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

1.1 Product identifier

Trade name : AeroShell Grease 7

Product code : 001A0065

UFI : 8DH0-00HA-C00C-ESWV

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

Use of the : Synthetic grease for aircraft., For further details consult the

Substance/Mixture AeroShell Book on www.shell.com/aviation.

Uses advised against : This product must be used, handled and applied in

accordance with the requirements of the equipment

manufacturer's manuals, bulletins and other documentation. This product must not be used in applications other than those

listed in Section 1 without first seeking the advice of the

supplier.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier : Shell UK Oil Products Limited

Shell Centre London SE1 7NA United Kingdom

Telephone : (+44) 08007318888

Telefax

Email Contact for Safety Data

Sheet

If you have any enquiries about the content of this SDS

please email lubricantSDS@shell.com

1.4 Emergency telephone number

: +44 (0) 151 350 4595 (This telephone number is available 24

hours per day, 7 days per week)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Skin sensitisation, Category 1 H317: May cause an allergic skin reaction.

Long-term (chronic) aquatic hazard, H412: Harmful to aquatic life with long lasting

Category 3 effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

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Hazard pictograms

Signal word : Warning

Hazard statements : PHYSICAL HAZARDS:

Not classified as a physical hazard

according to CLP criteria. HEALTH HAZARDS:

H317 May cause an allergic skin reaction.

ENVIRONMENTAL HAZARDS:

H412 Harmful to aquatic life with long lasting

effects.

Precautionary statements : Prevention:

P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing/

eye protection/ face protection.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of water and

soap.

P333 + P313 If skin irritation or rash occurs: Get medical

advice/ attention.

Storage:

No precautionary phrases.

Disposal:

P501 Dispose of contents/ container to an

approved waste disposal plant.

Hazardous components which must be listed on the label:

Contains N-phenyl-1-naphthylamine.

Sensitising components : Contains phenothiazine.

Contains triazole derivatives. May produce an allergic reaction.

2.3 Other hazards

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

Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Used oil may contain harmful impurities.

High-pressure injection under the skin may cause serious damage including local necrosis.

Not classified as flammable but will burn.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

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Chemical nature : Synthetic oil grease thickened with clay, containing additives.

Hazardous components

Chemical name disodium sebacate	CAS-No. EC-No. Registration number 17265-14-4 241-300-3	Classification (REGULATION (EC) No 1272/2008) Eye Irrit.2; H319	Concentration (% w/w)
N-phenyl-1- naphthylamine	90-30-2 201-983-0	Acute Tox.4; H302 Skin Sens.1B;	1 - 2.49
Парпитугалине	201-983-0	H317 STOT RE2; H373 Aquatic Acute1; H400 Aquatic Chronic1; H410	
Phenothiazine	92-84-2 202-196-5 01-2119488529-19	Acute Tox.4; H302 Skin Sens.1B; H317 STOT RE2; H373 Aquatic Acute1; H400 Aquatic Chronic1; H410	0.1 - 0.9
Triazole derivative	Not Assigned 939-700-4	Skin Irrit.2; H315 Skin Sens.1B; H317 Aquatic Acute1; H400 Aquatic Chronic1; H410	0.1 - 0.9

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

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. Immediately flush skin with

large amounts of water for at least 15 minutes, and follow by washing with soap and water if available. If redness, swelling, pain and/or blisters occur, transport to the nearest medical

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facility for additional treatment.

When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait

for symptoms to develop.

Obtain medical attention even in the absence of apparent

wounds.

In case of eye contact : Flush eye with copious quantities of water.

Remove contact lenses, if present and easy to do. Continue

rinsina.

If persistent irritation occurs, obtain medical attention.

If swallowed : In general no treatment is necessary unless large quantities

are swallowed, however, get medical advice.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Skin sensitisation (allergic skin reaction) signs and symptoms

may include itching and/or a rash.

Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea.

Local necrosis is evidenced by delayed onset of pain and

tissue damage a few hours following injection.

4.3 Indication of any immediate medical attention and special treatment needed

: Notes to doctor/physician: Treatment

Treat symptomatically.

High pressure injection injuries require prompt surgical intervention and possibly steroid therapy, to minimise tissue

damage and loss of function.

Because entry wounds are small and do not reflect the seriousness of the underlying damage, surgical exploration to determine the extent of involvement may be necessary. Local anaesthetics or hot soaks should be avoided because they can contribute to swelling, vasospasm and ischaemia. Prompt surgical decompression, debridement and evacuation of foreign material should be performed under general anaesthetics, and wide exploration is essential.

