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

1.1 Product identifier

Trade name	:	Risella X 411
Product code	:	Q6568
Registration number	:	01-2120078782-46-0000
Synonyms	:	Hydrocarbons C18-C24, isoalkanes, <2% aromatics
CAS-No.	:	1437280-85-7
EC-No.	:	940-734-7

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

Use of the Substance/Mixture	:	Solvent. Please refer to Ch16 and/or the annexes for the registered uses under REACH.
Uses advised against	:	This product must not be used in applications other than the above without first seeking the advice of the supplier.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier	:	**Shell Chemicals Europe B.V.** PO Box 2334 3000 CH Rotterdam Netherlands
Telephone	:	+31 (0)10 441 5137 / +31 (0)10 441 5191
Telefax	:	+31 (0)20 716 8316 / +31 (0)20 713 9230
Email Contact for Safety Data Sheet	:	sccmsds@shell.com

1.4 Emergency telephone number

+44 (0) 1235 239 670 (This telephone number is available 24 hours per day, 7 days per week)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Aspiration hazard, Category 1	H304: May be fatal if swallowed and enters airways.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Danger

Hazard statements :

PHYSICAL HAZARDS:
Not classified as a physical hazard according to CLP criteria.
HEALTH HAZARDS:
H304 May be fatal if swallowed and enters airways.
ENVIRONMENTAL HAZARDS:
Not classified as environmental hazard according to CLP criteria.

Supplemental Hazard Statements : EUH066 Repeated exposure may cause skin dryness or cracking.

Precautionary statements :

Prevention:
P243 Take precautionary measures against static discharge.
Response:
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P331 Do NOT induce vomiting.
Storage:
P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

May form flammable/explosive vapour-air mixture.
This material is a static accumulator.
Even with proper grounding and bonding, this material can still accumulate an electrostatic charge.
If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur.

SECTION 3: Composition/information on ingredients

3.1 Substances

Hazardous components

Chemical name	CAS-No. EC-No.	Concentration (% w/w)
Alkanes, C18-24-branched	1437280-85-7	100

and linear	940-734-7	

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Not expected to be a health hazard when used under normal conditions.

Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.

If inhaled : No treatment necessary under normal conditions of use.
If symptoms persist, obtain medical advice.

In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
If persistent irritation occurs, obtain medical attention.

In case of eye contact : Flush eye with copious quantities of water.
Remove contact lenses, if present and easy to do. Continue rinsing.
If persistent irritation occurs, obtain medical attention.

If swallowed : Call emergency number for your location / facility.
If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.
If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101° F (38.3°C), shortness of breath, chest congestion or continued coughing or wheezing.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Not considered to be an inhalation hazard under normal conditions of use.
Possible respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, coughing, and/or difficulty breathing.

No specific hazards under normal use conditions.
Skin irritation signs and symptoms may include a burning sensation, redness, or swelling.

No specific hazards under normal use conditions.
Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision.

If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest

congestion, shortness of breath, and/or fever.
If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101° F (38.3°C), shortness of breath, chest congestion or continued coughing or wheezing.

Defatting dermatitis signs and symptoms may include a burning sensation and/or a dried/cracked appearance.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment	:	Call a doctor or poison control center for guidance. Potential for chemical pneumonitis. Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Unsuitable extinguishing media	:	Do not use water in a jet.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting	:	Clear fire area of all non-emergency personnel. Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds. Flammable vapours may be present even at temperatures below the flash point. The vapour is heavier than air, spreads along the ground and distant ignition is possible. Will float and can be reignited on surface water.

5.3 Advice for firefighters

Special protective equipment for firefighters	:	Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).
Specific extinguishing methods	:	Standard procedure for chemical fires.
Further information	:	Keep adjacent containers cool by spraying with water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Observe all relevant local and international regulations.

Notify authorities if any exposure to the general public or the environment occurs or is likely to occur.
Local authorities should be advised if significant spillages cannot be contained.
6.1.1 For non emergency personnel:
Avoid contact with skin, eyes and clothing.
Isolate hazard area and deny entry to unnecessary or unprotected personnel.
Do not breathe fumes, vapour.
Do not operate electrical equipment.
6.1.2 For emergency responders:
Avoid contact with skin, eyes and clothing.
Isolate hazard area and deny entry to unnecessary or unprotected personnel.
Do not breathe fumes, vapour.
Do not operate electrical equipment.

6.2 Environmental precautions

Environmental precautions : Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment.
Monitor area with combustible gas indicator.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up : For small liquid spills (< 1 drum), transfer by mechanical means to a labeled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.
For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely
Ventilate contaminated area thoroughly.
If contamination of site occurs remediation may require specialist advice.

6.4 Reference to other sections

For guidance on selection of personal protective equipment see Section 8 of this Safety Data Sheet., For guidance on disposal of spilled material see Section 13 of this Safety Data Sheet.

SECTION 7: Handling and storage

General Precautions : Avoid breathing of or direct contact with material. Only use in well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see Section 8 of this Safety Data Sheet.
Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
Ensure that all local regulations regarding handling and storage facilities are followed.

7.1 Precautions for safe handling

Advice on safe handling : Avoid inhaling vapour and/or mists.
Avoid contact with skin, eyes and clothing.
Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks.
Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.
Bulk storage tanks should be diked (bunded).
When using do not eat or drink.

The vapour is heavier than air, spreads along the ground and distant ignition is possible.

Product Transfer : Even with proper grounding and bonding, this material can still accumulate an electrostatic charge. If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur. Be aware of handling operations that may give rise to additional hazards that result from the accumulation of static charges. These include but are not limited to pumping (especially turbulent flow), mixing, filtering, splash filling, cleaning and filling of tanks and containers, sampling, switch loading, gauging, vacuum truck operations, and mechanical movements. These activities may lead to static discharge e.g. spark formation. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (≤ 1 m/s until fill pipe submerged to twice its diameter, then ≤ 7 m/s). Avoid splash filling. Do NOT use compressed air for filling, discharging, or handling operations.

Refer to guidance under Handling section.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Refer to section 15 for any additional specific legislation covering the packaging and storage of this product.

Other data : Storage Temperature: Ambient.

