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

1.1 Product identifier

Trade name : Shell Isoparaffins WS190

Product code : Q6569

Registration number EU : 01-2120083063-63-0000

Synonyms : Hydrocarbons C10-C13, n-alkanes, isoalkanes, <2% aromat-

ics

CAS-No. : 185857-36-7

EC-No. : 940-726-3

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

Use of the Sub- : Solvent.

stance/Mixture Please refer to section 16 and/or the annexes for the regis-

tered 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

Contact for Safety Data : sccmsds@shell.com

Sheet

1.4 Emergency telephone number

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

week)

Poison Center Information: +358 9 471 977 (24h)

1.5 Other information

KT code : 48 Solvents

TOL code : 246 Production of other chemical products

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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 air-

ways.

Supplemental Hazard Statements EUH066: Repeated exposure may cause skin dry-

ness or cracking.

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 action to prevent static discharges.

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.

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2.3 Other hazards

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

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 airvapour mixtures can occur.

SECTION 3: Composition/information on ingredients

3.1 Substances

Components

| Chemical name | CAS-No. EC-No. | Concentration (% w/w) |
|-------------------------------------|--------------------------|-----------------------|
| Alkanes, C10-13-branched and linear | 185857-36-7 940-726-3 | 100 |

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 wa-

ter 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.

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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 con-

ditions of use.

Possible respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, cough-

ing, and/or difficulty breathing.

No specific hazards under normal use conditions.

Skin irritation signs and symptoms may include a burning sen-

sation, redness, or swelling.

No specific hazards under normal use conditions.

Eye irritation signs and symptoms may include a burning sen-

sation, 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 burn-

ing 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 diox-

ide, 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 fire-

fighting

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).

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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 meth-

ods

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 unpro-

tected 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 unpro-

tected 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

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example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bond-

ing and grounding (earthing) all equipment. Monitor area with combustible gas indicator.

6.3 Methods and material 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 spe-

cialist 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

7.1 Precautions for safe handling

Technical measures : 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

Ensure that all local regulations regarding handling and stor-

age facilities are followed.

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

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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.

Wash hands before eating, drinking, smoking and using the Hygiene measures

toilet. Launder contaminated clothing before re-use. Do not ingest. If swallowed, then seek immediate medical assistance.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

Refer to section 15 for any additional specific legislation cov-

ering the packaging and storage of this product.

Further information on storage stability

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 flamma-

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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 section 16 and/or the annexes for the regis-

tered 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 | Not As- signed | 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:

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

| Substance name | | Environmental Compartment | Value |
|------------------------|--|---|----------------------|
| Alkanes, C10-13-branch | ned and | | |
| linear | | | |
| Remarks: | Substance | e is a hydrocarbon with a complex, unknown or | variable composi- |
| | tion. Conv | rentional methods of deriving PNECs are not a | ppropriate and it is |
| | not possible to identify a single representative PNEC for such substances. | | |

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.

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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 com-

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position 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 amplayed skin ears programmed.

ard, 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 appro-

priate 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.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : liquid

Colour : colourless

Odour : Hydrocarbon

Odour Threshold : Data not available

Melting / freezing point : Data not available

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Boiling point/boiling range : 180 - 230 °C

Flammability

Flammability (solid, gas) : Not applicable

Lower explosion limit and upper explosion limit / flammability limit

Upper explosion limit / upper flammability limit

: 7 %(V)

Lower explosion limit / Lower flammability limit

: 0,5 %(V)

61 °C

Auto-ignition temperature : > 200 °C

Decomposition temperature

Decomposition tempera-

ture

Flash point

: Data not available

pH : Not applicable

Viscosity

Viscosity, dynamic : Data not available

Viscosity, kinematic : < 2 mm2/s (25 °C)

Method: ASTM D445

Solubility(ies)

Water solubility : insoluble

Partition coefficient: n-

octanol/water

log Pow: 4,5 - 7

Vapour pressure : Data not available (50 °C)

Relative density : < 0,8

Method: ASTM D4052

Density : < 800 kg/m3 (15 °C)

Method: ASTM D4052

Relative vapour density : Data not available

Particle characteristics

Particle size : Data not available

9.2 Other information

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Explosives : Not classified

Classification Code: Not classified

Oxidizing properties : Not applicable

Evaporation rate : Data not available

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 400 a 20 a and is associated description.

ductivity 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

Surface tension : Data not available

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 elec-

tricity.