SECTION 5: Firefighting measures

5.1 Extinguishing media

: Foam, water spray or fog. Dry chemical powder, carbon Suitable extinguishing media

dioxide, sand or earth may be used for small fires only.

: Do not use water in a jet. Unsuitable extinguishing

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media

5.2 Special hazards arising from the substance or mixture

Specific hazards during

firefighting

 Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide may be evolved if incomplete combustion occurs. Unidentified organic and inorganic compounds.

5.3 Advice for firefighters

Special protective equipment

for firefighters

: Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to

relevant Standards (e.g. Europe: EN469).

Specific extinguishing

methods

: Use extinguishing measures that are appropriate to local

circumstances and the surrounding environment.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : 6.1.1 For non emergency personnel:

Avoid contact with skin and eyes. 6.1.2 For emergency responders: Avoid contact with skin and eyes.

6.2 Environmental precautions

Environmental precautions : Use appropriate containment to avoid environmental

contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate

barriers.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up : Shovel into a suitable clearly marked container for disposal or

reclamation in accordance with local regulations.

6.4 Reference to other sections

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

SECTION 7: Handling and storage

General Precautions : Use local exhaust ventilation if there is risk of inhalation of

vapours, mists or aerosols.

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Use the information in this data sheet as input to a risk assessment of local circumstances to help determine

appropriate controls for safe handling, storage and disposal of

this material.

7.1 Precautions for safe handling

Advice on safe handling : Avoid prolonged or repeated contact with skin.

Avoid inhaling vapour and/or mists.

When handling product in drums, safety footwear should be worn and proper handling equipment should be used. Properly dispose of any contaminated rags or cleaning

materials in order to prevent fires.

7.2 Conditions for safe storage, including any incompatibilities

Other data : Keep container tightly closed and in a cool, well-ventilated

place. Use properly labeled and closable containers.

Store at ambient temperature.

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

The storage of this product may be subject to the Control of Pollution (Oil Storage) (England) Regulations. Further guidance may be obtained from the local environmental

agency office.

Packaging material : Suitable material: For containers or container linings, use mild

steel or high density polyethylene.

Unsuitable material: PVC.

Container Advice : Polyethylene containers should not be exposed to high

temperatures because of possible risk of distortion.

7.3 Specific end use(s)

Specific use(s) : Not applicable

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Biological occupational exposure limits

No biological limit allocated.

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general

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workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods http://www.cdc.gov/niosh/

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods http://www.osha.gov/

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances http://www.hse.gov.uk/

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA) , Germany http://www.dguv.de/inhalt/index.jsp

L'Institut National de Recherche et de Securité, (INRS), France http://www.inrs.fr/accueil

8.2 Exposure controls

Engineering measuresThe 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:

Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information:

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.

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.

Due to the product's semi-solid consistency, generation of mists and dusts is unlikely to occur.

Personal protective equipment

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 : Wear full face shield if splashes are likely to occur.

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Approved to EU Standard EN166.

Hand protection

: Where hand contact with the product may occur the use of Remarks

gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves 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.

For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm. depending on the glove make and model.

Skin and body protection

Wear chemical resistant gloves/gauntlets and boots. Where

risk of splashing, also wear an apron.

Protective clothing approved to EU Standard EN14605.

Respiratory protection : No respiratory protection is ordinarily required under normal

conditions of use.

In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material.

Thermal hazards : Not applicable

: Exposure to this product should be reduced as low as Hygiene measures

reasonably practicable. Reference should be made to the Health and Safety Executive's publication "COSHH

Essentials".

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Environmental exposure controls

General advice : Take appropriate measures to fulfill the requirements of

relevant environmental protection legislation. Avoid

contamination of the environment by following advice given in Section 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant

before discharge to surface water.

Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing

vapour.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : Semi-solid at ambient temperature.

