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

1.1 Product identifier

: AeroShell LGF Trade name Product code : 001A0069

Unique Formula Identifier

(UFI)

: V9H0-G0TX-100V-RFAT

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

Use of the Sub-: Mineral shock-absorber fluid for aircraft.. For further details stance/Mixture

consult the AeroShell Book on www.shell.com/aviation.

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

ance 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 sup-

plier.

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

Contact for Safety Data : If you have any enquiries about the content of this SDS

Sheet please email lubricantSDS@shell.com

1.4 Emergency telephone number

: +44 (0) 20 7934 7778 (This telephone number is available 24

hours per day, 7 days per week)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Aspiration hazard, Category 1 H304: May be fatal if swallowed and enters air-

ways.

Skin irritation, Category 2 H315: Causes skin irritation.

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Long-term (chronic) aquatic hazard, Cat- H411: Toxic to aquatic life with long lasting effects.

egory 2

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.

H315 Causes skin irritation.

ENVIRONMENTAL HAZARDS:

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements : Prevention:

P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing/ eye protec-

tion/ face protection.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON

CENTER/doctor.

P332 + P313 If skin irritation occurs: Get medical advice/

attention.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste

disposal plant.

Hazardous components which must be listed on the label:

Contains Distillates (petroleum), hydrotreated middle.

Sensitising components

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.

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Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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

Chemical nature : Highly refined mineral oils and additives.

040 N

The highly refined mineral oil contains <3% (w/w) DMSO-

extract, according to IP346.

Classification based on DMSO extract content < 3% (Regula-

01---:(:---::

tion (EC) 1272/2008, Annex VI, Part 3, Note L).

Components

Chemical name Distillates (petroleum), hy-	CAS-No. EC-No. Index-No. Registration number 64742-53-6	Classification Asp. Tox. 1; H304	Concentration (% w/w) 65 - 85
drotreated light naphthenic	265-156-6 649-466-00-2 01-2119480375-34, UK-01-7893359663-3		
Distillates (petroleum), hydrotreated middle	64742-46-7 265-148-2 649-221-00-X 01-2119489867-12	Asp. Tox. 1; H304 Skin Irrit. 2; H315 Acute Tox. 4; H332 Aquatic Chronic 2; H411 M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	10 - 20
Zinc dialkyldithiophosphate	68457-79-4 270-608-0	Skin Irrit. 2; H315 Eye Dam. 1; H318 Aquatic Chronic 2; H411	1 - 2.49
Butylated hydroxytoluene	128-37-0 204-881-4 01-2119565113-46	Aquatic Chronic 1; H410 Aquatic Acute 1; H400	0.25 - 0.99

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		M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	
Phenol, isobutylenated, phosphate (3:1)	68937-40-6 273-065-8 01-2119519251-50	Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 1	0.25 - 0.99
Triazole derivative	91273-04-0 401-280-0 613-072-00-9	Skin Corr. 1B; H314 Skin Sens. 1A; H317 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	0.01 - 0.09

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

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.

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

rinsing.

If persistent irritation occurs, obtain medical attention.

If swallowed : Call emergency number for your location / facility.

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

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : If material enters lungs, signs and symptoms may include

coughing, choking, wheezing, difficulty in breathing, chest

congestion, shortness of breath, and/or fever.

The onset of respiratory symptoms may be delayed for sever-

al hours after exposure.

Skin irritation signs and symptoms may include a burning sen-

sation, redness, swelling, and/or blisters.

Defatting dermatitis signs and symptoms may include a burn-

ing sensation and/or a dried/cracked appearance.

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

Treatment : Treat symptomatically.

Call a doctor or poison control center for guidance.

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

age 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 anaesthet-

ics, and wide exploration is essential.

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 : Do not use water in a jet.

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media

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-

fighting

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 meth-

ods

Use extinguishing measures that are appropriate to local cir-

cumstances 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 contami-

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

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Slippery when spilt. Avoid accidents, clean up immediately.

Prevent from spreading by making a barrier with sand, earth

or other containment material.

Reclaim liquid directly or in an absorbent.

Soak up residue with an absorbent such as clay, sand or other

suitable material and dispose of properly.

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.

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SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures : Use local exhaust ventilation if there is risk of inhalation of

vapours, mists or aerosols.

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.

