 - Dispose of contents/container to according to national or local regulations.

EUH-statements : EUH066 - Repeated exposure may cause skin dryness or cracking.

2.3. Other hazards (not relevant for classification)

Other hazards not contributing to the classification : This product is combustible, but not classified as Flammable. The creation of flammable vapour mixtures takes place at temperatures which are higher than normal ambient levels. The product may charge electrostatically: use earthing leads when transferring from one container to another. The product is heavier than air and in the event of a leak, vapour may accumulate in confined spaces and low lying areas where it may easily be accidentally ignited. If the product is handled or used at high temperature, contact with hot product or vapours may cause burns. Any substance, in case of accidents involving pressurized circuits and the like, may be accidentally injected under the skin, even without external damage. In such a case, the victim should be brought to an hospital as soon as possible, to get specialized medical treatment. Do not wait for symptoms to develop.

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type : UVCB

Name	Product identifier	%
Hydrocarbons, C11-C14, n-alkanes, iso-alkanes, cyclics < 2% aromatics	(CAS-No.) N/D (EC-No.) 926-141-6 (EC Index-No.) N/A (REACH-no) 01-2119456620-43	100

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : In case of spontaneous vomiting, transport the victim to a hospital, to verify the possibility that the product has been aspired into the lungs.

First-aid measures after inhalation : Inhalation is unlikely because of the low vapour pressure of the substance at ambient temperature. Exposure to vapours may however occur when the substance is handled at high temperatures with poor ventilation. If casualty is unconscious and not breathing: ensure that there is no obstruction to breathing and give artificial respiration by trained personnel. ensure that there is no obstruction to breathing and give artificial respiration by trained personnel. If necessary, give external cardiac massage and obtain medical advice. If the casualty is breathing: Place in the recovery position. Remove to fresh air, keep the casualty warm and at rest. Administer oxygen if necessary.

First-aid measures after skin contact : Remove contaminated clothing, contaminated footwear and dispose of safely. Wash skin with plenty of water. Seek medical attention if skin irritation, swelling or redness develops and persists. For minor thermal burns, cool the burn. Hold the burned area under cold running water for at least five minutes, or until the pain subsides. Body hypothermia must be avoided. Do not put ice on the burn. Do not use salves or ointments, unless directed by doctor. When using high-pressure equipment, injection of product can occur. Send the casualty immediately to hospital. Do not wait for symptoms to develop.

First-aid measures after eye contact : Remove contact lenses, if present and easy to do so. Continue rinsing. If irritation, blurred vision or swelling occurs and persists, obtain medical advice from a specialist. In case of contact with hot product, cool affected part with plenty of cold water, and cover with gauze or clean cloth. Call a doctor or bring to an hospital. Do not use salves or ointments, unless directed by doctor.

First-aid measures after ingestion : Do not induce vomiting as there is high risk of aspiration. Do not give anything by mouth to an unconscious person. In case of ingestion, always assume that aspiration has occurred. Send the casualty immediately to hospital. Do not wait for symptoms to develop. In case of spontaneous vomiting, keep head low, to avoid the risk of aspiration into the lungs.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms / injuries (general indications) : For all low-viscosity petroleum products (less than 20,5 mm2/s at 40 °C), there is the risk of aspiration into the lungs. This may occur directly after ingestion, or subsequently in case of vomiting (spontaneous or induced). In this case there is the possibility of an inflamation of the lung tissues (chemical pneumonia). This is a serious condition requiring medical treatment.

Symptoms/effects after inhalation : Inhalation of vapours may cause headache, nausea, vomiting and an altered state of consciousness.

Symptoms/effects after skin contact : Prolonged and repeated skin contact may cause reddening, irritation and dermatitis, due to a defatting effect. Contact with hot product may cause severe thermal burns.

Symptoms/effects after eye contact : Contact with eyes may cause a light transient irritation. Contact with hot product or vapours may cause burns.

Symptoms/effects after ingestion : Swallowing the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis. May be fatal if swallowed and enters airways.

Symptoms/effects upon intravenous administration : No information available.

Chronic symptoms : None to be reported, according to the present classification criteria.

4.3. Indication of any immediate medical attention and special treatment needed

Obtain medical attention if casualty has an altered state of consciousness or if symptoms do not resolve. If necessary, drain stomach by gastric lavage ONLY under qualified medical supervision. In case of ingestion, always assume that aspiration has occurred. Send the casualty immediately to hospital.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Small-size fires: carbon dioxide, dry chemicals, foam, sand or earth. Large fires: foam or water fog (mist). These means should be used by trained personnel only. Other extinguishing gases (according to regulations).

Unsuitable extinguishing media : Do not use water jets. They could cause splattering, and spread the fire. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

5.2. Special hazards arising from the substance or mixture

Fire hazard : This product is combustible, but not classified as Flammable. The creation of flammable vapour mixtures takes place at temperatures which are higher than normal ambient levels.

Explosion hazard : In case of losses from pressurized circuits, the sprays may form mists. Take into account that in this case the lower explosion limit for mists is about 45 g/m³ of air.

Hazardous decomposition products in case of fire : Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, NOx (harmful/toxic gases). Oxygenated compounds (aldehydes, etc.). Solid particulate.

5.3. Advice for firefighters

Precautionary measures fire : Spilled product which is not burning should be covered with sand or foam.

Firefighting instructions : Shut off source of product, if possible. If possible, move containers and drums away from danger area. Use water sprays to cool containers and surfaces exposed to the flames. If the fire cannot be controlled, evacuate area.

Special protective equipment for firefighters : Personal protection equipment for firefighters (see also sect. 8). In case of a large fire or in confined or poorly ventilated spaces, wear full fire resistant protective clothing and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. EN 443. EN 469. EN 659.

Other information : In case of fire, do not discharge residual product, waste materials and runoff water: collect separately and use a proper treatment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Stop or contain leak at the source, if safe to do so. Eliminate all ignition sources if safe to do so (e.g. electricity, sparks, fires, flares). Avoid direct contact with released material. Keep upwind. Use only non-sparking tools.

6.1.1. For non-emergency personnel

Protective equipment : See Section 8.

Emergency procedures : Keep non-involved personnel away from the area of spillage. Alert emergency personnel. Except in case of small spillages, the feasibility of any actions should always be assessed and advised, if possible, by a trained, competent person in charge of managing the emergency.

6.1.2. For emergency responders

Protective equipment : Small spillages: normal antistatic working clothes are usually adequate. Large spillages: full body suit of chemically resistant and antistatic material. Work gloves (preferably gauntlets) providing adequate chemical resistance. Antistatic non-skid safety shoes or boots, chemical resistant. Gloves made of PVA are not water-resistant, and are not suitable for emergency use. If contact with hot product is possible or anticipated, gloves should be heat-resistant and thermally insulated. Work helmet. Goggles and /or face shield, if splashes or contact with eyes is possible or anticipated. Respiratory protection: a half or full-face respirator with filter(s) for organic vapours (AX), or a Self-contained Breathing Apparatus (SCBA) can be used according to the extent of spill and predictable amount of exposure. If the situation cannot be completely assessed, or if an oxygen deficiency is possible, only SCBA's should be used.

Emergency procedures : In case of large spillages, alert occupants in downwind areas. Notify local authorities according to relevant regulations.

6.2. Environmental precautions

Do not let the product accumulate in confined or underground spaces. Do not let the product flow into sewers or water courses, or in any way contaminate the environment. In case of contamination of environment compartments (soil, subsoil, surface or underground waters), remove contaminated soil when possible, and in any case treat all involved compartments in accordance with local regulations.

6.3. Methods and material for containment and cleaning up

For containment	:	Contain spilled liquid with sand, earth or other suitable absorbents (non-flammable). Recover free liquid and waste materials in suitable waterproof and oil-resistant containers. Clean contaminated area. Dispose of according to local regulations. Large spillages may be cautiously covered with foam, if available, to limit fire risk. When inside buildings or confined spaces, ensure adequate ventilation. Absorb spilled product with suitable non-combustible materials. Collect free product with suitable mechanical means. Transfer collected product and other contaminated materials to suitable containers for recovery or safe disposal. If in water: In case of small spillages in closed waters, contain product with floating barriers or other equipment. Collect spilled product by absorbing with specific floating absorbents. If possible, large spillages in open waters should be contained with floating barriers or other suitable mechanical means. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable mechanical means. Collect recovered product and other materials in suitable tanks or containers for recovery or safe disposal. Do not use solvents or dispersants, unless specifically advised by an expert, and, if required, approved by local authorities.
Other information	:	Recommended measures are based on the most likely spillage scenarios for this material; however, local conditions (wind, air temperature, wave/current direction and speed) may significantly influence the choice of appropriate actions.