Bulk storage tanks should be diked (bunded). Locate tanks away from heat and other sources of ignition. Cleaning, inspection and maintenance of storage tanks is a specialist operation, which requires the implementation of strict procedures and precautions. Must be stored in a diked (bunded) well- ventilated area, away from sunlight, ignition sources and other sources of heat. Keep away from aerosols, flammables, oxidizing agents, corrosives and from other flammable products which are not harmful or toxic to man or to the environment. Electrostatic charges will be generated during pumping. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment to reduce the risk. The vapours in the head space of the storage vessel may lie in the flammable/explosive range and hence may be flammable.

Packaging material : Suitable material: For containers, or container linings use mild steel, stainless steel., For container paints, use epoxy paint, zinc silicate paint.
Unsuitable material: Avoid prolonged contact with natural, butyl or nitrile rubbers.

Container Advice : Do not cut, drill, grind, weld or perform similar operations on or near containers.

7.3 Specific end use(s)

Specific use(s) : Please refer to Ch16 and/or the annexes for the registered uses under REACH.

See additional references that provide safe handling practices for liquids that are determined to be static accumulators: American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practices on Static Electricity).
IEC/TS 60079-32-1: Electrostatic hazards, guidance

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis

Aliphatic dearom. solvents 200 - 250		TWA	1.050 mg/m3	EU HSPA

Biological occupational exposure limits

No biological limit allocated.

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:
Alkanes, C18-24-branched and linear : No DNEL value has been established.

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:
Alkanes, C18-24-branched and linear : Substance is a hydrocarbon with a complex, unknown or variable composition. Conventional methods of deriving PNECs are not appropriate and it is not possible to identify a single representative PNEC for such substances.

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.
Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.
Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.
National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods http://www.cdc.gov/niosh/
Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods http://www.osha.gov/
Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances http://www.hse.gov.uk/
Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA) , Germany http://www.dguv.de/inhalt/index.jsp
L'Institut National de Recherche et de Securité, (INRS), France http://www.inrs.fr/accueil

8.2 Exposure controls

Engineering measures Read in conjunction with the Exposure Scenario for your specific use contained in the Annex.
Use sealed systems as far as possible.
Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits.
Local exhaust ventilation is recommended.
Firewater monitors and deluge systems are recommended.
Eye washes and showers for emergency use.
Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.
The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:

General Information:
Always observe good personal hygiene measures, such as washing hands after handling the material

and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.
Practice good housekeeping.
Define procedures for safe handling and maintenance of controls.
Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.
Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.
Drain down system prior to equipment break-in or maintenance.
Retain drain downs in sealed storage pending disposal or subsequent recycle.

Personal protective equipment

Read in conjunction with the Exposure Scenario for your specific use contained in the Annex.
The provided information is made in consideration of the PPE directive (Council Directive 89/686/EEC) and the CEN European Committee for Standardisation (CEN) standards.

Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Eye protection	:	If material is handled such that it could be splashed into eyes, protective eyewear is recommended. Approved to EU Standard EN166.
Hand protection		
Remarks	:	Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. Longer term protection: Nitrile rubber gloves. Incidental contact/Splash protection: PVC, neoprene or nitrile rubber gloves For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.
Skin and body protection	:	Skin protection is not required under normal conditions of use.

For prolonged or repeated exposures use impervious clothing over parts of the body subject to exposure.
If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to relevant Standard, and provide employee skin care programmes.

Protective clothing approved to EU Standard EN14605.

Wear antistatic and flame-retardant clothing, if a local risk assessment deems it so.

Respiratory protection : If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.
Check with respiratory protective equipment suppliers.
Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus.
Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.
If air-filtering respirators are suitable for conditions of use:
Select a filter suitable for organic gases and vapours [Type A boiling point > 65°C (149°F)] meeting EN14387.

Hygiene measures : Wash hands before eating, drinking, smoking and using the toilet. Launder contaminated clothing before re-use. Do not ingest. If swallowed, then seek immediate medical assistance.

Environmental exposure controls

General advice : Read in conjunction with the Exposure Scenario for your specific use contained in the Annex.
Take appropriate measures to fulfil the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Section 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water.
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.
Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation.
Information on accidental release measures are to be found in section 6.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	liquid
Colour	:	colourless
Odour	:	Hydrocarbon
Odour Threshold	:	Data not available
pH	:	Not applicable
Melting / freezing point	:	Data not available
Boiling point/boiling range	:	300 - 380 °C
Flash point	:	170 °C Method: ASTM D93 (PMCC)
Flammability (solid, gas)	:	Data not available
Upper explosion limit	:	7 %(V)
Lower explosion limit	:	0,5 %(V)
Vapour pressure	:	Data not available
Relative vapour density	:	Data not available
Relative density	:	< 0,8Method: ASTM D4052
Density	:	< 800 kg/m3 (15 °C) Method: ASTM D4052
Solubility(ies)		
Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	log Pow: > 7
Auto-ignition temperature	:	> 200 °C
Decomposition temperature	:	Data not available
Viscosity		
Viscosity, dynamic	:	Data not available
Viscosity, kinematic	:	Typical 9,5 mm2/s (25 °C) Method: ASTM D445
Explosive properties	:	Not classified

Oxidizing properties	:	Not applicable

9.2 Other information

Surface tension	:	Data not available
Conductivity	:	Low conductivity: < 100 pS/m The conductivity of this material makes it a static accumulator., A liquid is typically considered nonconductive if its conductivity is below 100 pS/m and is considered semi-conductive if its conductivity is below 10,000 pS/m., Whether a liquid is nonconductive or semi-conductive, the precautions are the same., A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives can greatly influence the conductivity of a liquid
Molecular weight	:	Data not available

SECTION 10: Stability and reactivity

10.1 Reactivity

The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.

10.2 Chemical stability

No hazardous reaction is expected when handled and stored according to provisions, Stable under normal conditions of use.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	Reacts with strong oxidising agents.

10.4 Conditions to avoid

Conditions to avoid	:	Avoid heat, sparks, open flames and other ignition sources. In certain circumstances product can ignite due to static electricity.

10.5 Incompatible materials

Materials to avoid	:	Strong oxidising agents.