10.5 Incompatible materials

Materials to avoid : Strong oxidising agents.

10.6 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 or-

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ganic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Information on likely routes of : Exposure may occur via inhalation, ingestion, skin absorption,

exposure skin or eye contact, and accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity : LD 50 (Rat, male and female): > 5.000 mg/kg

Method: OECD Test Guideline 401

Remarks: Based on available data, the classification criteria

are not met.

Acute inhalation toxicity : LC 50 (Rat, male and female): > 2 -<= 10 mg/l

Exposure time: 4 h
Test atmosphere: vapour

Method: Test(s) equivalent or similar to OECD Test Guideline

403

Remarks: LC50 greater than near-saturated vapour concen-

tration.

Based on available data, the classification criteria are not met.

Acute dermal toxicity : LD 50 (Rat, male and female): > 2.000 mg/kg

Method: Test(s) equivalent or similar to OECD Test Guideline

402

Remarks: Based on available data, the classification criteria

are not met.

Components:

Alkanes, C10-13-branched and linear:

Acute oral toxicity : LD 50 (Rat, male and female): > 5.000 mg/kg

Method: OECD Test Guideline 401

Remarks: Based on available data, the classification criteria

are not met.

Acute inhalation toxicity : LC 50 (Rat, male and female): > 2 -<= 10 mg/l

Exposure time: 4 h
Test atmosphere: vapour

Method: Test(s) equivalent or similar to OECD Test Guideline

403

Remarks: LC50 greater than near-saturated vapour concen-

tration.

Based on available data, the classification criteria are not met.

Acute dermal toxicity : LD 50 (Rat, male and female): > 2.000 mg/kg

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Method: Test(s) equivalent or similar to OECD Test Guideline

402

Remarks: Based on available data, the classification criteria

are not met.

Skin corrosion/irritation

Product:

Species : Rabbit

Method : Test(s) equivalent or similar to OECD Test Guideline 404 Remarks : Moderately irritating to skin (but insufficient to classify).

Prolonged/repeated contact may cause defatting of the skin

which can lead to dermatitis.

Components:

Alkanes, C10-13-branched and linear:

Species : Rabbit

Method : Test(s) equivalent or similar to OECD Test Guideline 404 Remarks : Moderately irritating to skin (but insufficient to classify).

Prolonged/repeated contact may cause defatting of the skin

which can lead to dermatitis.

Serious eye damage/eye irritation

Product:

Species : Rabbit

Method : OECD Test Guideline 405

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

Components:

Alkanes, C10-13-branched and linear:

Species : Rabbit

Method : OECD Test Guideline 405

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

Respiratory or skin sensitisation

Product:

Species : Guinea pig

Method : OECD Test Guideline 406

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

Components:

Alkanes, C10-13-branched and linear:

Species : Guinea pig

Method : OECD Test Guideline 406

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

Germ cell mutagenicity

Product:

Genotoxicity in vitro : Method: Test(s) equivalent or similar to OECD Guideline 471

Remarks: Based on available data, the classification criteria

are not met.

Method: Test(s) equivalent or similar to OECD Test Guideline

473

Remarks: Based on available data, the classification criteria

are not met.

Method: Test(s) equivalent or similar to OECD Test Guideline

476

Remarks: Based on available data, the classification criteria

are not met.

Genotoxicity in vivo : Species: Mouse

Method: Test(s) equivalent or similar to OECD Test Guideline

474

Remarks: Based on available data, the classification criteria

are not met.

Germ cell mutagenicity- As-

sessment

This product does not meet the criteria for classification in

categories 1A/1B.

Components:

Alkanes, C10-13-branched and linear:

Genotoxicity in vitro : Method: Test(s) equivalent or similar to OECD Guideline 471

Remarks: Based on available data, the classification criteria

are not met.

Method: Test(s) equivalent or similar to OECD Test Guideline

473

Remarks: Based on available data, the classification criteria

are not met.