6.4. Reference to other sections

For more information regarding protective equipment see section " Exposure control/personal protection". For further information refer to section 8: "Exposure controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	:	Ensure that all relevant regulations regarding handling and storage facilities of flammable products are followed. Do not use electrical equipment (mobile phones etc.) not approved for use, according to the risk rating of the area. Do not use compressed air for filling, discharging, or handling operations. Keep away from heat/sparks/open flames/hot surfaces. Do not smoke. Use and store only outdoors or in a well-ventilated area. During transfer and mixing operations, ensure that all equipment is correctly grounded. Avoid the build-up of electric charges. Ground/bond containers, tanks and transfer/receiving equipment. Before entering storage tanks and commencing any operation in a confined area (e.g. tunnels), carry out an adequate clean-up, and check the atmosphere for oxygen content and flammability. Emptied containers can contain combustible product residues. Do not cut, weld, drill, burn or incinerate empty containers or drums, unless they have been drained and cleaned.
Handling temperature	:	<= 55 °C
Hygiene measures	:	Ensure that proper housekeeping measures are in place. Use adequate personal protective equipment as needed. Keep away from food and beverages. Do not breathe fume/ mist/ vapours. Avoid contact with skin. Wash the hands thoroughly after handling. Do not ingest. Do not smoke. Contaminated materials should not be allowed to accumulate in the workplaces and should never be kept inside the pockets. Do not re-use clothes, if they are still contaminated. Prevent the risk of slipping.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	:	Electrical equipment and wiring must comply with the relevant safety regulations, according to the specific risk rating of the area. Before entering storage tanks and commencing any operation in a confined area (e.g. tunnels), carry out an adequate clean-up, and check the atmosphere for oxygen content and flammability.
Storage conditions	:	Store in dry, well ventilated area. Do not smoke. Keep away from open flames, hot surfaces and sources of ignition. Vapours are heavier than air and spread above ground. Beware of accumulation in pits and confined spaces.
Incompatible products	:	Keep away from: strong oxidants.
Storage temperature	:	<= 55 °C
Storage area	:	Storage area layout, tank design, equipment and operating procedures must comply with the relevant European, national or local legislation. Storage areas/installations should be designed with adequate bunds so as to prevent ground and water pollution in case of leaks or spills. Cleaning, inspection and maintenance of internal structure of storage tanks must be done only by properly equipped and qualified personnel as defined by national, local or company regulations.
Packages and containers:	:	If the product is supplied in containers: Keep containers tightly closed and properly labelled. Keep only in the original container or in a suitable container for this kind of product. Store away from direct sunlight or other heat sources. Light hydrocarbon vapours can build up in the headspace of containers. Open slowly in order to control possible pressure release. Empty containers may contain flammable product residues. Do not weld, solder, drill, cut or incinerate empty containers, unless they have been properly cleaned.

Packaging materials	:	For containers, or container linings use materials specifically approved for use with this product. Recommended materials for containers, or container linings use mild steel, stainless steel. Some synthetic materials may be unsuitable for containers or container linings depending on the material specification and intended use. Compatibility should be checked with the manufacturer.

7.3. Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Hydrocarbons, C11-C14, n-alkanes, iso-alkanes, cyclics < 2% aromatics (N/D)		
Germany	TRGS 900 Occupational exposure limit value (mg/m³)	350 mg/m³
Germany	TRGS 900 Occupational exposure limit value (ppm)	50 ppm
Germany	TRGS 900 Limitation of exposure peaks (mg/m³)	700 mg/m³
Germany	TRGS 900 Limitation of exposure peaks (ppm)	100 ppm
Switzerland	MAK (mg/m³)	350 mg/m³
Switzerland	VLE (mg/m³)	700 mg/m³

Monitoring methods	
Monitoring methods	Monitoring procedures should be chosen according to the indications set by national authorities or labour contracts,Refer to relevant legislation and in any case to the good practice of industrial hygiene.

Hydrocarbons, C11-C14, n-alkanes, iso-alkanes, cyclics < 2% aromatics (N/D)	
DNEL/DMEL (additional information)	
Additional information	No-threshold effect and/or no dose-response information available
PNEC (additional information)	
Additional information	Not derived - Not classified as hazardous for environment

Note	:	The Derived No Effect Level (DNEL) is an estimated safe level of exposure that is derived from toxicity data in accord with specific guidance within the European REACH regulation. The DNEL may differ from an Occupational Exposure Limit (OEL) for the same chemical. OELs may be recommended by an individual company, a governmental regulatory body or an expert organization, such as the Scientific Committee for Occupational Exposure Limits (SCOEL) or the American Conference of Governmental Industrial Hygienists (ACGIH). OELs are considered to be safe exposure levels for a typical worker in an occupational setting for an 8-hour work shift, 40 hour work week, as a time weighted average (TWA) or a 15 minute short-term exposure limit (STEL). While also considered to be protective of health, OELs are derived by a process different from that of REACH.

8.2. Exposure controls

Appropriate engineering controls:

Before entering storage tanks and commencing any operation in a confined area (e.g. tunnels), carry out an adequate clean-up, and check the atmosphere for oxygen content and flammability.

Personal protective equipment (for industrial or professional use):

Face shield. Gloves. Protective clothing. Safety glasses. Safety shoes or boots. Dust/aerosol mask.

Hand protection:

When there is a risk of contact with the skin, use hydrocarbon-resistant, felt-lined gloves. Adequate materials: nitrile (NBR) or PVC with a protection index > 5 (permeation time > 240 mins). If contact with hot product is possible or anticipated, gloves should be heat-resistant and thermally insulated. Use gloves respecting all the conditions and within the limits set by the manufacturer. Replace gloves immediately in case of cuts, holes or other signs of damages or degradation. If necessary, refer to the EN 374 standard. Personal hygiene is a key element for an effective hand care. Gloves must be worn only with clean hands. After wearing gloves, hands must be carefully washed and dried.

Eye protection:

When there is a risk of contact with the eyes, use safety goggles or other means of protection (face shield). If necessary, refer to national standards or to the EN 166 standard.

Skin and body protection:

Long-sleeved overalls. If necessary, refer to the EN 340 and related standards, for definition of characteristics and performance according to the risk rating of the area. Antistatic non-skid safety shoes or boots, chemical resistant, if necessary heat resistant and insulated.

Respiratory protection:

Independently from other possible actions (technical modifications, operating procedures, and other means to limit the exposure of workers), personal protection equipment can be used according to necessity. Open or well ventilated spaces: if the product is handled without adequate containment means for the vapours: use full or half-face masks with filter for hydrocarbon vapours (AX). (EN 136/140/145). Closed or confined areas (e.g. tank interiors): the use of protection measures for airways (masks or self-contained breathing apparatus), must be assessed according to the specific activity, as well as level and duration of predicted exposure. (EN 136/140/145). Combination filter device (DIN EN 141)

Personal protective equipment symbol(s):

Thermal hazard protection:

If contact with hot product is possible or anticipated, gloves should be heat-resistant and thermally insulated.

Environmental exposure controls:

Do not discharge the product into the environment. Storage areas/installations should be designed with adequate bunds so as to prevent ground and water pollution in case of leaks or spills. Prevent discharge of undissolved substance to or recover from onsite wastewater. Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Consumer exposure controls:

Not applicable.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Appearance	:	Liquid, bright & clear.
Colour	:	Colourless.
Odour	:	Slight odour of petroleum.
Odour threshold	:	No data available
pH	:	Not applicable
Relative evaporation rate (butylacetate=1)	:	No data available
Melting point	:	< -24 °C (pour point) (ASTM D 97)
Freezing point	:	Not applicable
Boiling point	:	200 °C (ASTM D 86)
Flash point	:	> 80 °C (ASTM D 93)
Critical temperature	:	Not applicable (UVCB)
Auto-ignition temperature	:	> 220 °C
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	Not applicable
Vapour pressure	:	ca 0,02 kPa (20 °C, EN 13016)
Critical pressure	:	Not applicable (UVCB)
Relative vapour density at 20 °C	:	No data available
Relative density	:	No data available
Density	:	≤ 805 kg/m³ (ASTM D 4052)
Solubility	:	This product is not soluble in water. Water: Immiscible and insoluble Organic solvent:Completely soluble.
Log Pow	:	Not applicable (UVCB)
Log Kow	:	Not applicable (UVCB)
Viscosity, kinematic	:	1,5 - 2 mm²/s (40 °C - ASTM D 445)
Viscosity, dynamic	:	No data available
Explosive properties	:	None.
Oxidising properties	:	None.
Explosive limits	:	1,16 - 6 vol %

9.2. Other information

Additional information	:	No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

This substance does not offer any further hazard for reactivity, except what is reported in the following paragraphs.

10.2. Chemical stability

Stable product, according to its intrinsic properties.

10.3. Possibility of hazardous reactions

None (in normal conditions of storage and handling). Contact with strong oxidizers (peroxides, chromates, etc.) may cause a fire hazard. Sensitivity to heat, friction or shock cannot be assessed in advance.

10.4. Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Avoid the build-up of electrostatic charge. Do not smoke.