10.6 Hazardous decomposition products

Hazardous decomposition products	:	Hazardous decomposition products are not expected to form during normal storage. Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases including carbon monoxide, carbon dioxide, sulphur oxides

and unidentified organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Basis for assessment	:	Information given is based on product testing, and/or similar products, and/or components.
Information on likely routes of exposure	:	Exposure may occur via inhalation, ingestion, skin absorption, skin or eye contact, and accidental ingestion.

Acute toxicity

Components:

Alkanes, C18-24-branched and linear:

Acute oral toxicity	:	LD50 Rat: > 5000 mg/kg Remarks: Low toxicity: Based on available data, the classification criteria are not met.
Acute inhalation toxicity	:	Remarks: LC50 greater than near-saturated vapour concentration. Low toxicity if inhaled. Based on available data, the classification criteria are not met.
Acute dermal toxicity	:	LD50 Rabbit: > 2000 mg/kg Remarks: Low toxicity: Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Components:

Alkanes, C18-24-branched and linear:
Remarks: Not irritating to skin.

Serious eye damage/eye irritation

Components:

Alkanes, C18-24-branched and linear:
Remarks: Not irritating to eye.

Respiratory or skin sensitisation

Components:

Alkanes, C18-24-branched and linear:

Remarks: Not a sensitiser., Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Components:

Alkanes, C18-24-branched and linear:
: Remarks: Non mutagenic

Germ cell mutagenicity- Assessment : This product does not meet the criteria for classification in categories 1A/1B.

Carcinogenicity

Components:

Alkanes, C18-24-branched and linear:

Remarks: Not a carcinogen., Based on available data, the classification criteria are not met.

Carcinogenicity - Assessment : This product does not meet the criteria for classification in categories 1A/1B.

Material	GHS/CLP Carcinogenicity Classification
Alkanes, C18-24-branched and linear	No carcinogenicity classification.

Reproductive toxicity

Components:

Alkanes, C18-24-branched and linear:
Effects on fertility :
Remarks: Not a developmental toxicant., Based on available data, the classification criteria are not met., Does not impair fertility.

Reproductive toxicity - Assessment : This product does not meet the criteria for classification in categories 1A/1B.

STOT - single exposure

Components:

Alkanes, C18-24-branched and linear:
Remarks: Based on available data, the classification criteria are not met.

STOT - repeated exposure

Components:

Alkanes, C18-24-branched and linear:
Remarks: Based on available data, the classification criteria are not met.

Aspiration toxicity

Components:
Alkanes, C18-24-branched and linear:
Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

Further information

Components:
Alkanes, C18-24-branched and linear:
Remarks: Classifications by other authorities under varying regulatory frameworks may exist.

SECTION 12: Ecological information

12.1 Toxicity

Basis for assessment	:	Incomplete ecotoxicological data are available for this product. The information given below is based partly on a knowledge of the components and the ecotoxicology of similar products.

Components:
Alkanes, C18-24-branched and linear :

Toxicity to fish (Acute toxicity)	:	LL50 : > 100 mg/l Remarks: Practically non toxic: Based on available data, the classification criteria are not met.
Toxicity to crustacean (Acute toxicity)	:	EL50 : > 100 mg/l Remarks: Practically non toxic: Based on available data, the classification criteria are not met.
Toxicity to algae/aquatic plants (Acute toxicity)	:	EL50 : > 100 mg/l Remarks: Practically non toxic: Based on available data, the classification criteria are not met.
Toxicity to microorganisms (Acute toxicity)	:	IC50 : > 100 mg/l Remarks: Practically non toxic: Based on available data, the classification criteria are not met.
Toxicity to fish (Chronic toxicity)	:	Remarks: NOEC/NOEL > 100 mg/l
Toxicity to crustacean	:	Remarks: NOEC/NOEL > 100 mg/l

(Chronic toxicity)

12.2 Persistence and degradability

Components:
Alkanes, C18-24-branched and linear :

Biodegradability	:	Remarks: Oxidises rapidly by photo-chemical reactions in air., Readily biodegradable.

12.3 Bioaccumulative potential

Product:

Partition coefficient: n-octanol/water	:	log Pow: > 7

Components:
Alkanes, C18-24-branched and linear :

Bioaccumulation	:	Remarks: Has the potential to bioaccumulate.

12.4 Mobility in soil

Components:
Alkanes, C18-24-branched and linear :

Mobility	:	Remarks: Floats on water., If it enters soil, it will adsorb to soil particles and will not be mobile.

12.5 Results of PBT and vPvB assessment

Components:
Alkanes, C18-24-branched and linear :

Assessment	:	The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB.

12.6 Other adverse effects

Components:
Alkanes, C18-24-branched and linear :

Additional ecological information	:	Does not have ozone depletion potential.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	:	Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment. Do not dispose into the environment, in drains or in water

courses
Do not dispose of tank water bottoms by allowing them to drain into the ground. This will result in soil and groundwater contamination.
Waste arising from a spillage or tank cleaning should be disposed of in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.

Waste, spills or used product is dangerous waste.

Disposal should be in accordance with applicable regional, national, and local laws and regulations.
Local regulations may be more stringent than regional or national requirements and must be complied with.

MARPOL - see International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) which provides technical aspects at controlling pollutions from ships.

Contaminated packaging : Drain container thoroughly.
After draining, vent in a safe place away from sparks and fire.
Residues may cause an explosion hazard. Do not puncture, cut or weld uncleaned drums.
Send to drum recoverer or metal reclaimer.
Comply with any local recovery or waste disposal regulations.

SECTION 14: Transport information

14.1 UN number

IMDG : Not regulated as a dangerous good
IATA : Not regulated as a dangerous good

14.2 Proper shipping name

IMDG : Not regulated as a dangerous good
IATA : Not regulated as a dangerous good

14.3 Transport hazard class

IMDG : Not regulated as a dangerous good
IATA : Not regulated as a dangerous good

14.4 Packing group

IMDG : Not regulated as a dangerous good
IATA : Not regulated as a dangerous good

14.5 Environmental hazards

IMDG : Not regulated as a dangerous good

14.6 Special precautions for user

Remarks : Special Precautions: Refer to Section 7, Handling & Storage, for special precautions which a user needs to be aware of or

needs to comply with in connection with transport.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied. MARPOL Annex 1 rules apply for bulk shipments by sea.