Method: Test(s) equivalent or similar to OECD Test Guideline

476

Remarks: Based on available data, the classification criteria

are not met.

Genotoxicity in vivo : Species: Mouse

Method: Test(s) equivalent or similar to OECD Test Guideline

474

Remarks: Based on available data, the classification criteria

are not met.

Germ cell mutagenicity- As- : This product does not meet the criteria for classification in

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sessment categories 1A/1B.

Carcinogenicity

Product:

Species : Rat, male and female

Application Route : Inhalation

Method : Test(s) equivalent or similar to OECD Test Guideline 453
Remarks : Weight of evidence does not support classification as a car-

cinogen

Species : Mouse, male and female

Application Route : Inhalation

Method : Test(s) equivalent or similar to OECD Test Guideline 453
Remarks : Weight of evidence does not support classification as a car-

cinogen

Carcinogenicity - Assess-

ment

This product does not meet the criteria for classification in

categories 1A/1B.

Components:

Alkanes, C10-13-branched and linear:

Species : Rat, male and female

Application Route : Inhalation

Method : Test(s) equivalent or similar to OECD Test Guideline 453
Remarks : Weight of evidence does not support classification as a car-

cinogen

Species : Mouse, male and female

Application Route : Inhalation

Method : Test(s) equivalent or similar to OECD Test Guideline 453
Remarks : Weight of evidence does not support classification as a car-

cinogen

Carcinogenicity - Assess-

ment

This product does not meet the criteria for classification in

categories 1A/1B.

| Material | GHS/CLP Carcinogenicity Classification |
|-------------------------------------|--|
| Alkanes, C10-13-branched and linear | No carcinogenicity classification. |

Reproductive toxicity

Product:

Effects on fertility : Species: Rat

Sex: male and female Application Route: Oral

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Method: OECD Test Guideline 416

Remarks: Based on available data, the classification criteria

are not met.

Reproductive toxicity - As-

sessment

This product does not meet the criteria for classification in

categories 1A/1B.

Components:

Alkanes, C10-13-branched and linear:

Effects on fertility : Species: Rat

Sex: male and female Application Route: Oral

Method: OECD Test Guideline 416

Remarks: Based on available data, the classification criteria

are not met.

Reproductive toxicity - As-

sessment

This product does not meet the criteria for classification in

categories 1A/1B.

STOT - single exposure

Product:

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

Components:

Alkanes, C10-13-branched and linear:

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

STOT - repeated exposure

Product:

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

Components:

Alkanes, C10-13-branched and linear:

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

Repeated dose toxicity

Product:

Species : Rat, male and female

Application Route : Oral

Method : Test(s) equivalent or similar to OECD Test Guideline 408

Target Organs : No specific target organs noted

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Species : Rat, male and female

Application Route : Inhalation Test atmosphere : vapour

Method : Test(s) equivalent or similar to OECD Test Guideline 413

Target Organs : No specific target organs noted

Components:

Alkanes, C10-13-branched and linear:

Species : Rat, male and female

Application Route : Oral

Method : Test(s) equivalent or similar to OECD Test Guideline 408

Target Organs : No specific target organs noted

Species : Rat, male and female

Application Route : Inhalation Test atmosphere : vapour

Method : Test(s) equivalent or similar to OECD Test Guideline 413

Target Organs : No specific target organs noted

Aspiration toxicity

Product:

Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

Components:

Alkanes, C10-13-branched and linear:

Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

11.2 Information on other hazards

Further information

Product:

Remarks : Classifications by other authorities under varying regulatory

frameworks may exist.

Components:

Alkanes, C10-13-branched and linear:

Remarks : Classifications by other authorities under varying regulatory

frameworks may exist.