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 mate-

rials in order to prevent fires.

Product Transfer : Proper grounding and bonding procedures should be used

during all bulk transfer operations to avoid static accumulation.

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

ably practicable. Reference should be made to the Health and

Safety Executive's publication "COSHH Essentials".

7.2 Conditions for safe storage, including any incompatibilities

Further information on stor-

age stability

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

place.

Use properly labeled and closable containers. Must be stored in a diked (bunded) area.

Store at ambient temperature.

Refer to section 15 for any additional specific legislation cov-

ering 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 tem-

peratures because of possible risk of distortion.

7.3 Specific end use(s)

Specific use(s) : Not applicable

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Oil mist, mineral	Not As- signed	TWA (inhalable fraction)	5 mg/m3	US. ACGIH Threshold Limit Values
Oil mist, mineral		TWA (Inhalable particulate matter)	5 mg/m3	ACGIH
Butylated hydroxy- toluene	128-37-0	TWA	10 mg/m3	GB EH40
Butylated hydroxy- toluene		TWA (Inhalable fraction and vapor)	2 mg/m3	ACGIH

Biological occupational exposure limits

No biological limit allocated.

8.2 Exposure controls

Engineering measures

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:

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.

Do not ingest. If swallowed, then seek immediate medical assistance

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

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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. 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.

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.

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 suitable, select an appropriate combination of mask and filter.

Select a filter suitable for combined particulate/organic gases and vapours [Type A/Type P boiling point > 65°C (149°F)]

meeting EN14387 and EN143.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state Liquid at room temperature.

Colour yellow

Odour Slight hydrocarbon

Odour Threshold Data not available

<= -68 °C pour point

Method: Unspecified

Melting / freezing point Data not available

Initial boiling point and boiling : > 280 °Cestimated value(s)

range

Flammability

Flammability (solid, gas) Data not available

Lower explosion limit and upper explosion limit / flammability limit

Upper explosion limit / upper flammability limit Typical 10 %(V)

Lower explosion limit /

Lower flammability limit

Typical 1 %(V)

110 °C Flash point

Method: Unspecified

Auto-ignition temperature > 320 °C

Decomposition temperature

Decomposition tempera-

Data not available

ture

pΗ Not applicable

Viscosity

Viscosity, dynamic Data not available

14.5 mm2/s (40.0 °C) Viscosity, kinematic

Method: Unspecified

Solubility(ies)

Water solubility negligible

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Solubility in other solvents : Data not available

Partition coefficient: n- : log Pow: > 6

octanol/water (based on information on similar products)

Vapour pressure : < 0.5 Pa (20 °C)

estimated value(s)

Relative density : 0.874 (15 °C)

Density : 874 kg/m3 (15.6 °C)

Method: Unspecified

Relative vapour density : > 1

estimated value(s)

Particle characteristics

Particle size : Data not available

9.2 Other information

Explosives : Classification Code: Not classified

Oxidizing properties : Data not available

Evaporation rate : Data not available

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.

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10.6 Hazardous decomposition products

No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

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

Information on likely routes of : Skin and eye contact are the primary routes of exposure alt-

exposure hough 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: Aspiration into the lungs may cause chemical

pneumonitis which can be fatal.

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

are not met.

Acute dermal toxicity : LD 50 (Rabbit): > 5,000 mg/kg

Remarks: Low toxicity

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

Components:

Distillates (petroleum), hydrotreated middle:

Acute inhalation toxicity : LC50 (Rat): > 1 - < 5 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist Remarks: Harmful if inhaled.

Skin corrosion/irritation

Product:

Remarks : Causes skin irritation.

Components:

Distillates (petroleum), hydrotreated middle:

Species : Rabbit Exposure time : 24 h

Method : Test(s) equivalent or similar to OECD Test Guideline 404

Result : Skin irritation

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Remarks : Causes skin irritation.

Serious eye damage/eye irritation

Product:

Remarks : Slightly irritating to the eye.

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

Components:

Zinc dialkyldithiophosphate:

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

Respiratory or skin sensitisation

Product:

Remarks : For respiratory and skin sensitisation:

Not a sensitiser.

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

Components:

Triazole derivative:

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

Germ cell mutagenicity

Product:

Genotoxicity in vivo : Remarks: Non mutagenic

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.