10.5. Incompatible materials

Strong oxidants.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Thermal decomposition may produce : Toxic fumes.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified (Conclusive but not sufficient for classification)

Acute toxicity (dermal) : Not classified (Conclusive but not sufficient for classification)

Acute toxicity (inhalation) : Not classified (Conclusive but not sufficient for classification)

Hydrocarbons, C11-C14, n-alkanes, iso-alkanes, cyclics < 2% aromatics (N/D)	
LD50 oral rat	5000 - 15000 mg/kg bodyweight (OECD 401; ExxonMobil, 1989)
LD50 dermal rat	≥ 2000 mg/kg bodyweight (OECD 402; CEPSA Quimica, 1989)
LD50 dermal rabbit	3160 - 5000 mg/kg bodyweight (OECD 402; ExxonMobil, 1984)
LC50 inhalation rat (mg/l)	4,9 - 9,3 mg/l/4h (OECD 403) (Read across: C11-C13, < 2% arom; ExxonMobil, 2005)

Skin corrosion/irritation : Not classified (Conclusive but not sufficient for classification)
pH: Not applicable

Additional information : Prolonged and repeated skin contact may cause reddening, irritation and dermatitis, due to a defatting effect.
(OECD 404) (Total Fluides Speciaux, 1998)

Serious eye damage/irritation : Not classified (Conclusive but not sufficient for classification)
pH: Not applicable

Additional information : (OECD 405) (Cepsa Química, 2000 - ExxonMobil, 1991)

Respiratory or skin sensitisation : Not classified (Conclusive but not sufficient for classification)

Additional information : (OECD 406) (ExxonMobil, 1991 - Shell, 1977)

Germ cell mutagenicity : Not classified (Conclusive but not sufficient for classification)

Additional information : (OECD 471 - Ames test) (Shell, 1999)
(OECD 475) (ExxonMobil, 1978)

Carcinogenicity : Not classified (Conclusive but not sufficient for classification)

Hydrocarbons, C11-C14, n-alkanes, iso-alkanes, cyclics < 2% aromatics (N/D)	
NOAEL (chronic, oral, animal/male, 2 years)	0,138 mg/l/6h/day (NOAEC - OECD 453) (Read across: Stoddard solvent; NTP, 2004)
NOAEL (chronic, oral, animal/female, 2 years)	> 2,2 mg/l/6h/day (NOAEC - OECD 453) (Read across: Stoddard solvent; NTP, 2004)

Reproductive toxicity : Not classified (Conclusive but not sufficient for classification)

Additional information : (OECD 421) (ExxonMobil, 1980)
(OECD 422) (Sasol, 1995)

STOT-single exposure : Not classified (Conclusive but not sufficient for classification)

STOT-repeated exposure : Not classified (Conclusive but not sufficient for classification)

Hydrocarbons, C11-C14, n-alkanes, iso-alkanes, cyclics < 2% aromatics (N/D)	
NOAEL (oral, rat, 90 days)	1000 - 5000 mg/kg bodyweight/day (OECD 408, Sasol, 1995 - ExxonMobil 1991)
NOAEC (inhalation, rat, dust/mist/fume, 90 days)	2200 - 10400 mg/l air (OECD 413, National Toxicology Program 2006 - Shell, 1980)

Aspiration hazard : May be fatal if swallowed and enters airways.

Additional information : For all low-viscosity petroleum products (less than 20,5 mm2/s at 40 °C), there is the risk of aspiration into the lungs. This may occur directly after ingestion, or subsequently in case of vomiting (spontaneous or induced).
Aspiration into lungs can cause a chemical pneumonia
In this case there is the possibility of an inflamation of the lung tissues (chemical pneumonia).
This is a serious condition requiring medical treatment.

Hydrocarbons, C11-C14, n-alkanes, iso-alkanes, cyclics < 2% aromatics (N/D)	
Viscosity, kinematic	1,5 - 2 mm²/s (40 °C - ASTM D 445)
Hydrocarbon	Yes

Potential adverse human health effects and symptoms : Aspiration into lungs can cause a chemical pneumonia. Prolonged and repeated skin contact may cause reddening, irritation and dermatitis, due to a defatting effect.

Other information : None.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment. An uncontrolled release to the environment may nevertheless produce a contamination of different environmental compartments (air, soil, underground, surface water bodies, aquifers). Handle according to general working hygiene practices to avoid pollution and release into the environment.

Ecology - air : This product has a low vapour pressure. A significant exposure may happen only if the product is used at high temperature, or in case of sprays and mists.

Ecology - water : Will not undergo hydrolysis.

Acute aquatic toxicity : Not classified (Conclusive but not sufficient for classification)

Chronic aquatic toxicity : Not classified (Conclusive but not sufficient for classification)

Hydrocarbons, C11-C14, n-alkanes, iso-alkanes, cyclics < 2% aromatics (N/D)	
LC50 fish 1	≥ 1000 mg/l LL50, 72 h (Oncorhynchus mykiss, OECD 203) (QSAR, CONCAWE 2010)
EC50 Daphnia 1	≥ 1000 mg/l EL50, 48 h (OECD 202) (SRC, 1994)
EC50 other aquatic organisms 1	≥ 10000 mg/l LL50, 48 h (Chaetogammarus marinus, OECD 202) (TNO, 1991)
ErC50 (algae)	≥ 1000 mg/l EL50, 72 h (Pseudokirchneriella subcapitata, OECD 201) (SRC, 1994)
NOEC (acute)	1000 mg/l NOELR, 72 h (Pseudokirchnerella subcapitata, OECD 201) (SRC, 1994)
NOEC (chronic)	0,173 mg/l NOELR, 28 d (Oncorhynchus mykiss) (QSAR, CONCAWE, 2010)

12.2. Persistence and degradability

Hydrocarbons, C11-C14, n-alkanes, iso-alkanes, cyclics < 2% aromatics (N/D)	
Persistence and degradability	The most significant constituents of the product should be considered as "readily biodegradable".
Biodegradation	77 - 83 % 28 d (OECD 301 F) (Shell, 1997)

12.3. Bioaccumulative potential

Hydrocarbons, C11-C14, n-alkanes, iso-alkanes, cyclics < 2% aromatics (N/D)	
Log Pow	Not applicable (UVCB)
Log Kow	Not applicable (UVCB)
Bioaccumulative potential	The test methods for this endpoint are not applicable to UVCB substances.

12.4. Mobility in soil

Hydrocarbons, C11-C14, n-alkanes, iso-alkanes, cyclics < 2% aromatics (N/D)	
Surface tension	24 - 29 mN/m (20°C)
Ecology - soil	The test methods for this endpoint are not applicable to UVCB substances.

12.5. Results of PBT and vPvB assessment

Hydrocarbons, C11-C14, n-alkanes, iso-alkanes, cyclics < 2% aromatics (N/D)	
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII	
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII	
Results of PBT-vPvB assessment	This substance does not meet the criteria for classification as PBT or vPvB.

12.6. Other adverse effects

Other adverse effects : None.

Additional information : This product has no specific properties for inhibition of bacterial activity. In any case, wastewater containing this product should be treated in plants that are suited for the specific purpose.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods	:	Do not dispose of the product, either new or used, by discharging into sewers, tunnels, lakes or water courses. Deliver to a qualified official collector. Dispose of empty containers and wastes safely.
Sewage disposal recommendations	:	Dispose of in a safe manner in accordance with local/national regulations. Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.
Product/Packaging disposal recommendations	:	European Waste Catalogue code(s) (Decision 2001/118/CE): 14 06 03* (other solvents and solvent mixtures), 16 03 05* (organic wastes containing dangerous substances). This EWC code is only a general indication, and takes into account the original composition of the product and its intended use. The user has the responsibility of choosing the right EWC code, considering the actual use of the product, alterations and contaminations.
Additional information	:	Empty containers may contain combustible product residues. Do not cut, weld, drill, burn or incinerate empty containers or drums, unless they have been cleaned, and declared safe.
Ecology - waste materials	:	The product as it is does not contain halogenated substances.
EURAL code (EWC)	:	14 06 03* - other solvents and solvent mixtures 16 03 05* - organic wastes containing dangerous substances

SECTION 14: Transport information

In accordance with ADN / ADR / IATA / IMDG / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.2. UN proper shipping name				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.4. Packing group				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.5. Environmental hazards				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
None.				

14.6. Special precautions for user

- Overland transport

Not regulated

- Transport by sea

Not regulated

- Air transport

Not regulated

- Inland waterway transport

Not regulated

- Rail transport

Not regulated

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

IBC code	:	Applicable.
IBC product name	:	White spirit, low (15-20%) aromatic
Ship type	:	Type 2
Pollution category	:	Y

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

3(b) Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10	Hydrocarbons, C11-C14, n-alkanes, iso-alkanes, cyclics < 2% aromatics

Hydrocarbons, C11-C14, n-alkanes, iso-alkanes, cyclics < 2% aromatics is not on the REACH Candidate List

Hydrocarbons, C11-C14, n-alkanes, iso-alkanes, cyclics < 2% aromatics is not on the REACH Annex XIV List

Other information, restriction and prohibition regulations	:	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). (et sequens). Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (et sequens). Directives 89/391/CEE, 89/654/CEE, 89/655/CEE, 89/656/CEE, 90/269/CEE, 90/270/CEE, 90/394/CEE, 90/679/CEE, 93/88/CEE, 95/63/CE, 97/42/CE, 98/24/CE, 99/38/CE, 99/92/CE, 2001/45/CE, 2003/10/CE, 2003/18/CE (Health and safety on the workplace). Directive 98/24/EC (protection of the health and safety of workers from the risks related to chemical agents at work). Directive 92/85/CE (measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding). Directive 2012/18/CE (Control of major-accident hazards involving dangerous substances). Directive 2004/42/CE (Limitation of emissions of Volatile Organic Compounds). Substances Depleting the Ozone layer (1005/2009) - Annex I Substances (ODP). Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC. Regulation EU (649/2012) - Export and Import of hazardous chemicals (PIC).