Additional Information **:** This product may be transported under nitrogen blanketing. Nitrogen is an odourless and invisible gas. Exposure to nitrogen enriched atmospheres displaces available oxygen which may cause asphyxiation or death. Personnel must observe strict safety precautions when involved with a confined space entry.

SECTION 15: Regulatory information

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

REACH - List of substances subject to authorisation (Annex XIV)	:	Product is not subject to Authorisation under REACH.
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).
Other regulations	:	The regulatory information is not intended to be comprehensive. Other regulations may apply to this material. 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), annex XIV. 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), annex XVII. Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work and its amendments. Directive 1994/33/EC on the protection of young people at work and its amendments. Council Directive 92/85/EEC on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding and its amendments.

The components of this product are reported in the following inventories:

DSL	:	Listed
ENCS	:	Listed
KECI	:	Listed
TSCA	:	Listed
IECSC	:	Notified with Restrictions.
PICCS	:	Notified with Restrictions.

15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Full text of other abbreviations

Asp. Tox. Aspiration hazard

Abbreviations and Acronyms : The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists
ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road
AICS = Australian Inventory of Chemical Substances
ASTM = American Society for Testing and Materials
BEL = Biological exposure limits
BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
CAS = Chemical Abstracts Service
CEFIC = European Chemical Industry Council
CLP = Classification Packaging and Labelling
COC = Cleveland Open-Cup
DIN = Deutsches Institut fur Normung
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
DSL = Canada Domestic Substance List
EC = European Commission
EC50 = Effective Concentration fifty
ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals
ECHA = European Chemicals Agency
EINECS = The European Inventory of Existing Commercial Chemical Substances
EL50 = Effective Loading fifty
ENCS = Japanese Existing and New Chemical Substances Inventory
EWC = European Waste Code
GHS = Globally Harmonised System of Classification and Labelling of Chemicals
IARC = International Agency for Research on Cancer

IATA = International Air Transport Association
IC50 = Inhibitory Concentration fifty
IL50 = Inhibitory Level fifty
IMDG = International Maritime Dangerous Goods
INV = Chinese Chemicals Inventory
IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables
KECI = Korea Existing Chemicals Inventory
LC50 = Lethal Concentration fifty
LD50 = Lethal Dose fifty per cent.
LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading
LL50 = Lethal Loading fifty
MARPOL = International Convention for the Prevention of Pollution From Ships
NOEC/NOEL = No Observed Effect Concentration / No Observed Effect Level
OE_HPV = Occupational Exposure - High Production Volume
PBT = Persistent, Bioaccumulative and Toxic
PICCS = Philippine Inventory of Chemicals and Chemical Substances
PNEC = Predicted No Effect Concentration
REACH = Registration Evaluation And Authorisation Of Chemicals
RID = Regulations Relating to International Carriage of Dangerous Goods by Rail
SKIN_DES = Skin Designation
STEL = Short term exposure limit
TRA = Targeted Risk Assessment
TSCA = US Toxic Substances Control Act
TWA = Time-Weighted Average
vPvB = very Persistent and very Bioaccumulative

Further information

Training advice	:	Provide adequate information, instruction and training for operators.
Other information	:	For Industry guidance and tools on REACH please visit the CEFIC website at http://cefic.org/Industry-support. The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB. A vertical bar (|) in the left margin indicates an amendment from the previous version.
Sources of key data used to compile the Safety Data Sheet	:	The quoted data are from, but not limited to, one or more sources of information (e.g. toxicological data from Shell Health Services, material suppliers' data, CONCAWE, EU

IUCLID date base, EC 1272 regulation, etc).

Identified Uses according to the Use Descriptor System

Uses - Worker
Title : Manufacture of substance- Industrial

Uses - Worker
Title : Distribution of substance- Industrial

Uses - Worker
Title : Formulation & (re)packing of substances and mixtures- Industrial

Uses - Worker
Title : Uses in Coatings- Industrial

Uses - Worker
Title : Uses in Coatings- Professional

Uses - Worker
Title : Use in Cleaning Agents- Industrial

Uses - Worker
Title : Use in Cleaning Agents- Professional

Uses - Worker
Title : Use in Oil and Gas field drilling and production operations- Industrial

Uses - Worker
Title : Use in Oil and Gas field drilling and production operations- Professional

Uses - Worker
Title : Lubricants- Industrial

Uses - Worker
Title : Lubricants- ProfessionalLow Environmental ReleaseHigh Environmental Release

Uses - Worker
Title : Metal working fluids / rolling oils- Industrial

Uses - Worker
Title : Metal working fluids / rolling oils- ProfessionalHigh Environmental Release

Uses - Worker
Title : Use as binders and release agents- Industrial

Uses - Worker
Title : Use as binders and release agents- Professional

Uses - Worker
Title : Use in Agrochemicals uses- Professional

Uses - Worker
Title : Use as a fuel- Industrial

Uses - Worker
Title : Use as a fuel- Professional

Uses - Worker
Title : Functional Fluids- Industrial

Uses - Worker
Title : Functional Fluids- Professional

Uses - Worker
Title : Road and construction applications- Professional

Uses - Worker
Title : Use in laboratories- Industrial

Uses - Worker
Title : Use in laboratories- Professional

Uses - Worker
Title : Use in explosives- Professional

Uses - Worker
Title : Rubber production and processing- Industrial

Uses - Worker
Title : Polymer processing- Industrial

Uses - Worker
Title : Polymer processing- Professional

Uses - Worker
Title : Water treatment chemicals- Industrial

Uses - Worker
Title : Water treatment chemicals- Professional

Uses - Worker
Title : Mining chemicals- Industrial

Identified Uses according to the Use Descriptor System
Uses - Consumer
Title : Uses in Coatings
- Consumer

Uses - Consumer
Title : Use in Cleaning Agents
- Consumer

Uses - Consumer
Title : Lubricants
- Consumer
Low Environmental Release
High Environmental Release

Uses - Consumer
Title : Use in Agrochemicals uses
- Consumer

Uses - Consumer
Title : Use as a fuel
- Consumer

Uses - Consumer
Title : Functional Fluids
- Consumer

Uses - Consumer
Title : Other Consumer Uses
- Consumer

Uses - Consumer
Title : Water treatment chemicals
- Consumer

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.