Carcinogenicity

Product:

Remarks : Not a carcinogen.

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

Remarks : Product contains mineral oils of types shown to be non-

carcinogenic in animal skin-painting studies.

Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC).

Carcinogenicity - Assess-

ment

This product does not meet the criteria for classification in

categories 1A/1B.

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Material	GHS/CLP Carcinogenicity Classification
Highly refined mineral oil	No carcinogenicity classification.
Butylated hydroxytoluene	No carcinogenicity classification.
Triphenyl phosphate	No carcinogenicity classification.

Material	Other Carcinogenicity Classification
Butylated hydroxytoluene	IARC: Group 3: Not classifiable as to its carcinogenicity to humans

Reproductive toxicity

Product:

Effects on fertility

Remarks: Not a developmental toxicant., Does not impair fertility., 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.

STOT - repeated exposure

Product:

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

Aspiration toxicity

Product:

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

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components consid-

ered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at

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Further information

Product:

Remarks : Used oils may contain harmful impurities that have accumu-

lated during use. The concentration of such impurities will depend on use and they may present risks to health and the

environment on disposal.

ALL used oil 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.

Remarks : Unless indicated otherwise, the data presented is representa-

tive of the product as a whole, rather than for individual com-

ponent(s).

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : Remarks: $LL/EL/IL50 > 1 \le 10 \text{ mg/l}$

Toxic

Toxicity to daphnia and other :

aquatic invertebrates

Remarks: $LL/EL/IL50 > 1 \le 10 \text{ mg/l}$

Toxic

Toxicity to algae/aquatic plants : Remarks: $LL/EL/IL50 > 1 \le 10 \text{ mg/l}$

Toxic

Toxicity to fish (Chronic tox-

icity)

Remarks: Data not available

Toxicity to daphnia and other : aquatic invertebrates (Chron-

aquatic invice toxicity)

Remarks: Data not available

Toxicity to microorganisms

Remarks: Data not available

Components:

Distillates (petroleum), hydrotreated middle:

Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): 1 - 10 mg/l

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Exposure time: 96 h

Method: Test(s) equivalent or similar to OECD Guideline 203

Toxicity to daphnia and other :

aquatic invertebrates

LC50 (Daphnia (water flea)): 1 - 10 mg/l

Exposure time: 48 h

Method: Test(s) equivalent or similar to OECD Guideline 202

Toxicity to algae/aquatic plants : LL50 (Raphidocelis subcapitata (freshwater green alga)): 1 -

10 mg/l

Exposure time: 72 h

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

201

M-Factor (Acute aquatic tox-

icity)

1

M-Factor (Chronic aquatic

toxicity)

1

Butylated hydroxytoluene:

Toxicity to fish : LL50 (Oryzias latipes (Orange-red killifish)): 1.1 mg/l

Exposure time: 96 h

Method: Regulation (EC) No. 440/2008, Annex, C.1

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 0.48 mg/l

Exposure time: 48 h

Method: Test(s) equivalent or similar to OECD Guideline 202

M-Factor (Acute aquatic tox- :

icity)

1

Toxicity to fish (Chronic tox-

icity)

NOEC: 0.53 mg/l Exposure time: 30 d

Species: Oryzias latipes (Orange-red killifish)

Method: Test(s) equivalent or similar to OECD Guideline 210

Toxicity to daphnia and other aquatic invertebrates (Chron-

ic toxicity)

NOEC: 0.069 mg/l Exposure time: 21 d

Species: Daphnia magna (Water flea)

Method: Test(s) equivalent or similar to OECD Guideline 211

M-Factor (Chronic aquatic

toxicity)

1

Phenol, isobutylenated, phosphate (3:1):

M-Factor (Acute aquatic tox- : 1

icity)

Triazole derivative:

M-Factor (Acute aquatic tox- : 1

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icity)

M-Factor (Chronic aquatic : 1

toxicity)

12.2 Persistence and degradability

Product:

Biodegradability : Remarks: Not readily biodegradable.

Major constituents are inherently biodegradable, but contains com-

ponents that may persist in the environment.

Components:

Butylated hydroxytoluene:

Biodegradability : Exposure time: 62 d

Method: OECD Test Guideline 309 Remarks: Degradation half life

5.65 days

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Contains constituents with the potential to bioaccumulate.