15.1.2. National regulations

National adoption of EU Directives concerning health and safety on the workplace.
National adoption of EU Directives concerning control of major-accident hazards involving dangerous substances (2012/18/CE).
Relevant national laws on prevention of water pollution.
Relevant national laws on protection of the health of pregnant workers (National adoption of Dir. 92/85/EEC).
National adoption of Directives 75/439/CEE - 87/101/CEE concerning disposal of used oils.

Germany

Reference to AwSV	:	Water hazard class (WGK) (D) 1, low hazard to water
WGK remark	:	Classification in compliance with Verwaltungsvorschriftwassergefährdender Stoffe (VwVwS) of 27 July 2005
VbF class (D)	:	A III - Liquids with a flashpoint above 55 °C up to 100 °C
Storage class (LGK) (D)	:	LGK 10 - Combustible liquids
Employment restrictions	:	Employment prohibitions for the protection of young people at work according to § 22 section 1(6) JArbSchG have to be observed.
12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV	:	Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)
Other information, restrictions and prohibition regulations	:	TRGS 900: Occupational Exposure Limits TRGS 800: Fire protection measures TRGS 555: Working instruction and information for workers TRGS 402: Identification and Assessment of the Risks from Activities involving Hazardous Substances: Inhalation Exposure TRGS 401: Risks resulting from skin contact - identification, assessment, measures TRGS 400: Hazard assessment for activities involving Hazardous Substances TRGS 500: Protective measures

Netherlands

Saneringsinspanningen	:	C - Minimize discharge
SZW-lijst van kankerverwekkende stoffen	:	The substance is not listed
SZW-lijst van mutagene stoffen	:	The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding	:	The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid	:	The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling	:	The substance is not listed

15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

SECTION 16: Other information

Indication of changes:
Modification according to Regulation (EC) 830/2015.

Abbreviations and acronyms:

	N/A = not applicable
	N/D = not available
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC50	Effective concentration for 50 percent of test population (median effective concentration)
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Lethal concentration for 50 percent of test population (median lethal concentration)
LD50	Lethal dose for 50 percent of test population (median lethal dose)
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals, Regulation (EC) No 1907/2006
RID	Regulation concerning the International Carriage of Dangerous Goods by Railways
SDS	Safety Data Sheet
STP	Sewage treatment plant
TLM	Median Tolerance Limit
vPvB	Very Persistent and Very Bioaccumulative

Data sources : Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (et sequens). Chemical safety assessment.

Training advice : Provide adequate training to professional operators for the use of PPEs, according to the information contained in this Safety Data Sheet.

Other information : Do not use the product for any purposes that have not been advised by the manufacturer.

Full text of H- and EUH-statements:

Asp. Tox. 1	Aspiration hazard, Category 1
H304	May be fatal if swallowed and enters airways.
EUH066	Repeated exposure may cause skin dryness or cracking.

Full text of use descriptors

(ENV)	Qualitative Assessment for Environment.
(ERC)	Release fractions defined by ERC
ERC1	Manufacture of substances
ERC2	Formulation of preparations
ERC3	Formulation in materials
ERC4	Industrial use of processing aids in processes and products, not becoming part of articles
ERC5	Use at industrial site leading to inclusion into/onto article
ERC6a	Use of intermediate
ERC6b	Use of reactive processing aid at industrial site (no inclusion into or onto article)
ERC6c	Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article)
ERC6d	Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)
ERC7	Use of functional fluid at industrial site
ERC8a	Wide dispersive indoor use of processing aids in open systems
ERC8d	Wide dispersive outdoor use of processing aids in open systems
ERC9a	Wide dispersive indoor use of substances in closed systems
ERC9b	Wide dispersive outdoor use of substances in closed systems
ESVOC SPERC 1.1.v1	Manufacture of substances: Industrial (SU8, SU9)
ESVOC SPERC 1.1b.v1	Distribution: Industrial (SU3)

ESVOC SPERC 2.2.v1	Formulation & (re)packing of substances and mixtures: Industrial (SU10)
ESVOC SPERC 4.23.v1	Uses in mining operations: Industrial (SU10)
ESVOC SPERC 4.24.v1	Laboratory chemicals: Industrial (SU3)
ESVOC SPERC 4.5a.v1	Use in Oil and Gas field drilling and production operations: Industrial (SU3)
ESVOC SPERC 4.6a.v1	Lubricants: Industrial (SU3)
ESVOC SPERC 7.13a.v1	Use as Functional Fluids: Industrial (SU3)
ESVOC SPERC 8.17.v1	Laboratory chemicals: Professional (SU22)
ESVOC SPERC 8.5b.v1	Use in Oil and Gas field drilling and production operations: Professional (SU22)
ESVOC SPERC 8.6c.v1	Lubricants: Professional (SU22) - high environmental release
ESVOC SPERC 9.13b.v1	Use as Functional Fluids: Professional (SU22)
PROC1	Use in closed process, no likelihood of exposure (no sampling)
PROC10	Roller application or brushing
PROC11	Non industrial spraying
PROC13	Treatment of articles by dipping and pouring
PROC14	Production of preparations or articles by tabletting, compression, extrusion, pelletisation
PROC15	Use as laboratory reagent
PROC17	Lubrication at high energy conditions and in partly open process
PROC18	Greasing at high energy conditions
PROC2	Use in closed, continuous process with occasional controlled exposure (with sampling)
PROC20	Heat and pressure transfer fluids in dispersive use but closed systems
PROC3	Use in closed batch process (synthesis or formulation) (with sampling)
PROC4	Use in batch and other process (synthesis) where opportunity for exposure arises
PROC5	Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
PROC7	Industrial spraying
PROC8a	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
PROC8b	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC9	Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
SU10	Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
SU22	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
SU3	Industrial uses: Uses of substances as such or in preparations* at industrial sites
SU8	Manufacture of bulk, large scale chemicals (including petroleum products)
SU9	Manufacture of fine chemicals

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

Annex to the safety data sheet

Table of contents of the Annex

1. 01: Manufacture of substance

1.1. Title section

Manufacture of substance

ES Ref.: 01	Company ES code: ENI
ES Type: Industrial	Date of issue: 16/11/2018
Version: 2.0	
Revision date: 17/05/2018	

Environment		
Gen01	General measures applicable to all activities	PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC15, ERC1, ERC4, ESVOC SPERC 1.1.v1

Processes, tasks, activities covered	Manufacture of the substance or use as a process chemical or extraction agent within closed or contained systems. Includes incidental exposures during recycling/ recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container). Industrial use
Assessment method	See Section 3.

1.2. Conditions of use affecting exposure

1.2.1. Control of environmental exposure: General measures applicable to all activities (PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC15, ERC1, ERC4, ESVOC SPERC 1.1.v1)

PROC1	Use in closed process, no likelihood of exposure (no sampling)
PROC2	Use in closed, continuous process with occasional controlled exposure (with sampling)
PROC3	Use in closed batch process (synthesis or formulation) (with sampling)
PROC4	Use in batch and other process (synthesis) where opportunity for exposure arises
PROC8a	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
PROC8b	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC15	Use as laboratory reagent
ERC1	Manufacture of substances
ERC4	Industrial use of processing aids in processes and products, not becoming part of articles
ESVOC SPERC 1.1.v1	Manufacture of substances: Industrial (SU8, SU9)

Conditions and measures related to personal protection, hygiene and health evaluation

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance. Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance. EXPOSURE SCENARIOS All exposure scenarios for this substance did not require a quantitative assessment of exposure, but only a qualitative one. Considering the specific hazard properties (H304), the implementation of the relevant risk reduction measures ensures that the possibility of the event connected to the hazard of aspiration is negligible, and risk can be assumed as controlled. Workers: - Do not ingest - Implement basic standard of occupation hygiene - Avoid splashes and spills - Avoid contact with contaminated objects and tools - Management/supervision actions to check that the Risk Reduction Measures in place are being used correctly and Operating Conditions are followed. - Training for staff on good practices - Good standard of personal hygiene	

1.3. Exposure estimation and reference to its source

Information for this exposure scenario
Substance is UVCB. Standard tests for this endpoint are intended for single substances and are not appropriate for the risk assessment of this complex substance. A PNEC cannot be derived, No exposure assessment presented for the environment

1.3.1. Environmental release and exposure General measures applicable to all activities (PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC15, ERC1, ERC4, ESVOC SPERC 1.1.v1)

Information for contributing exposure scenario
A quantitative risk assessment is not required for human health,Quantitative exposure and risk assessment not possible due to lack of emissions to aquatic environment,Qualitative approach used to conclude safe use

1.4. Guidance to Downstream User (DU) to evaluate whether he works inside the boundaries set by the ES

1.4.1. Environment

Guidance - 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).