Exposure Scenario - Worker

300000010600	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Manufacture of substance- Industrial
Use Descriptor	**Sector of Use**: SU3, SU8, SU9 **Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC15 **Environmental Release Categories**: ERC1, ERC4, ESVOC SpERC 1.1.v1
Scope of process	Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	EXPOSURE ESTIMATION

Section 3.1 - Health

Not applicable.
Risk Management Measures are based on qualitative risk characterisation.

Section 3.2 -Environment

Not applicable.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

Not applicable.

Section 4.2 -Environment

Not applicable.

Exposure Scenario - Worker

300000010601	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Distribution of substance- Industrial
Use Descriptor	**Sector of Use**: SU3, SU8, SU9 **Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15 **Environmental Release Categories**: ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC6d, ERC7, ESVOC SpERC 1.1b.v1
Scope of process	Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading distribution and associated laboratory activities.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	EXPOSURE ESTIMATION

Section 3.1 - Health

Not applicable.
Risk Management Measures are based on qualitative risk characterisation.

Section 3.2 -Environment

Not applicable.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

Not applicable.

Section 4.2 -Environment

Not applicable.

Exposure Scenario - Worker

300000010602	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Formulation & (re)packing of substances and mixtures-Industrial
Use Descriptor	**Sector of Use**: SU3, SU10 **Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15 **Environmental Release Categories**: ERC2, ESVOC SpERC 2.2.v1
Scope of process	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.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**

Not applicable.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
Not applicable. Risk Management Measures are based on qualitative risk characterisation.	

Section 3.2 -Environment
Not applicable.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Not applicable.	

Section 4.2 -Environment
Not applicable.

Exposure Scenario - Worker

300000010603	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Uses in Coatings- Industrial
Use Descriptor	**Sector of Use**: SU3 **Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15 **Environmental Release Categories**: ERC4, ESVOC SpERC 4.3a.v1
Scope of process	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, spreader, dip, flow, fluidised bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
Not applicable. Risk Management Measures are based on qualitative risk characterisation.	

Section 3.2 -Environment
Not applicable.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Not applicable.	

Section 4.2 -Environment
Not applicable.

Exposure Scenario - Worker

300000010604	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Uses in Coatings- Professional
Use Descriptor	**Sector of Use**: SU22 **Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC15, PROC19 **Environmental Release Categories**: ERC8a, ERC8d, ESVOC SpERC 8.3b.v1
Scope of process	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, brush, spreader by hand or similar methods, and film formation), and equipment cleaning, maintenance and associated laboratory activities.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
Not applicable. Risk Management Measures are based on qualitative risk characterisation.	

Section 3.2 -Environment
Not applicable.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Not applicable.	

Section 4.2 -Environment
Not applicable.

Exposure Scenario - Worker

300000010605	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Use in Cleaning Agents- Industrial
Use Descriptor	**Sector of Use**: SU3 **Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC10, PROC13 **Environmental Release Categories**: ERC4, ESVOC SpERC 4.4a.v1
Scope of process	Covers the use as a component of cleaning products including transfer from storage, pouring/unloading from drums or containers. Exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**

Not applicable.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
Not applicable. Risk Management Measures are based on qualitative risk characterisation.	

Section 3.2 -Environment
Not applicable.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Not applicable.	

Section 4.2 -Environment
Not applicable.

Exposure Scenario - Worker

300000010606	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Use in Cleaning Agents- Professional
Use Descriptor	**Sector of Use**: SU22 **Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC19 **Environmental Release Categories**: ERC8a, ERC8d, ESVOC SpERC 8.4b.v1
Scope of process	Covers the use as a component of cleaning products including pouring/unloading from drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping automated and by hand).

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	EXPOSURE ESTIMATION

Section 3.1 - Health

Not applicable.
Risk Management Measures are based on qualitative risk characterisation.

Section 3.2 -Environment

Not applicable.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

Not applicable.

Section 4.2 -Environment

Not applicable.

Exposure Scenario - Worker

300000010632	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Use in Oil and Gas field drilling and production operations-Industrial
Use Descriptor	**Sector of Use**: SU3 **Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b **Environmental Release Categories**: ERC4, ESVOC SpERC 4.5a.v1
Scope of process	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.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	EXPOSURE ESTIMATION

Section 3.1 - Health

Not applicable.
Risk Management Measures are based on qualitative risk characterisation.

Section 3.2 -Environment

Not applicable.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

Not applicable.

Section 4.2 -Environment

Not applicable.

Exposure Scenario - Worker

300000010635	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Use in Oil and Gas field drilling and production operations-Professional
Use Descriptor	**Sector of Use**: SU22 **Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b **Environmental Release Categories**: ERC8d, ESVOC SpERC 8.5b.v1
Scope of process	Oil field well drilling operations (including drilling muds and well cleaning) including material transfers, on-site formulation, well head operations, shaker room activities and related maintenance.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	EXPOSURE ESTIMATION

Section 3.1 - Health

Not applicable.
Risk Management Measures are based on qualitative risk characterisation.

Section 3.2 -Environment

Not applicable.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

Not applicable.

Section 4.2 -Environment

Not applicable.

Exposure Scenario - Worker

300000010609	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Lubricants- Industrial
Use Descriptor	**Sector of Use**: SU3 **Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC17, PROC18 **Environmental Release Categories**: ERC4, ERC7, ESVOC SpERC 4.6a.v1
Scope of process	Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of machinery/engines and similar articles, reworking on reject articles, equipment maintenance and disposal of wastes.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	EXPOSURE ESTIMATION

Section 3.1 - Health

Not applicable.
Risk Management Measures are based on qualitative risk characterisation.

Section 3.2 -Environment

Not applicable.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

Not applicable.

Section 4.2 -Environment

Not applicable.