Colour : light brown

Odour : Slight hydrocarbon Odour Threshold : Data not available Hq : Not applicable

Melting point/freezing point : Not applicable

Drop point >= 300 °CMethod: ASTM D2265

Initial boiling point and boiling : Data not available

range

: >= 215 °C Flash point

Evaporation rate : Data not available Flammability (solid, gas) : Data not available

Upper explosion limit : Typical 10 %(V)

Lower explosion limit : Typical 1 %(V)

Vapour pressure : < 0.5 Pa (20 °C)

estimated value(s)

Relative vapour density : > 1estimated value(s)

Relative density : 0.966 (15 °C)

: 966 kg/m3 (15.0 °C) Density

Method: Unspecified

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Solubility(ies)

Water solubility : negligible

Solubility in other solvents : Data not available

Partition coefficient: n-

octanol/water

: log Pow: > 6(based on information on similar products)

Auto-ignition temperature : >

320 °C

Decomposition temperature : Data not available

Viscosity

Viscosity, dynamic : Data not available
Viscosity, kinematic : Not applicable
Explosive properties : Not classified

Oxidizing properties : Data not available

9.2 Other information

Conductivity : This material is not expected to be a static accumulator.

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

Stable.

No hazardous reaction is expected when handled and stored according to provisions

10.3 Possibility of hazardous reactions

Hazardous reactions : Reacts with strong oxidising agents.

10.4 Conditions to avoid

Conditions to avoid : Extremes of temperature and direct sunlight.

10.5 Incompatible materials

Materials to avoid : Strong oxidising agents.

10.6 Hazardous decomposition products

Hazardous decomposition

: No decomposition if stored and applied as directed.

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SECTION 11: Toxicological information

11.1 Information on toxicological effects

Basis for assessment : Information given is based on data on the components and

> the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a

whole, rather than for individual component(s).

exposure

Information on likely routes of : Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity : LD50 rat: > 5,000 mg/kg

Remarks: Low toxicity:

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

: Remarks: Based on available data, the classification criteria Acute inhalation toxicity

are not met.

: LD50 Rabbit: > 5,000 mg/kg Acute dermal toxicity

Remarks: Low toxicity:

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

Skin corrosion/irritation

Product:

Remarks: Slightly irritating to skin., Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis., Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation

Product:

Remarks: Slightly irritating to the eye., Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation

Product:

Remarks: For skin sensitisation:, Expected to be a skin sensitizer.

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

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Components:

N-phenyl-1-naphthylamine:

Remarks: May cause an allergic skin reaction in sensitive individuals.

Phenothiazine:

Remarks: May cause an allergic skin reaction in sensitive individuals.

Germ cell mutagenicity

Product:

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

Carcinogenicity

Product:

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

Material	GHS/CLP Carcinogenicity Classification
disodium sebacate	No carcinogenicity classification.
N-phenyl-1-naphthylamine	No carcinogenicity classification.
Phenothiazine	No carcinogenicity classification.
Triazole derivative	No carcinogenicity classification.

Reproductive toxicity

Product:

Remarks: Not a developmental toxicant., Does not impair fertility., Based on available data, the classification criteria are not met.

STOT - single exposure

Product:

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

STOT - repeated exposure

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Product:

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

Aspiration toxicity

Product:

Not an aspiration hazard.

Further information

Product:

Remarks: Used grease may contain harmful impurities that have accumulated during use. The concentration of such harmful impurities will depend on use and they may present risks to health and the environment on disposal., ALL used grease should be handled with caution and skin contact avoided as far as possible.

Remarks: High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed.

Remarks: Slightly irritating to respiratory system.

Remarks: Classifications by other authorities under varying regulatory frameworks may exist.

Summary on evaluation of the CMR properties

Germ cell mutagenicity-

: This product does not meet the criteria for classification in

Assessment

categories 1A/1B.

Carcinogenicity -

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

Assessment

Reproductive toxicity -

Assessment

: This product does not meet the criteria for classification in

categories 1A/1B.

SECTION 12: Ecological information

12.1 Toxicity

Basis for assessment : Ecotoxicological data have not been determined specifically

for this product.

Information given is based on a knowledge of the components

and the ecotoxicology of similar products.

Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).(LL/EL/IL50 expressed as the

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nominal amount of product required to prepare aqueous test

extract).

Product:

Toxicity to fish (Acute : Remarks: LL/EL/IL50 10-100 mg/l

: 1

toxicity) Harmful

Toxicity to crustacean (Acute

toxicity)

: Remarks: LL/EL/IL50 10-100 mg/l

Harmful

Toxicity to algae/aquatic

plants (Acute toxicity)

: Remarks: LL/EL/IL50 10-100 mg/l

Harmful

Toxicity to fish (Chronic

toxicity)

: Remarks: Data not available

Toxicity to crustacean

(Chronic toxicity)

: Remarks: Data not available

Toxicity to microorganisms

(Acute toxicity)

Remarks: Data not available

Components:

N-phenyl-1-naphthylamine:

M-Factor (Short-term (acute) :

aquatic hazard)

M-Factor (Long-term

(chronic) aquatic hazard)

Phenothiazine:

M-Factor (Short-term (acute)

aquatic hazard)

Triazole derivative:

M-Factor (Short-term (acute) :

aquatic hazard)

M-Factor (Long-term : 1

(chronic) aquatic hazard)

12.2 Persistence and degradability

Product:

Biodegradability : Remarks: Not readily biodegradable., Major constituents are

inherently biodegradable, but contains components that may

persist in the environment.