12.4 Mobility in soil

Product:

Mobility : Remarks: Liquid under most environmental conditions., If it

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

bile.

Remarks: Floats on water.

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This mixture does not contain any REACH registered sub-

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

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to

have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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12.7 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.

Mineral oil does not cause chronic toxicity to aquatic organisms at concentrations less than 1 mg/l.

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.

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

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EU Waste Disposal Code (EWC):

Waste Code

13 01 10*

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 or ID number

ADR : 3082
RID : 3082
IMDG : 3082
IATA : 3082

14.2 UN proper shipping name

ADR : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Distillates (petroleum), hydrotreated middle, Phenol, isobutyl-

enated, phosphate (3:1))

RID : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Distillates (petroleum), hydrotreated middle, Phenol, isobutyl-

enated, phosphate (3:1))

IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Distillates (petroleum), hydrotreated middle, Phenol, isobutyl-

enated, phosphate (3:1))

IATA : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Distillates (petroleum), hydrotreated middle, Phenol, isobutyl-

enated, phosphate (3:1))

14.3 Transport hazard class(es)

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ADR : 9
RID : 9
IMDG : 9
IATA : 9

14.4 Packing group

ADR

Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9

RID

Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9

IMDG

Packing group : III Labels : 9

IATA

Packing group : III Labels : 9

14.5 Environmental hazards

ADR

Environmentally hazardous : yes

RID

Environmentally hazardous : yes

IMDG

Marine pollutant : yes

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 Maritime transport in bulk according to IMO instruments

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 - Restrictions on the manufacture, placing on the market and use of certain dangerous substances,

: Not applicable

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mixtures and articles (Annex XVII)

REACH - List of substances subject to authorisation : Product is not subject to Authorisa-

(Annex XIV) tion under REACH.

Seveso III: Directive 2012/18/EU of the Euro- e2 ENVIRONMENTAL HAZARDS pean Parliament and of the Council on the

control of major-accident hazards involving dangerous substances.

Volatile organic compounds : Volatile organic compounds (VOC) content: 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 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.

Product is subject to the Control of Major Accident Hazards Regulations 2015 (2015 No. 483) based on Seveso III directive (2012/18/EU).

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

REACH : All components listed or polymer exempt.

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

Full text of H-Statements

H304 : May be fatal if swallowed and enters airways. H314 : Causes severe skin burns and eye damage.

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H315 : Causes skin irritation.

H317 : May cause an allergic skin reaction. H318 : Causes serious eye damage.

H332 : Harmful if inhaled. H400 : Very toxic to aquatic life.

H410 : Very toxic to aquatic life with long lasting effects.H411 : Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox. : Acute toxicity

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

Asp. Tox. : Aspiration hazard
Eye Dam. : Serious eye damage
Skin Corr. : Skin corrosion
Skin Irrit. : Skin irritation
Skin Sens. : Skin sensitisation

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
GB EH40 : UK. EH40 WEL - Workplace Exposure Limits

ACGIH / TWA : 8-hour, time-weighted average

GB EH40 / TWA : Long-term exposure limit (8-hour TWA reference period)

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

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

from the previous version.

Sources of key data used to

compile the Safety Data Sheet

The quoted data are from, but not limited to, one or more sources of information (e.g. toxicological data from Shell Health Services, material suppliers' data, CONCAWE, EU

IUCLID date base, EC 1272 regulation, etc).

Classification of the mixture: Classification procedure:

Asp. Tox. 1 H304 Expert judgement and weight of evi-

dence determination.

Skin Irrit. 2 H315 Expert judgement and weight of evi-

dence determination.

Aquatic Chronic 2 H411 Expert judgement and weight of evi-

dence determination.

Identified Uses according to the Use Descriptor System

Uses - Worker

Title

: General use of lubricants and greases in vehicles or machin-

ery.- Industrial

Uses - Worker

Title : General use of lubricants and greases in vehicles or machin-

ery.- Professional

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.

GB / EN

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Exposure Scenario - Worker

Exposure oceriario - Worke	<u> </u>
30000010750	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	General use of lubricants and greases in vehicles or machin-
	ery 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 STF	•
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 10 differently).,	00% (unless stated
Frequency and Duration of	Use	
Covers daily exposures up to	8 hours (unless stated differently).	
Other Operational Condition	ons affecting Exposure	
	an 20°C above ambient temperature (unles lard of occupational hygiene is implemente	

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 equip-	No other specific measures identified.