1.4.2. Health

Guidance - Health	Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk Management Measures are based on qualitative risk characterisation. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. The risk phrase H304 (May be fatal if swallowed and enters airways) refers to the possibility of inhalation, a risk not quantifiable determined by the physico-chemical properties (i.e. viscosity) that may 'occur during ingestion and Even in the case of vomiting after ingestion. A DNEL can not be derived. Risks from physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures must be taken to control the risk of inhalation.

2. 02: Distribution of substance

2.1. Title section

Distribution of substance

ES Ref.: 02	Company ES code: ENI
ES Type: Industrial	Date of issue: 16/11/2018
Version: 2.0	
Revision date: 17/05/2018	

Environment		
Gen01	General measures applicable to all activities	PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15, ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC6d, ERC7, ESVOC SPERC 1.1b.v1

Processes, tasks, activities covered	Bulk loading (including marine vessel/barge, rail/road car and IBC loading) of substance within closed or contained systems, including incidental exposures during its sampling, storage, unloading, maintenance and associated laboratory activities. Industrial use
Assessment method	See Section 3.

2.2. Conditions of use affecting exposure

2.2.1. Control of environmental exposure: General measures applicable to all activities (PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15, ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC6d, ERC7, ESVOC SPERC 1.1b.v1)

PROC1	Use in closed process, no likelihood of exposure (no sampling)
PROC2	Use in closed, continuous process with occasional controlled exposure (with sampling)
PROC3	Use in closed batch process (synthesis or formulation) (with sampling)
PROC4	Use in batch and other process (synthesis) where opportunity for exposure arises
PROC8a	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
PROC8b	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC9	Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC15	Use as laboratory reagent
ERC1	Manufacture of substances
ERC2	Formulation of preparations
ERC3	Formulation into solid matrix
ERC4	Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
ERC5	Use at industrial site leading to inclusion into/onto article
ERC6a	Use of intermediate
ERC6b	Use of reactive processing aid at industrial site (no inclusion into or onto article)
ERC6c	Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article)
ERC6d	Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)
ERC7	Use of functional fluid at industrial site
ESVOC SPERC 1.1b.v1	Distribution: Industrial (SU3)

Conditions and measures related to personal protection, hygiene and health evaluation

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance. Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance. EXPOSURE SCENARIOS All exposure scenarios for this substance did not require a quantitative assessment of exposure, but only a qualitative one. Considering the specific hazard properties (H304), the implementation of the relevant risk reduction measures ensures that the possibility of the event connected to the hazard of aspiration is negligible, and risk can be assumed as controlled.	

Workers: - Do not ingest - Implement basic standard of occupation hygiene - Avoid splashes and spills - Avoid contact with contaminated objects and tools - Management/supervision actions to check that the Risk Reduction Measures in place are being used correctly and Operating Conditions are followed. - Training for staff on good practices - Good standard of personal hygiene	

2.3. Exposure estimation and reference to its source

Information for this exposure scenario
Substance is UVCB. Standard tests for this endpoint are intended for single substances and are not appropriate for the risk assessment of this complex substance. A PNEC cannot be derived, No exposure assessment presented for the environment

2.3.1. Environmental release and exposure General measures applicable to all activities (PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15, ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC6d, ERC7, ESVOC SPERC 1.1b.v1)

Information for contributing exposure scenario
A quantitative risk assessment is not required for human health,Quantitative exposure and risk assessment not possible due to lack of emissions to aquatic environment,Qualitative approach used to conclude safe use

2.4. Guidance to Downstream User (DU) to evaluate whether he works inside the boundaries set by the ES

2.4.1. Environment

Guidance - 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).

2.4.2. Health

Guidance - Health	Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk Management Measures are based on qualitative risk characterisation. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. The risk phrase H304 (May be fatal if swallowed and enters airways) refers to the possibility of inhalation, a risk not quantifiable determined by the physico-chemical properties (i.e. viscosity) that may 'occur during ingestion and Even in the case of vomiting after ingestion. A DNEL can not be derived. Risks from physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures must be taken to control the risk of inhalation.

3. 03: Formulation & (re)packing of substances and mixtures

3.1. Title section

Formulation & (re)packing of substances and mixtures

ES Ref.: 03 ES Type: Industrial Version: 2.0 Revision date: 17/05/2018	Company ES code: ENI Date of issue: 16/11/2018

Environment		
Gen01	General measures applicable to all activities	PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15, ERC2, 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, tabletting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities Industrial use
Assessment method	See Section 3.

3.2. Conditions of use affecting exposure

3.2.1. Control of environmental exposure: General measures applicable to all activities (PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15, ERC2, ESVOC SPERC 2.2.v1)

PROC1	Use in closed process, no likelihood of exposure (no sampling)
PROC2	Use in closed, continuous process with occasional controlled exposure (with sampling)
PROC3	Use in closed batch process (synthesis or formulation) (with sampling)
PROC4	Use in batch and other process (synthesis) where opportunity for exposure arises
PROC5	Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
PROC8a	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
PROC8b	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC9	Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC14	Production of preparations or articles by tabletting, compression, extrusion, pelletisation
PROC15	Use as laboratory reagent
ERC2	Formulation of preparations
ESVOC SPERC 2.2.v1	Formulation & (re)packing of substances and mixtures: Industrial (SU10)

Conditions and measures related to personal protection, hygiene and health evaluation

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance. Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance. EXPOSURE SCENARIOS All exposure scenarios for this substance did not require a quantitative assessment of exposure, but only a qualitative one. Considering the specific hazard properties (H304), the implementation of the relevant risk reduction measures ensures that the possibility of the event connected to the hazard of aspiration is negligible, and risk can be assumed as controlled. Workers: - Do not ingest - Implement basic standard of occupation hygiene - Avoid splashes and spills - Avoid contact with contaminated objects and tools - Management/supervision actions to check that the Risk Reduction Measures in place are being used correctly and Operating Conditions are followed.	

- Training for staff on good practices - Good standard of personal hygiene	

3.3. Exposure estimation and reference to its source

Information for this exposure scenario
Substance is UVCB. Standard tests for this endpoint are intended for single substances and are not appropriate for the risk assessment of this complex substance. A PNEC cannot be derived, No exposure assessment presented for the environment

3.3.1. Environmental release and exposure General measures applicable to all activities (PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15, ERC2, ESVOC SPERC 2.2.v1)

Information for contributing exposure scenario
A quantitative risk assessment is not required for human health,Quantitative exposure and risk assessment not possible due to lack of emissions to aquatic environment,Qualitative approach used to conclude safe use

3.4. Guidance to Downstream User (DU) to evaluate whether he works inside the boundaries set by the ES

3.4.1. Environment

Guidance - 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).

3.4.2. Health

Guidance - Health	Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk Management Measures are based on qualitative risk characterisation. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. The risk phrase H304 (May be fatal if swallowed and enters airways) refers to the possibility of inhalation, a risk not quantifiable determined by the physico-chemical properties (i.e. viscosity) that may 'occur during ingestion and Even in the case of vomiting after ingestion. A DNEL can not be derived. Risks from physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures must be taken to control the risk of inhalation.

4. 04: Uses in mining operations

4.1. Title section

Uses in mining operations

ES Ref.: 04 ES Type: Industrial Version: 2.0 Revision date: 17/05/2018	Company ES code: ENI Date of issue: 16/11/2018

Environment		
Gen01	General measures applicable to all activities	PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, ERC4, ESVOC SPERC 4.23.v1

Processes, tasks, activities covered	Covers the use of the substance in extraction processes at mining operations, including material transfers, winning and separation activities, and substance recovery and disposal. Industrial use
Assessment method	See Section 3.