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Contains components with the potential to

bioaccumulate.

Partition coefficient: n-

octanol/water

: log Pow: > 6Remarks: (based on information on similar

products)

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12.4 Mobility in soil

Product:

Mobility : Remarks: Semi-solid under most environmental conditions., If

it enters soil, it will adsorb to soil particles and will not be

mobile.

Remarks: Floats on water.

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This mixture does not contain any REACH registered

substances that are assessed to be a PBT or a vPvB.

12.6 Other adverse effects

Product:

Additional ecological

information

: Does not have ozone depletion potential, photochemical ozone creation potential or global warming potential., Product is a mixture of non-volatile components, which will not be released to air in any significant quantities under normal conditions of use.

Poorly soluble mixture., Causes physical fouling of aquatic

organisms.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Recover or recycle if possible.

It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water

courses

Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment. Waste, spills or used product is dangerous waste. 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.

Do not dispose of tank water bottoms by allowing them to drain into the ground. This will result in soil and groundwater

contamination.

MARPOL - see International Convention for the Prevention of

Pollution from Ships (MARPOL 73/78) which provides technical aspects at controlling pollutions from ships.

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Contaminated packaging : Dispose in accordance with prevailing regulations, preferably

to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand. Disposal should be in accordance with applicable regional.

national, and local laws and regulations.

Local legislation

Waste catalogue

EU Waste Disposal Code (EWC):

Waste Code

12 01 12*

Remarks : Disposal should be in accordance with applicable regional,

national, and local laws and regulations.

Classification of waste is always the responsibility of the end

user.

Hazardous Waste (England and Wales) Regulations 2005.

SECTION 14: Transport information

14.1 UN number

ADR : Not regulated as a dangerous good **RID** : Not regulated as a dangerous good **IMDG** : Not regulated as a dangerous good : Not regulated as a dangerous good **IATA**

14.2 Proper shipping name

ADR : Not regulated as a dangerous good **RID** : Not regulated as a dangerous good **IMDG** : Not regulated as a dangerous good : Not regulated as a dangerous good IATA

14.3 Transport hazard class

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

14.4 Packing group

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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

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

Remarks : Special Precautions: Refer to Section 7, Handling & Storage,

for special precautions which a user needs to be aware of or

needs to comply with in connection with transport.

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

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

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 : Product is not subject to

(Annex XIV)

REACH - List of substances subject to authorisation

(Annex XIV)

: Product is not subject to Authorisation under REACH.

Authorisation under REACH.

Volatile organic compounds : 0 %

Other regulations : The regulatory information is not intended to be

comprehensive. Other regulations may apply to this material.

Environmental Protection Act 1990 (as amended). Health and Safety at Work etc. Act 1974. Consumers Protection Act 1987. Pollution Prevention and Control Act 1999. Environment Act 1995. Factories Act 1961. The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment (Amendment) Regulations 2011. Chemicals (Hazard Information and Packaging for Supply) Regulations 2009. Control of Substances Hazardous to Health Regulations 2002 (as amended). Merchant Shipping (Dangerous Goods and Marine Pollutants) Regulations 1997. Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (as amended). Personal Protective Equipment Regulations 2002. Personal Protective Equipment at Work Regulations 1992. Hazardous Waste (England and Wales) Regulations 2005(as amended). Control of Major Accident Hazards Regulations 1999 (as

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amended). Renewable Transport Fuel Obligations Order 2007 (as amended). Energy Act 2011. Environmental Permitting (England and Wales) Regulations 2010 (as amended). Waste (England and Wales) Regulations 2011 (as amended). Planning (Hazardous Substances) Act 1990 and associated regulations. The Environmental Protection (Controls on Ozone-Depleting Substances) Regulations 2011.

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), annex XIV.

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). annex XVII.

Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work and its amendments.

Directive 1994/33/EC on the protection of young people at work and its amendments.