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SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): > 1.000 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203 Remarks: Practically non toxic: LL/EL/IL50 > 100 mg/l

Toxicity to daphnia and other :

aquatic invertebrates

EL50 (Daphnia magna (Water flea)): > 1.000 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202 Remarks: Practically non toxic: LL/EL/IL50 > 100 mg/l

Toxicity to algae/aquatic plants : EL50 (Pseudokirchneriella subcapitata (algae)): > 1.000 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201 Remarks: Practically non toxic: LL/EL/IL50 > 100 mg/l

Toxicity to fish (Chronic tox-

icity)

Remarks: Data not available

Toxicity to daphnia and other :

aquatic invertebrates (Chron-

ic toxicity)

Remarks: Data not available

Toxicity to microorganisms

Remarks: Data not available

Components:

Alkanes, C10-13-branched and linear:

Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): > 1.000 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203 Remarks: Practically non toxic: LL/EL/IL50 > 100 mg/l

Toxicity to daphnia and other :

aquatic invertebrates

EL50 (Daphnia magna (Water flea)): > 1.000 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202 Remarks: Practically non toxic:

LL/EL/IL50 > 100 mg/l

Toxicity to algae/aquatic plants : EL50 (Pseudokirchneriella subcapitata (algae)): > 1.000 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

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Remarks: Practically non toxic:

LL/EL/IL50 > 100 mg/l

Toxicity to microorganisms

Remarks: Data not available

Toxicity to fish (Chronic tox-

icity)

Remarks: Data not available

Toxicity to daphnia and other :

aquatic invertebrates (Chron-

ic toxicity)

Remarks: Data not available

12.2 Persistence and degradability

Product:

Biodegradability : Biodegradation: 80 %

Exposure time: 28 d

Method: OECD Test Guideline 301F Remarks: Readily biodegradable.

Oxidises rapidly by photo-chemical reactions in air.

Components:

Alkanes, C10-13-branched and linear:

Biodegradability : Biodegradation: 80 %

Exposure time: 28 d

Method: OECD Test Guideline 301F Remarks: Readily biodegradable.

Oxidises rapidly by photo-chemical reactions in air.

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Has the potential to bioaccumulate.

Components:

Alkanes, C10-13-branched and linear:

Bioaccumulation : Remarks: Has the potential to bioaccumulate.

12.4 Mobility in soil

Product:

Mobility : Remarks: Floats on water., If it enters soil, it will adsorb to soil

particles and will not be mobile.

Components:

Alkanes, C10-13-branched and linear:

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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

Product:

Assessment : The substance does not fulfill all screening criteria for persis-

tence, bioaccumulation and toxicity and hence is not consid-

ered to be PBT or vPvB..

Components:

Alkanes, C10-13-branched and linear:

Assessment : The substance does not fulfill all screening criteria for persis-

tence, bioaccumulation and toxicity and hence is not consid-

ered to be PBT or vPvB..

12.6 Endocrine disrupting properties

no data available

12.7 Other adverse effects

no data available

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 meth-

ods 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

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 na-

tional requirements and must be complied with.

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MARPOL - see International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) which provides tech-

nical 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 or ID number

ADR : Not regulated as a dangerous good

RID : Not regulated as a dangerous good

IMDG : Not regulated as a dangerous good

IATA : Not regulated as a dangerous good

: Not regulated as a dangerous good

14.2 UN proper shipping name

ADR : Not regulated as a dangerous good

RID : Not regulated as a dangerous good

IMDG : Not regulated as a dangerous good

IATA : Not regulated as a dangerous good

: Not regulated as a dangerous good

14.3 Transport hazard class(es)

ADR : Not regulated as a dangerous good

RID : Not regulated as a dangerous good

IMDG : Not regulated as a dangerous good

IATA : Not regulated as a dangerous good

i Not regulated as a dangerous good

14.4 Packing group

ADR : Not regulated as a dangerous good

RID : Not regulated as a dangerous good

IMDG : Not regulated as a dangerous good

IATA : Not regulated as a dangerous good

: Not regulated as a dangerous good

14.5 Environmental hazards

ADR : Not regulated as a dangerous good

RID : Not regulated as a dangerous good

IMDG : Not regulated as a dangerous good

14.6 Special precautions for user

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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 Maritime transport in bulk according to IMO instruments

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 : F

(Annex XIV)

: Product is not subject to Authorisa-

tion 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.

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.

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SECTION 16: Other information

Full text of other abbreviations

EU HSPA : OEL based on European Hydrocarbon Solvents Producers

(CEFIC-HSPA) methodology.