4.2. Conditions of use affecting exposure

4.2.1. Control of environmental exposure: General measures applicable to all activities (PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, ERC4, ESVOC SPERC 4.23.v1)

PROC1	Use in closed process, no likelihood of exposure (no sampling)
PROC2	Use in closed, continuous process with occasional controlled exposure (with sampling)
PROC3	Use in closed batch process (synthesis or formulation) (with sampling)
PROC4	Use in batch and other process (synthesis) where opportunity for exposure arises
PROC5	Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
PROC8a	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
PROC8b	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC9	Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
ERC4	Industrial use of processing aids in processes and products, not becoming part of articles
ESVOC SPERC 4.23.v1	Uses in mining operations: Industrial (SU10)

Conditions and measures related to personal protection, hygiene and health evaluation

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance. Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance. EXPOSURE SCENARIOS All exposure scenarios for this substance did not require a quantitative assessment of exposure, but only a qualitative one. Considering the specific hazard properties (H304), the implementation of the relevant risk reduction measures ensures that the possibility of the event connected to the hazard of aspiration is negligible, and risk can be assumed as controlled. Workers: - Do not ingest - Implement basic standard of occupation hygiene - Avoid splashes and spills - Avoid contact with contaminated objects and tools - Management/supervision actions to check that the Risk Reduction Measures in place are being used correctly and Operating Conditions are followed. - Training for staff on good practices - Good standard of personal hygiene	

4.3. Exposure estimation and reference to its source

Information for this exposure scenario
Substance is UVCB. Standard tests for this endpoint are intended for single substances and are not appropriate for the risk assessment of this complex substance. A PNEC cannot be derived, No exposure assessment presented for the environment

4.3.1. Environmental release and exposure General measures applicable to all activities (PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, ERC4, ESVOC SPERC 4.23.v1)

Information for contributing exposure scenario
A quantitative risk assessment is not required for human health,Quantitative exposure and risk assessment not possible due to lack of emissions to aquatic environment,Qualitative approach used to conclude safe use

4.4. Guidance to Downstream User (DU) to evaluate whether he works inside the boundaries set by the ES

4.4.1. Environment

Guidance - 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).

4.4.2. Health

Guidance - Health	Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk Management Measures are based on qualitative risk characterisation. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. The risk phrase H304 (May be fatal if swallowed and enters airways) refers to the possibility of inhalation, a risk not quantifiable determined by the physico-chemical properties (i.e. viscosity) that may 'occur during ingestion and Even in the case of vomiting after ingestion. A DNEL can not be derived. Risks from physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures must be taken to control the risk of inhalation.

5. 05: Use as Functional Fluids

5.1. Title section

Use as Functional Fluids

ES Ref.: 05 ES Type: Industrial Version: 2.0 Revision date: 17/05/2018	Company ES code: ENI Date of issue: 16/11/2018

Environment		
Gen01	General measures applicable to all activities	PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, ERC7, ESVOC SPERC 7.13a.v1

Processes, tasks, activities covered	Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in closed industrial equipment including incidental exposures during maintenance and related material transfers Industrial use
Assessment method	See Section 3.

5.2. Conditions of use affecting exposure

5.2.1. Control of environmental exposure: General measures applicable to all activities (PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, ERC7, ESVOC SPERC 7.13a.v1)

PROC1	Use in closed process, no likelihood of exposure (no sampling)
PROC2	Use in closed, continuous process with occasional controlled exposure (with sampling)
PROC3	Use in closed batch process (synthesis or formulation) (with sampling)
PROC4	Use in batch and other process (synthesis) where opportunity for exposure arises
PROC8a	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
PROC8b	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC9	Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
ERC7	Use of functional fluid at industrial site
ESVOC SPERC 7.13a.v1	Use as Functional Fluids: Industrial (SU3)

Conditions and measures related to personal protection, hygiene and health evaluation

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance. Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance. EXPOSURE SCENARIOS All exposure scenarios for this substance did not require a quantitative assessment of exposure, but only a qualitative one. Considering the specific hazard properties (H304), the implementation of the relevant risk reduction measures ensures that the possibility of the event connected to the hazard of aspiration is negligible, and risk can be assumed as controlled. Workers: - Do not ingest - Implement basic standard of occupation hygiene - Avoid splashes and spills - Avoid contact with contaminated objects and tools - Management/supervision actions to check that the Risk Reduction Measures in place are being used correctly and Operating Conditions are followed. - Training for staff on good practices - Good standard of personal hygiene	

5.3. Exposure estimation and reference to its source

Information for this exposure scenario
Substance is UVCB. Standard tests for this endpoint are intended for single substances and are not appropriate for the risk assessment of this

complex substance. A PNEC cannot be derived, No exposure assessment presented for the environment

5.3.1. Environmental release and exposure General measures applicable to all activities (PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, ERC7, ESVOC SPERC 7.13a.v1)

Information for contributing exposure scenario
A quantitative risk assessment is not required for human health,Quantitative exposure and risk assessment not possible due to lack of emissions to aquatic environment,Qualitative approach used to conclude safe use

5.4. Guidance to Downstream User (DU) to evaluate whether he works inside the boundaries set by the ES

5.4.1. Environment

Guidance - 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).

5.4.2. Health

Guidance - Health	Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk Management Measures are based on qualitative risk characterisation. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. The risk phrase H304 (May be fatal if swallowed and enters airways) refers to the possibility of inhalation, a risk not quantifiable determined by the physico-chemical properties (i.e. viscosity) that may 'occur during ingestion and Even in the case of vomiting after ingestion. A DNEL can not be derived. Risks from physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures must be taken to control the risk of inhalation.

6. 06: Use in laboratories

6.1. Title section

Use in laboratories

ES Ref.: 06 ES Type: Industrial Version: 2.0 Revision date: 17/05/2018	Company ES code: ENI Date of issue: 16/11/2018

Environment		
Gen01	General measures applicable to all activities	PROC15, ERC4, ESVOC SPERC 4.24.v1

Processes, tasks, activities covered	Use of the substance within laboratory settings, including material transfers and equipment cleaning Industrial use
Assessment method	See Section 3.

6.2. Conditions of use affecting exposure

6.2.1. Control of environmental exposure: General measures applicable to all activities (PROC15, ERC4, ESVOC SPERC 4.24.v1)

PROC15	Use as laboratory reagent
ERC4	Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
ESVOC SPERC 4.24.v1	Laboratory chemicals: Industrial (SU3)

Conditions and measures related to personal protection, hygiene and health evaluation

Consider technical advances and process upgrades (including automation) for the elimination of releases.
Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation.
Drain down systems and clear transfer lines prior to breaking containment.
Clean/flush equipment, where possible, prior to maintenance.
Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely.
Ensure safe systems of work or equivalent arrangements are in place to manage risks.
Regularly inspect, test and maintain all control measures.
Consider the need for risk based health surveillance.
EXPOSURE SCENARIOS

All exposure scenarios for this substance did not require a quantitative assessment of exposure, but only a qualitative one.

Considering the specific hazard properties (H304), the implementation of the relevant risk reduction measures ensures that the possibility of the event connected to the hazard of aspiration is negligible, and risk can be assumed as controlled.

Workers:
- Do not ingest
- Implement basic standard of occupation hygiene
- Avoid splashes and spills
- Avoid contact with contaminated objects and tools
- Management/supervision actions to check that the Risk Reduction Measures in place are being used correctly and Operating Conditions are followed.
- Training for staff on good practices
- Good standard of personal hygiene

6.3. Exposure estimation and reference to its source

Information for this exposure scenario
Substance is UVCB. Standard tests for this endpoint are intended for single substances and are not appropriate for the risk assessment of this complex substance. A PNEC cannot be derived, No exposure assessment presented for the environment

6.3.1. Environmental release and exposure General measures applicable to all activities (PROC15, ERC4, ESVOC SPERC 4.24.v1)

Information for contributing exposure scenario
A quantitative risk assessment is not required for human health,Quantitative exposure and risk assessment not possible due to lack of emissions to aquatic environment,Qualitative approach used to conclude safe use

6.4. Guidance to Downstream User (DU) to evaluate whether he works inside the boundaries set by the ES

6.4.1. Environment

Guidance - 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).

6.4.2. Health

Guidance - Health	Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk Management Measures are based on qualitative risk characterisation. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. The risk phrase H304 (May be fatal if swallowed and enters airways) refers to the possibility of inhalation, a risk not quantifiable determined by the physico-chemical properties (i.e. viscosity) that may 'occur during ingestion and Even in the case of vomiting after ingestion. A DNEL can not be derived. Risks from physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures must be taken to control the risk of inhalation.

7. 07: Lubricants

7.1. Title section

Lubricants

ES Ref.: 07	Company ES code: ENI
ES Type: Industrial	Date of issue: 16/11/2018
Version: 2.0	
Revision date: 17/05/2018	

Environment		
Gen01	General measures applicable to all activities	PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC17, PROC18, ERC4, ERC7, ESVOC SPERC 4.6a.v1

Processes, tasks, activities covered	Covers the use of formulated lubricants within closed or contained systems including incidental exposures during material transfers, operation of engines and similar articles, equipment maintenance and disposal of waste oil. Industrial use
Assessment method	See Section 3.