Council Directive 92/85/EEC on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding and its amendments.

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

REACH : Notified with Restrictions. TSCA : All components listed.

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16: Other information

REGULATION (EC) No 1272/2008 Classification procedure:

Skin sensitisation, Category 1, H317 Expert judgement and weight of evidence

determination.

Long-term (chronic) aquatic hazard, Expert judgement and weight of evidence

Category 3, H412 determination.

Full text of H-Statements

H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

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Full text of other abbreviations

Acute Tox. Acute toxicity

Aquatic Acute Short-term (acute) aquatic hazard Aquatic Chronic Long-term (chronic) aquatic hazard

Eye Irrit. Eye irritation
Skin Irrit. Skin irritation
Skin Sens. Skin sensitisation

STOT RE Specific target organ toxicity - repeated exposure

Abbreviations and Acronyms : The standard abbreviations and acronyms used in this

document can be looked up in reference literature (e.g.

scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial

Hygienists

ADR = European Agreement concerning the International

Carriage of Dangerous Goods by Road

AICS = Australian Inventory of Chemical Substances ASTM = American Society for Testing and Materials

BEL = Biological exposure limits

BTEX = Benzene, Toluene, Ethylbenzene, Xylenes

CAS = Chemical Abstracts Service

CEFIC = European Chemical Industry Council CLP = Classification Packaging and Labelling

COC = Cleveland Open-Cup

DIN = Deutsches Institut fur Normung DMEL = Derived Minimal Effect Level DNEL = Derived No Effect Level

DSL = Canada Domestic Substance List

EC = European Commission

EC50 = Effective Concentration fifty

ECETOC = European Center on Ecotoxicology and

Toxicology Of Chemicals

ECHA = European Chemicals Agency

EINECS = The European Inventory of Existing Commercial

Chemical Substances

EL50 = Effective Loading fifty

ENCS = Japanese Existing and New Chemical Substances

Inventory

EWC = European Waste Code

GHS = Globally Harmonised System of Classification and

Labelling of Chemicals

IARC = International Agency for Research on Cancer

IATA = International Air Transport Association

IC50 = Inhibitory Concentration fifty

IL50 = Inhibitory Level fifty

IMDG = International Maritime Dangerous Goods

INV = Chinese Chemicals Inventory

IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables

KECI = Korea Existing Chemicals Inventory

LC50 = Lethal Concentration fifty LD50 = Lethal Dose fifty per cent.

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LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading

LL50 = Lethal Loading fifty

MARPOL = International Convention for the Prevention of

Pollution From Ships

NOEC/NOEL = No Observed Effect Concentration / No

Observed Effect Level

OE HPV = Occupational Exposure - High Production Volume

PBT = Persistent, Bioaccumulative and Toxic

PICCS = Philippine Inventory of Chemicals and Chemical

Substances

PNEC = Predicted No Effect Concentration

REACH = Registration Evaluation And Authorisation Of

Chemicals

RID = Regulations Relating to International Carriage of

Dangerous Goods by Rail SKIN DES = Skin Designation STEL = Short term exposure limit TRA = Targeted Risk Assessment

TSCA = US Toxic Substances Control Act

TWA = Time-Weighted Average

vPvB = very Persistent and very Bioaccumulative

Further information

Training advice : Provide adequate information, instruction and training for

operators.

Other information : A vertical bar (|) in the left margin indicates an amendment

from the previous version.

Sources of key data used to

compile the Safety Data

Sheet

: The guoted 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 General use of lubricants and greases in vehicles or

machinery .- Industrial

Uses - Worker

General use of lubricants and greases in vehicles or Title

machinery .- Professional

Uses - Worker

Title Use of lubricants and greases in open systems.- Industrial

Uses - Worker

Title Use of lubricants and greases in open systems. - Professional

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

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Exposure Scenario - Worker

Exposure coeriano Tronke	<i>-</i>
30000010667	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	General use of lubricants and greases in vehicles or machinery Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 8b, PROC 9 Environmental Release Categories: ERC4, ERC7, ATIEL- ATC SPERC 4.Bi.v1
Scope of process	Covers general use of lubricants and greases in vehicles or machinery in closed systems. Includes filling and draining of containers and operation of enclosed machinery (including engines) and associated maintenance and storage 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 use of substance/product up to 100% (unless stated differently).,	
Frequency and Duration of Use		
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		

Contributing Scenarios	Risk Management Measures
General measures applicable to all activities.	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.
General exposures (closed systems)Use in closed process, no likelihood of exposure	No other specific measures identified.
Initial factory fill of equipmentUse in contained	No other specific measures identified.