Exposure Scenario - Worker

300000010610	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Lubricants- ProfessionalLow Environmental ReleaseHigh Environmental Release
Use Descriptor	**Sector of Use**: SU22 **Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC17, PROC18, PROC20 **Environmental Release Categories**: ERC8a, ERC8d, ERC9a, ERC9b, ESVOC SpERC 8.6c.v1, ESVOC SpERC 9.6b.v1
Scope of process	Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of engines and similar articles, reworking on reject articles, equipment maintenance and disposal of waste oil.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
Not applicable. Risk Management Measures are based on qualitative risk characterisation.	

Section 3.2 -Environment
Not applicable.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Not applicable.	

Section 4.2 -Environment
Not applicable.

Exposure Scenario - Worker

300000010612	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Metal working fluids / rolling oils- Industrial
Use Descriptor	**Sector of Use**: SU3 **Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC17 **Environmental Release Categories**: ERC4, ESVOC SpERC 4.7a.v1
Scope of process	Covers the use in formulated MWFs/rolling oils including transfer operations, rolling and annealing activities, cutting/machining activities, automated and manual application of corrosion protections (including brushing, dipping and spraying), equipment maintenance, draining and disposal of waste oils.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
Not applicable. Risk Management Measures are based on qualitative risk characterisation.	

Section 3.2 -Environment
Not applicable.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Not applicable.	

Section 4.2 -Environment
Not applicable.

Exposure Scenario - Worker

300000010613	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Metal working fluids / rolling oils- ProfessionalHigh Environmental Release
Use Descriptor	**Sector of Use**: SU22 **Process Categories**: PROC1, PROC2, PROC3, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC17 **Environmental Release Categories**: ERC8a, ERC8d, ESVOC SpERC 8.7c.v1
Scope of process	Covers the use in formulated MWFs including transfer operations, open and contained cutting/machining activities, automated and manual application of corrosion protections, draining and working on contaminated/ reject articles, and disposal of waste oils.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
Not applicable. Risk Management Measures are based on qualitative risk characterisation.	

Section 3.2 -Environment
Not applicable.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Not applicable.	

Section 4.2 -Environment
Not applicable.

Exposure Scenario - Worker

300000010614	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Use as binders and release agents- Industrial
Use Descriptor	**Sector of Use**: SU3 **Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC6, PROC7, PROC8a, PROC8b, PROC10, PROC13, PROC14 **Environmental Release Categories**: ERC4, ESVOC SpERC 4.10a.v1
Scope of process	Covers the use as binders and release agents including material transfers, mixing, application (including spraying and brushing), mould forming and casting, and handling of waste.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	EXPOSURE ESTIMATION

Section 3.1 - Health

Not applicable.
Risk Management Measures are based on qualitative risk characterisation.

Section 3.2 -Environment

Not applicable.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

Not applicable.

Section 4.2 -Environment

Not applicable.

Exposure Scenario - Worker

300000010615	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Use as binders and release agents- Professional
Use Descriptor	**Sector of Use**: SU22 **Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC6, PROC8a, PROC8b, PROC10, PROC11, PROC14 **Environmental Release Categories**: ERC8a, ERC8d, ESVOC SpERC 8.10b.v1
Scope of process	Covers the use as binders and release agents including material transfers, mixing, application by spraying, brushing, and handling of waste.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	**EXPOSURE ESTIMATION**

Section 3.1 - Health
Not applicable. Risk Management Measures are based on qualitative risk characterisation.

Section 3.2 -Environment
Not applicable.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Not applicable.	

Section 4.2 -Environment
Not applicable.

Exposure Scenario - Worker

300000010616	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Use in Agrochemicals uses- Professional
Use Descriptor	**Sector of Use**: SU22 **Process Categories**: PROC1, PROC2, PROC4, PROC8a, PROC8b, PROC11, PROC13 **Environmental Release Categories**: ERC8a, ERC8d, ESVOC SpERC 8.11a.v1
Scope of process	Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging; including equipment clean-downs and disposal.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
Not applicable. Risk Management Measures are based on qualitative risk characterisation.	

Section 3.2 -Environment
Not applicable.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

Not applicable.

Section 4.2 -Environment

Not applicable.

Exposure Scenario - Worker

300000010618	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Use as a fuel- Industrial
Use Descriptor	**Sector of Use**: SU3 **Process Categories**: PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16 **Environmental Release Categories**: ERC7, ESVOC SpERC 7.12a.v1
Scope of process	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	**EXPOSURE ESTIMATION**

Section 3.1 - Health
Not applicable. Risk Management Measures are based on qualitative risk characterisation.

Section 3.2 -Environment
Not applicable.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Not applicable.	

Section 4.2 -Environment
Not applicable.

Exposure Scenario - Worker

300000010619	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Use as a fuel- Professional
Use Descriptor	**Sector of Use**: SU22 **Process Categories**: PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16 **Environmental Release Categories**: ERC9a, ERC9b, ESVOC SpERC 9.12b.v1
Scope of process	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	**EXPOSURE ESTIMATION**

Section 3.1 - Health
Not applicable. Risk Management Measures are based on qualitative risk characterisation.

Section 3.2 -Environment
Not applicable.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Not applicable.	

Section 4.2 -Environment
Not applicable.

Exposure Scenario - Worker

300000010621	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Functional Fluids- Industrial
Use Descriptor	**Sector of Use**: SU3 **Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9 **Environmental Release Categories**: ERC7, ESVOC SpERC 7.13a.v1
Scope of process	Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in industrial equipment including maintenance and related material transfers.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	**EXPOSURE ESTIMATION**

Section 3.1 - Health
Not applicable. Risk Management Measures are based on qualitative risk characterisation.

Section 3.2 -Environment
Not applicable.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Not applicable.	

Section 4.2 -Environment
Not applicable.

Exposure Scenario - Worker

300000010622	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Functional Fluids- Professional
Use Descriptor	**Sector of Use**: SU22 **Process Categories**: PROC1, PROC2, PROC3, PROC8a, PROC9, PROC20 **Environmental Release Categories**: ERC9a, ERC9b, ESVOC SpERC 9.13b.v1
Scope of process	Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in professional equipment including maintenance and related material transfers.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	EXPOSURE ESTIMATION

Section 3.1 - Health

Not applicable.
Risk Management Measures are based on qualitative risk characterisation.