7.2. Conditions of use affecting exposure

7.2.1. Control of environmental exposure: General measures applicable to all activities (PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC17, PROC18, ERC4, ERC7, ESVOC SPERC 4.6a.v1)

PROC1	Use in closed process, no likelihood of exposure (no sampling)
PROC2	Use in closed, continuous process with occasional controlled exposure (with sampling)
PROC3	Use in closed batch process (synthesis or formulation) (with sampling)
PROC4	Use in batch and other process (synthesis) where opportunity for exposure arises
PROC7	Industrial spraying
PROC8a	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
PROC8b	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC9	Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC10	Roller application or brushing
PROC13	Treatment of articles by dipping and pouring
PROC17	Lubrication at high energy conditions and in partly open process
PROC18	Greasing at high energy conditions
ERC4	Industrial use of processing aids in processes and products, not becoming part of articles
ERC7	Use of functional fluid at industrial site
ESVOC SPERC 4.6a.v1	Lubricants: Industrial (SU3)

Conditions and measures related to personal protection, hygiene and health evaluation

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance. Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance. EXPOSURE SCENARIOS All exposure scenarios for this substance did not require a quantitative assessment of exposure, but only a qualitative one. Considering the specific hazard properties (H304), the implementation of the relevant risk reduction measures ensures that the possibility of the event connected to the hazard of aspiration is negligible, and risk can be assumed as controlled. Workers: - Do not ingest - Implement basic standard of occupation hygiene - Avoid splashes and spills	

- Avoid contact with contaminated objects and tools - Management/supervision actions to check that the Risk Reduction Measures in place are being used correctly and Operating Conditions are followed. - Training for staff on good practices - Good standard of personal hygiene	

7.3. Exposure estimation and reference to its source

Information for this exposure scenario
Substance is UVCB. Standard tests for this endpoint are intended for single substances and are not appropriate for the risk assessment of this complex substance. A PNEC cannot be derived, No exposure assessment presented for the environment

7.3.1. Environmental release and exposure General measures applicable to all activities (PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC17, PROC18, ERC4, ERC7, ESVOC SPERC 4.6a.v1)

Information for contributing exposure scenario
A quantitative risk assessment is not required for human health,Quantitative exposure and risk assessment not possible due to lack of emissions to aquatic environment,Qualitative approach used to conclude safe use

7.4. Guidance to Downstream User (DU) to evaluate whether he works inside the boundaries set by the ES

7.4.1. Environment

Guidance - 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).

7.4.2. Health

Guidance - Health	Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk Management Measures are based on qualitative risk characterisation. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. The risk phrase H304 (May be fatal if swallowed and enters airways) refers to the possibility of inhalation, a risk not quantifiable determined by the physico-chemical properties (i.e. viscosity) that may 'occur during ingestion and Even in the case of vomiting after ingestion. A DNEL can not be derived. Risks from physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures must be taken to control the risk of inhalation.

8. 08: Use in Oil and Gas field drilling and production operations

8.1. Title section

Use in Oil and Gas field drilling and production operations

ES Ref.: 08 ES Type: Industrial Version: 2.0 Revision date: 17/05/2018	Company ES code: ENI Date of issue: 16/11/2018

Environment		
Gen01	General measures applicable to all activities	PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, ERC4, ESVOC SPERC 4.5a.v1

Processes, tasks, activities covered	Oil field well drilling and production operations (including drilling muds and well cleaning) including material transfers, on-site formulation, well head operations, shaker room activities and related maintenance. Industrial use
Assessment method	See Section 3.

8.2. Conditions of use affecting exposure

8.2.1. Control of environmental exposure: General measures applicable to all activities (PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, ERC4, ESVOC SPERC 4.5a.v1)

PROC1	Use in closed process, no likelihood of exposure (no sampling)
PROC2	Use in closed, continuous process with occasional controlled exposure (with sampling)
PROC3	Use in closed batch process (synthesis or formulation) (with sampling)
PROC4	Use in batch and other process (synthesis) where opportunity for exposure arises
PROC8a	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
PROC8b	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
ERC4	Industrial use of processing aids in processes and products, not becoming part of articles
ESVOC SPERC 4.5a.v1	Use in Oil and Gas field drilling and production operations: Industrial (SU3)

Conditions and measures related to personal protection, hygiene and health evaluation

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance. Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance. EXPOSURE SCENARIOS All exposure scenarios for this substance did not require a quantitative assessment of exposure, but only a qualitative one. Considering the specific hazard properties (H304), the implementation of the relevant risk reduction measures ensures that the possibility of the event connected to the hazard of aspiration is negligible, and risk can be assumed as controlled. Workers: - Do not ingest - Implement basic standard of occupation hygiene - Avoid splashes and spills - Avoid contact with contaminated objects and tools - Management/supervision actions to check that the Risk Reduction Measures in place are being used correctly and Operating Conditions are followed. - Training for staff on good practices - Good standard of personal hygiene	

8.3. Exposure estimation and reference to its source

Information for this exposure scenario
Substance is UVCB. Standard tests for this endpoint are intended for single substances and are not appropriate for the risk assessment of this complex substance. A PNEC cannot be derived, No exposure assessment presented for the environment

8.3.1. Environmental release and exposure General measures applicable to all activities (PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, ERC4, ESVOC SPERC 4.5a.v1)

Information for contributing exposure scenario
A quantitative risk assessment is not required for human health,Quantitative exposure and risk assessment not possible due to lack of emissions to aquatic environment,Qualitative approach used to conclude safe use

8.4. Guidance to Downstream User (DU) to evaluate whether he works inside the boundaries set by the ES

8.4.1. Environment

Guidance - 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).

8.4.2. Health

Guidance - Health	Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk Management Measures are based on qualitative risk characterisation. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. The risk phrase H304 (May be fatal if swallowed and enters airways) refers to the possibility of inhalation, a risk not quantifiable determined by the physico-chemical properties (i.e. viscosity) that may 'occur during ingestion and Even in the case of vomiting after ingestion. A DNEL can not be derived. Risks from physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures must be taken to control the risk of inhalation.

9. 09: Use as Functional Fluids

9.1. Title section

Use as Functional Fluids

ES Ref.: 09 ES Type: Professional Version: 2.0 Revision date: 17/05/2018	Company ES code: ENI Date of issue: 16/11/2018

Environment		
Gen01	General measures applicable to all activities	ERC9a, ERC9b, ESVOC SPERC 9.13b.v1

Processes, tasks, activities covered	Use as functional fluids e.g. cable oils, transfer oils, insulators, refrigerants, hydraulic fluids in closed professional equipment including incidental exposures during maintenance and related material transfers. Professional use
Assessment method	See Section 3.

9.2. Conditions of use affecting exposure

9.2.1. Control of environmental exposure: General measures applicable to all activities (ERC9a, ERC9b, ESVOC SPERC 9.13b.v1)

ERC9a	Wide dispersive indoor use of substances in closed systems
ERC9b	Wide dispersive outdoor use of substances in closed systems
ESVOC SPERC 9.13b.v1	Use as Functional Fluids: Professional (SU22)

Conditions and measures related to personal protection, hygiene and health evaluation

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance. Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance. EXPOSURE SCENARIOS All exposure scenarios for this substance did not require a quantitative assessment of exposure, but only a qualitative one. Considering the specific hazard properties (H304), the implementation of the relevant risk reduction measures ensures that the possibility of the event connected to the hazard of aspiration is negligible, and risk can be assumed as controlled. Workers: - Do not ingest - Implement basic standard of occupation hygiene - Avoid splashes and spills - Avoid contact with contaminated objects and tools - Management/supervision actions to check that the Risk Reduction Measures in place are being used correctly and Operating Conditions are followed. - Training for staff on good practices - Good standard of personal hygiene	

9.3. Exposure estimation and reference to its source

Information for this exposure scenario
Substance is UVCB. Standard tests for this endpoint are intended for single substances and are not appropriate for the risk assessment of this complex substance. A PNEC cannot be derived, No exposure assessment presented for the environment

9.3.1. Environmental release and exposure General measures applicable to all activities (ERC9a, ERC9b, ESVOC SPERC 9.13b.v1)

Information for contributing exposure scenario
A quantitative risk assessment is not required for human health,Quantitative exposure and risk assessment not possible due to lack of emissions to aquatic environment,Qualitative approach used to conclude safe use

9.4. Guidance to Downstream User (DU) to evaluate whether he works inside the boundaries set by the ES

9.4.1. Environment

Guidance - 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).

9.4.2. Health

Guidance - Health	Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk Management Measures are based on qualitative risk characterisation. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. The risk phrase H304 (May be fatal if swallowed and enters airways) refers to the possibility of inhalation, a risk not quantifiable determined by the physico-chemical properties (i.e. viscosity) that may 'occur during ingestion and Even in the case of vomiting after ingestion. A DNEL can not be derived. Risks from physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures must be taken to control the risk of inhalation.

10. 10: Use in laboratories

10.1. Title section

Use in laboratories

ES Ref.: 10 ES Type: Professional Version: 2.0 Revision date: 17/05/2018	Company ES code: ENI Date of issue: 16/11/2018

Environment		
Gen01	General measures applicable to all activities	PROC15, ERC8a, ERC9a, ESVOC SPERC 8.17.v1

Processes, tasks, activities covered	Use of the substance within laboratory settings, including material transfers and equipment cleaning Professional use
Assessment method	See Section 3.