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systemsUse in closed, continuous process with occasional controlled exposureTransfer of substance or preparation into small containers (dedicated filling line, including weighing) Initial factory fill of equipment(open systems)Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Avoid carrying out activities involving exposure for more than 4 hours
Operation of equipment containing engine oils and similar. Use in contained systems Use in closed process, no likelihood of exposure	No other specific measures identified.
Equipment cleaning and maintenanceTransfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities	Drain down system prior to equipment opening or maintenance. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Retain drain downs in sealed storage pending disposal or for subsequent recycle.
Equipment cleaning and maintenanceOperation is carried out at elevated temperature (> 20°C above ambient temperature). Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities	Drain down system prior to equipment opening or maintenance. Provide extract ventilation to emission points when contact with warm (>50oC) product is likely. Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls. Retain drain downs in sealed storage pending disposal or for subsequent recycle.
Storage.Use in closed process, no likelihood of exposureUse in closed, continuous process with occasional controlled exposure	Store substance within a closed system.

Section 2.2 Control of Environmental Exposure	
Amounts Used	
EU tonnage (tonnes per year): 2,631.1	
Fraction of EU tonnage used	in region: 0.1

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Fraction of Regional tonnage used locally:	0.1
Frequency and Duration of Use	0.1
Emission Days (days/year):	300
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Negligible wastewater emissions as process operates without water	
contact.	
Release fraction to air from process (after typical onsite RMMs):	5.00E-05
Release fraction to wastewater from process (after typical onsite	2.00E-11
RMMs and before (municipal) sewage treatment plant):	
Release fraction to soil from process (after typical onsite RMMs):	0
Technical conditions and measures at process level (source) to pr	event release
Common practices vary across sites thus conservative process	
release estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges, air
emissions and releases to soil	T
Treat air emission to provide a typical removal efficiency of (%)	70
Prevent discharge of undissolved substance to or recover from onsite	
wastewater.	
User sites are assumed to be provided with oil/water separators or	
equivalent and for waste water to be discharged via public sewer	
system.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	0.1
treatment (%)	0.1
Assumed domestic sewage treatment plant flow (m3/d)	2.00E+03
Maximum allowable site quantity (MSafe) based on OCs and RMMs	7,903
as above (kg/day):	7,500
Conditions and Measures related to external treatment of waste fo	r disposal
External treatment and disposal of waste should comply with applicable	
regulations.	roodi aria, or rogioriar
- U - ··· - · ·	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regional
regulations.	5
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Section 3.1 - Health

The Risk Management Measures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.

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

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Section	J.Z	-Environment

Used ECETOC TRA model.

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

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Section 4.2 -Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org).

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

For further information see www.ATIEL.org/REACH GES.

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Exposure Scenario - Worker

30000010668	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	General use of lubricants and greases in vehicles or machinery Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 8a, PROC 8b, PROC 20 Environmental Release Categories: ERC9a, ERC9b, ESVOC SpERC 9.6b.v1
Scope of process	Covers general use of lubricants and greases in vehicles or machinery in closed systems. Includes filling and draining of containers and operation of enclosed machinery (including engines) and associated maintenance and storage 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	Covers use of substance/product up to 100% (unless stated
Substance in Mixture/Article	differently).,
Frequency and Duration of	Use
Covers daily exposures up to	8 hours (unless stated differently).
Other Operational Conditio	ns affecting Exposure
	in 20°C above ambient temperature (unless stated differently).

Contributing Scenarios	Risk Management Measures
General measures	Avoid direct skin contact with product. Identify potential areas
applicable to all activities.	for indirect skin contact. Wear gloves (tested to EN374) if

Continuating Occinatios	Nisk management measures
General measures applicable to all activities.	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.
Operation of equipment containing engine oils and similar. Use in contained systems Use in closed process, no likelihood of	No other specific measures identified.