Section 3.2 -Environment

Not applicable.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

Not applicable.

Section 4.2 -Environment

Not applicable.

Exposure Scenario - Worker

300000010623	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Road and construction applications- Professional
Use Descriptor	**Sector of Use**: SU22 **Process Categories**: PROC1, PROC2, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13 **Environmental Release Categories**: ERC8d, ERC8f, ESVOC SpERC 8.15.v1
Scope of process	Application of surface coatings and binders in road and construction activities, including paving uses, manual mastic and in the application of roofing and water-proofing membranes.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	EXPOSURE ESTIMATION

Section 3.1 - Health

Not applicable.
Risk Management Measures are based on qualitative risk characterisation.

Section 3.2 -Environment

Not applicable.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

Not applicable.

Section 4.2 -Environment

Not applicable.

Exposure Scenario - Worker

300000010625	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Use in laboratories- Industrial
Use Descriptor	**Sector of Use**: SU3 **Process Categories**: PROC15 **Environmental Release Categories**: ERC2, ERC4
Scope of process	Use of the substance within laboratory settings, including material transfers and equipment cleaning.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
Not applicable.	

Risk Management Measures are based on qualitative risk characterisation.

Section 3.2 -Environment
Not applicable.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Not applicable.	

Section 4.2 -Environment
Not applicable.

Exposure Scenario - Worker

300000010626	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Use in laboratories- Professional
Use Descriptor	**Sector of Use**: SU22 **Process Categories**: PROC15 **Environmental Release Categories**: ERC8a, ESVOC SpERC 8.17.v1
Scope of process	Use of small quantities within laboratory settings, including material transfers and equipment cleaning.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	

Not applicable. Risk Management Measures are based on qualitative risk characterisation.

Section 3.2 -Environment
Not applicable.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Not applicable.	

Section 4.2 -Environment
Not applicable.

Exposure Scenario - Worker

300000010637	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Use in explosives- Professional
Use Descriptor	**Sector of Use**: SU22 **Process Categories**: PROC1, PROC3, PROC5, PROC8a, PROC8b **Environmental Release Categories**: ERC8e
Scope of process	Covers exposures arising from the manufacture and use of slurry explosives (including materials transfer, mixing and charging) and equipment cleaning.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	**EXPOSURE ESTIMATION**

Section 3.1 - Health
Not applicable. Risk Management Measures are based on qualitative risk characterisation.

Section 3.2 -Environment
Not applicable.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Not applicable.	

Section 4.2 -Environment
Not applicable.

Exposure Scenario - Worker

300000010627	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Rubber production and processing- Industrial
Use Descriptor	**Sector of Use**: SU3, SU10 **Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC13, PROC14, PROC15, PROC21 **Environmental Release Categories**: ERC1, ERC4, ERC6d, ESVOC SpERC 4.19.v1
Scope of process	Manufacture of tyres and general rubber articles, including processing of raw (uncured) rubber, handling and mixing of rubber additives, vulcanising, cooling and finishing.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	EXPOSURE ESTIMATION

Section 3.1 - Health

Not applicable.
Risk Management Measures are based on qualitative risk characterisation.

Section 3.2 -Environment

Not applicable.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

Not applicable.

Section 4.2 -Environment

Not applicable.

Exposure Scenario - Worker

300000010628	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Polymer processing- Industrial
Use Descriptor	**Sector of Use**: SU10 **Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC13, PROC14, PROC21 **Environmental Release Categories**: ERC4, ESVOC SpERC 4.21a.v1
Scope of process	Processing of formulated polymers including material transfers, additives handling (e.g. pigments, stabilisers, fillers, plasticisers, etc.), moulding, curing and forming activities, material re-works, storage and associated maintenance.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	EXPOSURE ESTIMATION

Section 3.1 - Health

Not applicable.
Risk Management Measures are based on qualitative risk characterisation.

Section 3.2 -Environment

Not applicable.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

Not applicable.

Section 4.2 -Environment

Not applicable.

Exposure Scenario - Worker

300000010629	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Polymer processing- Professional
Use Descriptor	**Sector of Use**: SU22 **Process Categories**: PROC1, PROC2, PROC6, PROC8a, PROC8b, PROC14, PROC21 **Environmental Release Categories**: ERC8a, ERC8d, ESVOC SpERC 8.21b.v1
Scope of process	Processing of formulated polymers including material transfers, moulding and forming activities, material re-works and associated maintenance.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	**EXPOSURE ESTIMATION**

Section 3.1 - Health
Not applicable. Risk Management Measures are based on qualitative risk characterisation.

Section 3.2 -Environment
Not applicable.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Not applicable.	

Section 4.2 -Environment
Not applicable.

Exposure Scenario - Worker

300000010630	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Water treatment chemicals- Industrial
Use Descriptor	**Sector of Use**: SU3 **Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC13 **Environmental Release Categories**: ERC3, ERC4, ESVOC SpERC 3.22a.v1
Scope of process	Covers the use of the substance for the treatment of water in open and closed systems.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	**EXPOSURE ESTIMATION**

Section 3.1 - Health
Not applicable. Risk Management Measures are based on qualitative risk characterisation.

Section 3.2 -Environment
Not applicable.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Not applicable.	

Section 4.2 -Environment
Not applicable.

Exposure Scenario - Worker

300000010631	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Water treatment chemicals- Professional
Use Descriptor	**Sector of Use**: SU22 **Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC13 **Environmental Release Categories**: ERC8f, ESVOC SpERC 8.22b.v1
Scope of process	Covers the use of the substance for the treatment of water in open and closed systems.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	**EXPOSURE ESTIMATION**

Section 3.1 - Health
Not applicable. Risk Management Measures are based on qualitative risk characterisation.

Section 3.2 -Environment
Not applicable.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Not applicable.	

Section 4.2 -Environment
Not applicable.