EU HSPA / TWA : Time-Weighted Average Concentration (TWA) (8 hrs.)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA -European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI -Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Training advice : Provide adequate information, instruction and training for op-

erators.

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 consid-

ered to be PBT or vPvB.

A vertical bar () in the left margin indicates an amendment

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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- Indus-

trial

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 : Lubricants- Industrial

Uses - Worker

Title : Lubricants- ProfessionalLow Environmental ReleaseHigh Envi-

ronmental Release

Uses - Worker

Title : Metal working fluids / rolling oils- Industrial

Uses - Worker

Title : Metal working fluids / rolling oils- ProfessionalHigh Environ-

mental 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

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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 : 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

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

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Uses - Consumer

Title : Use in Agrochemicals uses

- Consumer

Uses - Consumer

Title : Use as a fuel

- Consumer

Uses - Consumer

Title : Other Consumer Uses

- Consumer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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Exposure Scenario - Worker

| Exposure Scenario - Worker | |
|----------------------------|---|
| 30000010600 | |
| 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. | | |

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| 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. | |

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Exposure Scenario - Worker

| Exposure ocenano - worker | |
|---------------------------|---|
| 30000010601 | |
| | |
| 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 |
| | 20100 002110 1115111 |
| 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 distribu- |
| | tion and associated laboratory activities. |
| | tion and accordated laboratory delivities. |
| | |

| 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 Sub- | Covers percentage substance in the product up to 100%., | |
| stance in Mixture/Article | 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. | | |

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| 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. | |

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Exposure Scenario - Worker

| 30000010602 | |
|------------------|--|
| SECTION 1 Title | EXPOSURE SCENARIO TITLE Formulation & (re)packing of substances and mixtures- Indus- |
| | trial |
| 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 |

| Control of Worker Exposure | |
|---|---|
| | |
| Liquid, vapour pressure < 0.5 kPa at STF |) |
| Covers percentage substance in the proc | duct up to 100%., |
| Unless stated otherwise., | |
| Use | |
| 8 hours (unless stated differently). | |
| ons affecting Exposure | |
| evated temperature (> 20°C above ambient | t temperature). |
| lard of occupational hygiene is implemented | d. |
| | Liquid, vapour pressure < 0.5 kPa at STF Covers percentage substance in the proc |

| 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 Exp | oosure |
|-------------|------------------------------|--------|
| | | |

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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.

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Exposure Scenario - Worker

| 30000010603 | |
|------------------|--|
| 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 Sub- | Covers percentage substance in the product up to 100%., | |
| stance in Mixture/Article | Unless stated otherwise., | |
| Frequency and Duration of Use | | |
| Covers daily exposures up t | o 8 hours (unless stated differently). | |
| Other Operational Condition | ons affecting Exposure | |
| | levated temperature (> 20°C above ambient temperature). dard 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 |

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| 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. | |

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Exposure Scenario - Worker

| Exposure Scenario - Work | 71 | |
|--------------------------|--|--|
| 30000010604 | | |
| 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 o | f Use |
| Covers daily exposures up t | o 8 hours (unless stated differently). |
| Other Operational Condition | ons affecting Exposure |
| | levated temperature (> 20°C above ambient temperature). dard 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 |

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| 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. | |

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| 30000010605 | |
|------------------|---|
| 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 STF |) |
| Concentration of the Substance in Mixture/Article | Covers percentage substance in the prod Unless stated otherwise., | luct up to 100%., |
| Frequency and Duration of | Use | |
| Covers daily exposures up to 8 hours (unless stated differently). | | |
| Other Operational Condition | ons 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 Exp | oosure |
|-------------|------------------------------|--------|
| | | - |

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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. | |

| I | Section 4.2 -Environment |
|---|--------------------------|
| | Not applicable. |

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| Exposure Scenario - Worker | |
|----------------------------|---|
| 30000010606 | |
| 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 Sub- | Covers percentage substance in the product up to 100%., | |
| stance in Mixture/Article | 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. | | |

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| 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. | |

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| Exposure Scenario - Worker | |
|----------------------------|--|
| 30000010609 | |
| 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 Sub- | Covers percentage substance in the product up to 100%., | |
| stance in Mixture/Article | 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. | | |