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exposure	
Material transfersNon- dedicated facilityTransfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities	Avoid carrying out activities involving exposure for more than 4 hours Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Equipment cleaning and maintenanceTransfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilitiesHeat and pressure transfer fluids in dispersive, professional use but closed systems	Drain down system prior to equipment opening or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle.
Storage.Use in closed process, no likelihood of exposureUse in closed, continuous process with occasional controlled exposure	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure	9	
Amounts Used			
EU tonnage (tonnes per year):		5,387.2	
Fraction of EU tonnage used in region:		0.1	
Fraction of Regional tonnage	used locally:	0.1	
Frequency and Duration of Use			
Emission Days (days/year):		365	
Environmental factors not i	nfluenced by risk management		
Local freshwater dilution factor	Local freshwater dilution factor:		
Local marine water dilution fa	ctor:	100	
Other Operational Conditions affecting Environmental Exposure		e	
Negligible wastewater emissions as process operates without water			
contact.			
Release fraction to air from process (after typical onsite RMMs):		1.00E-04	
Release fraction to wastewater from process (after typical onsite		5.00E-04	
RMMs and before (municipal) sewage treatment plant):			
Release fraction to soil from process (after typical onsite RMMs):		1E-03	
	Technical conditions and measures at process level (source) to prevent release		
Common practices vary across sites thus conservative process			
release estimates used.			
Technical onsite conditions and measures to reduce or limit discharges, air			
emissions and releases to s			
Prevent discharge of undissolved substance to or recover from onsite		te	
wastewater.			
	prevent/limit release from site		
Do not apply industrial sludge			
Sludge should be incinerated	contained or reclaimed.		

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Conditions and Measures related to municipal sewage treatment plant		
Estimated substance removal from wastewater via domestic sewage	0.1	
treatment (%)		
Assumed domestic sewage treatment plant flow (m3/d)	9.23E-02	
Maximum allowable site quantity (MSafe) based on OCs and RMMs	89.2	
as above (kg/day):		

Conditions and Measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or regional regulations.

Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or regional regulations.

SECTION 3 EXPOSURE ESTIMATION

Section 3.1 - Health

The Risk Management Measures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.

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

Section 3.2 - Environment

Used ECETOC TRA model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

Section 4.1 - Health

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Section 4.2 - Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org).

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

For further information see www.ATIEL.org/REACH_GES.

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Exposure Scenario - Worker

30000010669	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use of lubricants and greases in open systems Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 7, PROC 8b, PROC 9, PROC 10, PROC 13 Environmental Release Categories: ERC4, ATIEL-ATC SPERC 4.Ci.v1
Scope of process	Covers use of lubricants and greases in open systems, including application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways. Includes associated product storage, material transfers, sampling and maintenance 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 STF		
Concentration of the	Covers use of substance/product up to 100% (unless stated		
Substance in Mixture/Article	differently).,	•	
Frequency and Duration of Use			
Covers daily exposures up to 8 hours (unless stated differently).			
Other Operational Conditions affecting Exposure			
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.			

Contributing Scenarios	Risk Management Measures
General measures applicable to all activities.	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying. Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.

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Material transfersManualTransfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities	Avoid carrying out activities involving exposure for more than 1 hour.
Material transfersAutomated process with (semi) closed systems.Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilitiesTransfer of substance or preparation into small containers (dedicated filling line, including weighing)	Ensure material transfers are under containment or extract ventilation.
Roller, spreader, flow applicationRoller application or brushing	Provide extraction ventilation at points where emissions occur.
SprayingIndustrial spraying	Carry out in a vented booth or extracted enclosure. Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Treatment by dipping and pouringTreatment of articles by dipping and pouring	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls.
Equipment cleaning and maintenanceTransfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities	Drain down system prior to equipment opening or maintenance. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Retain drain downs in sealed storage pending disposal or for subsequent recycle.
Storage.Use in closed process, no likelihood of exposureUse in closed, continuous process with occasional controlled exposure	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure	
Amounts Used		
EU tonnage (tonnes per year):		380.9
Fraction of EU tonnage used in region:		0.1

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Fraction of Regional tonnage used locally:	0.1
Frequency and Duration of Use	0.1
Emission Days (days/year):	300
Environmental factors not influenced by risk management	300
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	100
Negligible wastewater emissions as process operates without water	
contact.	
Release fraction to air from process (after typical onsite RMMs) :	5.00E-05
Release fraction to wastewater from process (after typical onsite	2.00E-11
RMMs and before (municipal) sewage treatment plant):	
Release fraction to soil from process (after typical onsite RMMs):	0
Technical conditions and measures at process level (source) to pr	event release
Common practices vary across sites thus conservative process	
release estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges, air
emissions and releases to soil	
Treat air emission to provide a typical removal efficiency of (%)	70
Prevent discharge of undissolved substance to or recover from onsite	
wastewater.	
User sites are assumed to be provided with oil/water separators or	
equivalent and for waste water to be discharged via public sewer	
system.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Massures related to municipal source treatment of	lont
Conditions and Measures related to municipal sewage treatment p Estimated substance removal from wastewater via domestic sewage	0.1
treatment (%)	0.1
Assumed domestic sewage treatment plant flow (m3/d)	2.00E+03
Maximum allowable site quantity (MSafe) based on OCs and RMMs	1,158.2
as above (kg/day):	1,100.2
Conditions and Measures related to external treatment of waste fo	r disposal
External treatment and disposal of waste should comply with applicable local and/or regional	
regulations.	
•	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regional
regulations.	