Exposure Scenario - Worker

300000010633	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Mining chemicals- Industrial
Use Descriptor	**Sector of Use**: SU3 **Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9 **Environmental Release Categories**: ERC4, ESVOC SpERC 4.23.v1
Scope of process	Covers the use of the substance in extraction processes at mining operations, including material transfers, winning and separation activities, and substance recovery and disposal.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	**EXPOSURE ESTIMATION**

Section 3.1 - Health
Not applicable. Risk Management Measures are based on qualitative risk characterisation.

Section 3.2 -Environment
Not applicable.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Not applicable.	

Section 4.2 -Environment
Not applicable.

Exposure Scenario - Consumer

300000010607	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Uses in Coatings - Consumer
Use Descriptor	**Sector of Use**: SU21 **Product Categories**: PC1, PC4, PC8 (excipient only), PC9a, PC9b, PC9c, PC15, PC18, PC23, PC24, PC31, PC34 **Environmental Release Categories**: ERC8a, ERC8d, ESVOC SpERC 8.3c.v1
Scope of process	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including product transfer and preparation, application by brush, spray by hand or similar methods) and equipment cleaning.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Consumer Exposure**
Product Characteristics	

Product Categories	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
Not applicable. Risk Management Measures are based on qualitative risk characterisation.	

Section 3.2 -Environment
Not applicable.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

Not applicable.

Section 4.2 -Environment

Not applicable.

Exposure Scenario - Consumer

300000010608	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Use in Cleaning Agents - Consumer
Use Descriptor	**Sector of Use**: SU21 **Product Categories**: PC3, PC4, PC8 (excipient only), PC9a, PC9b, PC9c, PC24, PC35, PC38 **Environmental Release Categories**: ERC8a, ERC8d, ESVOC SpERC 8.4c.v1
Scope of process	Covers general exposures to consumers arising from the use of household products sold as washing and cleaning products, aerosols, coatings, de-icers, lubricants and air care products.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Consumer Exposure**
Product Characteristics	

Product Categories	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
Not applicable. Risk Management Measures are based on qualitative risk characterisation.	

Section 3.2 -Environment
Not applicable.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

Not applicable.

Section 4.2 -Environment

Not applicable.

Exposure Scenario - Consumer

300000010611	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Lubricants - Consumer Low Environmental Release High Environmental Release
Use Descriptor	**Sector of Use**: SU21 **Product Categories**: PC1, PC24, PC31 **Environmental Release Categories**: ERC8a, ERC8d, ERC9a, ERC9b, ESVOC SpERC 8.6e.v1, ESVOC SpERC 9.6d.v1
Scope of process	Covers the consumer use of formulated lubricants in closed and open systems including transfer operations, application, operation of engines and similar articles, equipment maintenance and disposal of waste oil.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Consumer Exposure**
Product Characteristics	

Product Categories	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
Not applicable. Risk Management Measures are based on qualitative risk characterisation.	

Section 3.2 -Environment
Not applicable.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

Not applicable.

Section 4.2 -Environment

Not applicable.

Exposure Scenario - Consumer

300000010617	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Use in Agrochemicals uses - Consumer
Use Descriptor	**Sector of Use**: SU21 **Product Categories**: PC8 (excipient only), PC12, PC27 **Environmental Release Categories**: ERC8a, ERC8d, ESVOC SpERC 8.11b.v1
Scope of process	Covers the consumer use in agrochemicals in liquid and solid forms.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Consumer Exposure**
Product Characteristics	

Product Categories	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
Not applicable. Risk Management Measures are based on qualitative risk characterisation.	

Section 3.2 -Environment
Not applicable.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	

Not applicable.

Section 4.2 -Environment
Not applicable.

Exposure Scenario - Consumer

300000010620	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Use as a fuel - Consumer
Use Descriptor	**Sector of Use**: SU21 **Product Categories**: PC13 **Environmental Release Categories**: ERC9a, ERC9b, ESVOC SpERC 9.12c.v1
Scope of process	Covers consumer uses in liquid fuels.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Consumer Exposure**
Product Characteristics	

Product Categories	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
Not applicable. Risk Management Measures are based on qualitative risk characterisation.	

Section 3.2 -Environment
Not applicable.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Not applicable.	

Section 4.2 -Environment
Not applicable.

Exposure Scenario - Consumer

300000010636	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Functional Fluids - Consumer
Use Descriptor	**Sector of Use**: SU21 **Product Categories**: PC16, PC17 **Environmental Release Categories**: ERC9a, ERC9b, ESVOC SpERC 9.13c.v1
Scope of process	Use of sealed items containing functional fluids e.g. transfer oils, hydraulic fluids, refrigerants.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Consumer Exposure**
Product Characteristics	

Product Categories	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
Not applicable. Risk Management Measures are based on qualitative risk characterisation.	

Section 3.2 -Environment
Not applicable.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	

Not applicable.

Section 4.2 -Environment
Not applicable.

Exposure Scenario - Consumer

300000010624	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Other Consumer Uses - Consumer
Use Descriptor	**Sector of Use**: SU21 **Product Categories**: PC28, PC39 **Environmental Release Categories**: ERC8a, ERC8d, ESVOC SpERC 8.16.v1
Scope of process	Consumer uses e.g. as a carrier in cosmetics/personal care products, perfumes and fragrances. Note: For cosmetic and personal care products, risk assessment only required for the environment under REACH as human health is covered by alternative legislation.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Consumer Exposure**
Product Characteristics	

Product Categories	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
Not applicable. Risk Management Measures are based on qualitative risk characterisation.	

Section 3.2 -Environment
Not applicable.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

Not applicable.

Section 4.2 -Environment

Not applicable.

Exposure Scenario - Consumer

300000010638	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Water treatment chemicals - Consumer
Use Descriptor	**Sector of Use**: SU21 **Product Categories**: PC36, PC37 **Environmental Release Categories**: ERC8f, ESVOC SpERC 8.22c.v1
Scope of process	Covers the use of the substance for the treatment of water in open and closed systems.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Consumer Exposure**
Product Characteristics	

Product Categories	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**
General measures (Aspiration)	The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance

Section 2.2	**Control of Environmental Exposure**
Not applicable.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
Not applicable. Risk Management Measures are based on qualitative risk characterisation.	

Section 3.2 -Environment
Not applicable.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	

Not applicable.

Section 4.2 -Environment
Not applicable.