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

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| 30000010610 | |
|------------------|--|
| 300000010010 | |
| 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 |

| Control of Worker Exposure | |
|--|--|
| | |
| Liquid, vapour pressure < 0.5 kPa at | STP |
| Covers percentage substance in the p | product up to 100%., |
| Unless stated otherwise., | |
| f Use | |
| o 8 hours (unless stated differently). | |
| ons affecting Exposure | |
| levated temperature (> 20°C above amb | ient temperature). |
| | |
| | Liquid, vapour pressure < 0.5 kPa at \$ Covers percentage substance in the punless stated otherwise., f Use 0 8 hours (unless stated differently). |

| 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 |

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| 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. | |

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| 30000010612 | |
|------------------|---|
| 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 Sub- | Covers percentage substance in the product up to 100%., | |
| stance in Mixture/Article | Unless stated otherwise., | |
| Frequency and Duration of Use | | |
| Covers daily exposures up t | o 8 hours (unless stated differently). | |
| Other Operational Conditions affecting Exposure | | |
| | levated temperature (> 20°C above ambient temperature). dard 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 |

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| 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. | |

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| Exposure Scenario - Wo | orker |
|------------------------|---|
| 30000010613 | |
| 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 Sub- | Covers percentage substance in the product up to 100%., |
| stance in Mixture/Article | Unless stated otherwise., |
| Frequency and Duration of | Use |
| Covers daily exposures up to | o 8 hours (unless stated differently). |
| Other Operational Condition | ons affecting Exposure |
| | evated temperature (> 20°C above ambient temperature). dard 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 |

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| 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. | |

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| 30000010614 | |
|------------------|---|
| 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 Sub- | Covers percentage substance in the product up to 100%., |
| stance in Mixture/Article | Unless stated otherwise., |
| Frequency and Duration of | Use |
| Covers daily exposures up to | o 8 hours (unless stated differently). |
| Other Operational Condition | ons affecting Exposure |
| | evated temperature (> 20°C above ambient temperature). lard 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. | | |

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| 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. | |

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| Exposure Scenario - wo | oi kei |
|------------------------|--|
| 30000010615 | |
| 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 |

| Control of Worker Exposure |
|---|
| |
| Liquid, vapour pressure < 0.5 kPa at STP |
| Covers percentage substance in the product up to 100%., |
| Unless stated otherwise., |
| f Use |
| o 8 hours (unless stated differently). |
| ons affecting Exposure |
| evated temperature (> 20°C above ambient temperature). |
| dard 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 |
|-------------------------------|
|-------------------------------|

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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. | |

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| 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 | |
|---|-----------------|-----------------------------------|--|
| ſ | 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 |
|-----------|---------------------------------------|

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| | EXPOSURE SCENARIO |
|----------------------|-------------------|
| Section 4.1 - Health | |
| Not applicable. | |

| Section 4.2 -Environment | |
|--------------------------|--|
| Not applicable. | |

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| 30000010618 | |
|------------------|---|
| 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 Sub- | Covers percentage substance in the product up to 100%., | |
| stance in Mixture/Article | 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 |
|-------------------------------|
|-------------------------------|

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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. | |

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| 30000010619 | |
|------------------|--|
| 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 |

| Control of Worker Exposure | | |
|--|---|--|
| | | |
| Liquid, vapour pressure < 0.5 kPa at STP | | |
| Covers percentage substance in the produ | uct 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. | | |
| | Liquid, vapour pressure < 0.5 kPa at STP Covers percentage substance in the produ Unless stated otherwise., f Use 0 8 hours (unless stated differently). ons affecting Exposure evated temperature (> 20°C above ambient | |

| 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 |
|-------------------------------|
|-------------------------------|

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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. | |

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| 30000010621 | |
|------------------|---|
| 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 Sub- | Covers percentage substance in the product up to 100%., | |
| stance in Mixture/Article | 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 |
|-------------------------------|
|-------------------------------|

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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. | |

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| 30000010622 | |
|------------------|---|
| 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 Sub- | Covers percentage substance in the product up to 100%., | |
| stance in Mixture/Article | 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 |
|-------------------------------|
|-------------------------------|

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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. | |

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| Exposure Scenario - Worker | |
|----------------------------|---|
| 30000010623 | |
| 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 Sub- | Covers percentage substance in the product up to 100%., | |
| stance in Mixture/Article | 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 |
|-------------------------------|
|-------------------------------|

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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. | |

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| Exposure occinario 111 | Exposure occitatio - 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 STF | • |
| Concentration of the Substance in Mixture/Article | Covers percentage substance in the prod Unless stated otherwise., | duct up to 100%., |
| 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. | |

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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.