SECTION 3 EXPOSURE ESTIMATION

Section 3.1 - Health

The Risk Management Measures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.

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

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Section	J.Z	-Environment

Used ECETOC TRA model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Section 4.2 - Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org).

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

For further information see www.ATIEL.org/REACH GES.

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Exposure Scenario - Worker

30000010670	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use of lubricants and greases in open systems Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 8a, PROC 10, PROC 11, PROC 13 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.6c.v1
Scope of process	Covers use of lubricants and greases in open systems, including application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways. Includes associated product storage, material transfers, sampling and maintenance 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 STF		
Concentration of the	Covers use of substance/product up to 100% (unless stated		
Substance in Mixture/Article	differently).,	•	
Frequency and Duration of Use			
Covers daily exposures up to 8 hours (unless stated differently).			
Other Operational Conditions affecting Exposure			
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.			

Contributing Scenarios	Risk Management Measures
General measures applicable to all activities.	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying. Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.

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Material transfersManualTransfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities	Avoid carrying out activities involving exposure for more than 1 hour.
Roller, spreader, flow applicationRoller application or brushing	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Avoid carrying out activities involving exposure for more than 4 hours Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
SprayingNon industrial spraying	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Avoid carrying out activities involving exposure for more than 1 hour. Wear a respirator conforming to EN140 with Type A/P2 filter or better. Wear suitable coveralls to prevent exposure to the skin. Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Treatment by dipping and pouringTreatment of articles by dipping and pouring	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
Equipment cleaning and maintenanceTransfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities	Drain down system prior to equipment opening or maintenance. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Avoid carrying out activities involving exposure for more than 4 hours Retain drain downs in sealed storage pending disposal or for subsequent recycle.
Storage.Use in closed process, no likelihood of exposureUse in closed, continuous process with occasional controlled exposure	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure	
Amounts Used		
EU tonnage (tonnes per year):		224
Fraction of EU tonnage used in region: 0.1		0.1
Fraction of Regional tonnage used locally:		0.1

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Frequency and Duration of Use		
Emission Days (days/year):	365	
Environmental factors not influenced by risk management		
Local freshwater dilution factor:	10	
Local marine water dilution factor:	100	
Other Operational Conditions affecting Environmental Exposure		
Negligible wastewater emissions as process operates without water contact.		
Release fraction to air from process (after typical onsite RMMs):	1.00E-04	
Release fraction to wastewater from process (after typical onsite RMMs and before (municipal) sewage treatment plant):	5.00E-04	
Release fraction to soil from process (after typical onsite RMMs):	1E-03	
Technical conditions and measures at process level (source) to pro	event release	
Common practices vary across sites thus conservative process release estimates used.		
Technical onsite conditions and measures to reduce or limit discharges and releases to soil	arges, air	
Prevent discharge of undissolved substance to or recover from onsite wastewater.		
Organisational measures to prevent/limit release from site		
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.		
Conditions and Measures related to municipal sewage treatment p	lant	
Assumed domestic sewage treatment plant flow (m3/d)	9.23E-02	
Maximum allowable site quantity (MSafe) based on OCs and RMMs as above (kg/day) :	10.3	
Estimated substance removal from wastewater via domestic sewage treatment (%)	0.1	
Conditions and Measures related to external treatment of waste for	r disposal	
External treatment and disposal of waste should comply with applicable regulations.	local and/or regional	
Conditions and measures related to external recovery of waste		
External recovery and recycling of waste should comply with applicable local and/or regional regulations.		

Section 3.1 - Health

The Risk Management Measures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.

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

Section 3.2 -Environment	
Used ECETOC TRA model.	

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE

According to EC No 1907/2006 as amended as at the date of this SDS

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EXPOSURE SCENARIO

Section 4.1 - Health

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Section 4.2 - Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org).

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

For further information see www.ATIEL.org/REACH GES.