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mentUse in contained sys-	
temsUse in closed, contin-	
uous process with occa-	
sional controlled exposure-	
Transfer of substance or	
preparation into small con-	
tainers (dedicated filling	
line, including weighing)	
Initial factory fill of equip-	Provide a good standard of general or controlled ventilation (5
ment(open sys-	to 15 air changes per hour).
tems)Transfer of substance	Avoid carrying out activities involving exposure for more than
or preparation (charging/	4 hours
discharging) from/ to ves-	Thomas
sels/ large containers at	
dedicated facilities	
Operation of equipment	No other specific measures identified.
containing engine oils and	No other specific measures identified.
similar.Use in contained	
systemsUse in closed pro-	
cess, no likelihood of expo-	
sure	
Equipment cleaning and	Drain down system prior to equipment opening or mainte-
maintenanceTransfer of	nance.
substance or preparation	Provide a good standard of general ventilation (not less than
(charging/ discharging)	3 to 5 air changes per hour).
from/ to vessels/ large con-	Wear chemically resistant gloves (tested to EN374) in combi-
tainers at dedicated facili-	nation with specific activity training.
ties	Retain drain downs in sealed storage pending disposal or for
	subsequent recycle.
Equipment cleaning and	Drain down system prior to equipment opening or mainte-
maintenanceOperation is	nance.
carried out at elevated tem-	Provide extract ventilation to emission points when contact
perature (> 20°C above	with warm (>50oC) product is likely.
ambient tempera-	Wear chemically resistant gloves (tested to EN374) in combi-
ture). Transfer of substance	nation with intensive management supervision controls.
or preparation (charging/	Retain drain downs in sealed storage pending disposal or for
discharging) from/ to ves-	subsequent recycle.
sels/ large containers at	
dedicated facilities	
Storage.Use in closed pro-	Store substance within a closed system.
cess, no likelihood of expo-	Ties of the state
sureUse in closed, continu-	
ous process with occasion-	
al controlled exposure	
ai controlled exposure	

Section 2.2	Control of Environmenta	Control of Environmental Exposure	
Amounts Used			
EU tonnage (tonnes per	year):	2,631.1	
Fraction of EU tonnage	used in region:	0.1	
Fraction of Regional tonnage used locally:		0.1	
Frequency and Duration	on of Use		

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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 re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges, air emis-
sions 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 sys-	
tem.	
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
Estimated substance removal from wastewater via domestic sewage	93.8
treatment (%)	93.0
Assumed domestic sewage treatment plant flow (m3/d)	2.00E+03
Maximum allowable site quantity (MSafe) based on OCs and RMMs	1.78E+06
as above (kg/day):	1.702100
Conditions and Measures related to external treatment of waste for disposal	
External treatment and disposal of waste should comply with applicable	
regulations.	10001 0110, 01 109.01101
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
Coation 2.4 Hoolth	

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

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Used ECETOC TRA model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Castian 4.4 Haalth	

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

Exposure Scenario - Worke	FI
30000010751	
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, ATIEL-ATC SPERC 9.Bp.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	o 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.
Operation of equipment containing engine oils and similar. Use in contained systems Use in closed pro-	No other specific measures identified.

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ages and likelihood of owns	
cess, no likelihood of expo-	
sure	
Material transfersNon- dedicated facilityTransfer of substance or preparation (charging/ discharging) from/ to vessels/ large con-	Avoid carrying out activities involving exposure for more than 4 hours Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
tainers at non-dedicated	
facilities	
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	
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	or:	10
Local marine water dilution fa	ctor:	100
Other Operational Condition	ns affecting Environmental Exposure	
Negligible wastewater emissi	ons 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)		
	process (after typical onsite RMMs):	1E-03
	easures at process level (source) to	prevent release
	ss sites thus conservative process re-	
lease estimates used.		
	and measures to reduce or limit disc	charges, air emis-
sions and releases to soil		
_	lved substance to or recover from onsite	
wastewater.		
	prevent/limit release from site	
Do not apply industrial sludge	to natural soils.	

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lant
93.8
2.00E+03
205.8

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	
CECTION	EXTOOURE 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	
M/L (L D'. M	

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.

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