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| 30000010626 | |
|------------------|---|
| 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 Sub- | Covers percentage substance in the product up to 100%., | |
| stance in Mixture/Article | Unless stated otherwise., | |
| Frequency and Duration o | f Use | |
| Covers daily exposures up t | o 8 hours (unless stated differently). | |
| Other Operational Condition | ons affecting Exposure | |
| | levated temperature (> 20°C above ambient temperature). dard 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. | |

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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. | |

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| 30000010627 | | |
|------------------|--|--|
| | | |
| 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 | f Use | |
| Covers daily exposures up to | o 8 hours (unless stated differently). | |
| Other Operational Condition | ons affecting Exposure | |
| | evated temperature (> 20°C above ambient temperature). dard of occupational hygiene is implemented. | |

| Contributing Scenarios | Risk Management Measures | |
|--|--|--|
| Contributing Scenarios 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. | | |

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| 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. | |

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| Exposure Scenario - Worker | | |
|----------------------------|--|--|
| 30000010628 | | |
| | | |
| 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 | |
| | T.2 10.V1 | |
| Scope of process | Processing of formulated polymers including material trans- | |
| a coope or process | fers, additives handling (e.g. pigments, stabilisers, fillers, | |
| | plasticisers, etc.), moulding, curing and forming activities, | |
| | material re-works, storage and associated maintenance. | |
| | 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 Sub- | Covers percentage substance in the product up to 100%., | |
| stance in Mixture/Article | 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. | | |

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| 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. | |

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Exposure Scenario - Worker

| 30000010629 | |
|------------------|--|
| 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. |

| OPERATIONAL CONDITIONS AND RISK MANAGEMENT |
|--|
| OPERATIONAL CONDITIONS AND RISK MANAGEMENT |
| MEAGUEEG |
| 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 Sub- | Covers percentage substance in the product up to 100%., | |
| stance in Mixture/Article | 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 |
|-------------------------------|
|-------------------------------|

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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. | |

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Exposure Scenario - Worker

| Exposure oceriano - Worker | |
|----------------------------|--|
| 30000010630 | |
| 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 stand | lard of occupational hygiene is implemented | d. |

| 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 | |

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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. | |

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Exposure Scenario - Worker

| 300000010631 | OTRO! |
|------------------|--|
| 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 | |

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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. | |

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| Exposure occinante | |
|--------------------|--|
| 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) in- cluding 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. | |

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

| Section 4.2 -Environment | |
|--------------------------|--|
| Not applicable. | |

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| 30000010608 | |
|------------------|---|
| 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. |

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

| Section 4.2 -Environment | |
|--------------------------|--|
| Not applicable. | |

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| | Exposure Scenario - Consumer | |
|------------------|--|--|
| 30000010611 | | |
| | T | |
| 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 mainte- | |
| | nance 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. | |
| | |

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

| Section 4.2 -Environment | |
|--------------------------|--|
| Not applicable. | |

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| 30000010617 | |
|------------------|---|
| 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 | |

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|----------------|------------------------------|-----------------------------|---|--|
| Not a | pplicable. | | | |
| | ion 4.2 -Environmen | t | | |

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| 30000010620 | |
|------------------|---|
| 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. | |

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| | | | |

| Section 4.2 -Environment | |
|--------------------------|--|
| Not applicable | |

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Exposure Scenario - Consumer

| 30000010624 | |
|------------------|---|
| 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 | |

Risk Management Measures are based on qualitative risk characterisation.

| Section 3.2 -Environment | |
|--------------------------|--|
| Not applicable. | |
| | |

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

| Section 4.2 -Environment | |
|--------------------------|--|
| Not applicable. | |