10.2. Conditions of use affecting exposure

10.2.1. Control of environmental exposure: General measures applicable to all activities (PROC15, ERC8a, ERC9a, ESVOC SPERC 8.17.v1)

PROC15	Use as laboratory reagent
ERC8a	Wide dispersive indoor use of processing aids in open systems
ERC9a	Wide dispersive indoor use of substances in closed systems
ESVOC SPERC 8.17.v1	Laboratory chemicals: Professional (SU22)

Conditions and measures related to personal protection, hygiene and health evaluation

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance. Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance. EXPOSURE SCENARIOS All exposure scenarios for this substance did not require a quantitative assessment of exposure, but only a qualitative one. Considering the specific hazard properties (H304), the implementation of the relevant risk reduction measures ensures that the possibility of the event connected to the hazard of aspiration is negligible, and risk can be assumed as controlled. Workers: - Do not ingest - Implement basic standard of occupation hygiene - Avoid splashes and spills - Avoid contact with contaminated objects and tools - Management/supervision actions to check that the Risk Reduction Measures in place are being used correctly and Operating Conditions are followed. - Training for staff on good practices - Good standard of personal hygiene	

10.3. Exposure estimation and reference to its source

Information for this exposure scenario
Substance is UVCB. Standard tests for this endpoint are intended for single substances and are not appropriate for the risk assessment of this complex substance. A PNEC cannot be derived, No exposure assessment presented for the environment

10.3.1. Environmental release and exposure General measures applicable to all activities (PROC15, ERC8a, ERC9a, ESVOC SPERC 8.17.v1)

Information for contributing exposure scenario
A quantitative risk assessment is not required for human health,Quantitative exposure and risk assessment not possible due to lack of emissions to aquatic environment,Qualitative approach used to conclude safe use

10.4. Guidance to Downstream User (DU) to evaluate whether he works inside the boundaries set by the ES

10.4.1. Environment

Guidance - 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).

10.4.2. Health

Guidance - Health	Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk Management Measures are based on qualitative risk characterisation. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. The risk phrase H304 (May be fatal if swallowed and enters airways) refers to the possibility of inhalation, a risk not quantifiable determined by the physico-chemical properties (i.e. viscosity) that may 'occur during ingestion and Even in the case of vomiting after ingestion. A DNEL can not be derived. Risks from physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures must be taken to control the risk of inhalation.

11. 11: Lubricants

11.1. Title section

Lubricants

ES Ref.: 11	Company ES code: ENI
ES Type: Professional	Date of issue: 16/11/2018
Version: 2.0	
Revision date: 17/05/2018	

Environment		
Gen01	General measures applicable to all activities	PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC17, PROC18, PROC20, ERC8a, ERC8d, ERC9a, ERC9b, ESVOC SPERC 8.6c.v1

Processes, tasks, activities covered	Covers the use of formulated lubricants within closed or contained systems including incidental exposures during material transfers, operation of engines and similar articles, equipment maintenance and disposal of waste oil. Professional use
Assessment method	See Section 3.

11.2. Conditions of use affecting exposure

11.2.1. Control of environmental exposure: General measures applicable to all activities (PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC17, PROC18, PROC20, ERC8a, ERC8d, ERC9a, ERC9b, ESVOC SPERC 8.6c.v1)

PROC1	Use in closed process, no likelihood of exposure (no sampling)
PROC2	Use in closed, continuous process with occasional controlled exposure (with sampling)
PROC3	Use in closed batch process (synthesis or formulation) (with sampling)
PROC4	Use in batch and other process (synthesis) where opportunity for exposure arises
PROC8a	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
PROC8b	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC9	Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC10	Roller application or brushing
PROC11	Non industrial spraying
PROC13	Treatment of articles by dipping and pouring
PROC17	Lubrication at high energy conditions and in partly open process
PROC18	Greasing at high energy conditions
PROC20	Heat and pressure transfer fluids in dispersive use but closed systems
ERC8a	Wide dispersive indoor use of processing aids in open systems
ERC8d	Wide dispersive outdoor use of processing aids in open systems
ERC9a	Wide dispersive indoor use of substances in closed systems
ERC9b	Wide dispersive outdoor use of substances in closed systems
ESVOC SPERC 8.6c.v1	Lubricants: Professional (SU22) - high environmental release

Conditions and measures related to personal protection, hygiene and health evaluation

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance. Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance. EXPOSURE SCENARIOS All exposure scenarios for this substance did not require a quantitative assessment of exposure, but only a qualitative one. Considering the specific hazard properties (H304), the implementation of the relevant risk reduction measures ensures that the possibility of the event connected to the hazard of aspiration is negligible, and risk can be assumed as controlled.	

Workers: - Do not ingest - Implement basic standard of occupation hygiene - Avoid splashes and spills - Avoid contact with contaminated objects and tools - Management/supervision actions to check that the Risk Reduction Measures in place are being used correctly and Operating Conditions are followed. - Training for staff on good practices - Good standard of personal hygiene	

11.3. Exposure estimation and reference to its source

Information for this exposure scenario
Substance is UVCB. Standard tests for this endpoint are intended for single substances and are not appropriate for the risk assessment of this complex substance. A PNEC cannot be derived, No exposure assessment presented for the environment

11.3.1. Environmental release and exposure General measures applicable to all activities (PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC17, PROC18, PROC20, ERC8a, ERC8d, ERC9a, ERC9b, ESVOC SPERC 8.6c.v1)

Information for contributing exposure scenario
A quantitative risk assessment is not required for human health,Quantitative exposure and risk assessment not possible due to lack of emissions to aquatic environment,Qualitative approach used to conclude safe use

11.4. Guidance to Downstream User (DU) to evaluate whether he works inside the boundaries set by the ES

11.4.1. Environment

Guidance - 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).

11.4.2. Health

Guidance - Health	Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk Management Measures are based on qualitative risk characterisation. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. The risk phrase H304 (May be fatal if swallowed and enters airways) refers to the possibility of inhalation, a risk not quantifiable determined by the physico-chemical properties (i.e. viscosity) that may 'occur during ingestion and Even in the case of vomiting after ingestion. A DNEL can not be derived. Risks from physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures must be taken to control the risk of inhalation.

12. 12: Use in Oil and Gas field drilling and production operations

12.1. Title section

Use in Oil and Gas field drilling and production operations

ES Ref.: 12 ES Type: Professional Version: 2.0 Revision date: 17/05/2018	Company ES code: ENI Date of issue: 16/11/2018

Environment		
Gen01	General measures applicable to all activities	PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, ERC8d, ERC9b, ESVOC SPERC 8.5b.v1

Processes, tasks, activities covered	Oil field well drilling and production operations (including drilling muds and well cleaning) within closed or contained systems including incidental exposures during material transfers, on-site and activities and related maintenance. Professional use
Assessment method	See Section 3.

12.2. Conditions of use affecting exposure

12.2.1. Control of environmental exposure: General measures applicable to all activities (PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, ERC8d, ERC9b, ESVOC SPERC 8.5b.v1)

PROC1	Use in closed process, no likelihood of exposure (no sampling)
PROC2	Use in closed, continuous process with occasional controlled exposure (with sampling)
PROC3	Use in closed batch process (synthesis or formulation) (with sampling)
PROC4	Use in batch and other process (synthesis) where opportunity for exposure arises
PROC8a	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
PROC8b	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
ERC8d	Wide dispersive outdoor use of processing aids in open systems
ERC9b	Wide dispersive outdoor use of substances in closed systems
ESVOC SPERC 8.5b.v1	Use in Oil and Gas field drilling and production operations: Professional (SU22)

Conditions and measures related to personal protection, hygiene and health evaluation

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance. Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance. EXPOSURE SCENARIOS All exposure scenarios for this substance did not require a quantitative assessment of exposure, but only a qualitative one. Considering the specific hazard properties (H304), the implementation of the relevant risk reduction measures ensures that the possibility of the event connected to the hazard of aspiration is negligible, and risk can be assumed as controlled. Workers: - Do not ingest - Implement basic standard of occupation hygiene - Avoid splashes and spills - Avoid contact with contaminated objects and tools - Management/supervision actions to check that the Risk Reduction Measures in place are being used correctly and Operating Conditions are followed. - Training for staff on good practices - Good standard of personal hygiene	

12.3. Exposure estimation and reference to its source

Information for this exposure scenario
Substance is UVCB. Standard tests for this endpoint are intended for single substances and are not appropriate for the risk assessment of this

complex substance. A PNEC cannot be derived, No exposure assessment presented for the environment

12.3.1. Environmental release and exposure General measures applicable to all activities (PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, ERC8d, ERC9b, ESVOC SPERC 8.5b.v1)

Information for contributing exposure scenario
A quantitative risk assessment is not required for human health,Quantitative exposure and risk assessment not possible due to lack of emissions to aquatic environment,Qualitative approach used to conclude safe use

12.4. Guidance to Downstream User (DU) to evaluate whether he works inside the boundaries set by the ES

12.4.1. Environment

Guidance - 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).

12.4.2. Health

Guidance - Health	Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk Management Measures are based on qualitative risk characterisation. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. The risk phrase H304 (May be fatal if swallowed and enters airways) refers to the possibility of inhalation, a risk not quantifiable determined by the physico-chemical properties (i.e. viscosity) that may 'occur during ingestion and Even in the case of vomiting after ingestion. A DNEL can not be derived. Risks from physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures must be taken to control the risk of inhalation.