SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006 (REACH)

HIGH TEMP MP

Revision Date: 2019-12-12 Version 8

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name: HIGH TEMP MP
Number: Mixture

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

Identified uses: Lubricating grease.

1.3. Details of the supplier of the safety data sheet

Supplier: NTN-SNR ROULEMENTS
1, rue des Usines – BP 2017
74000 ANNECY FRANCE

Tel: +33 (0)4 50 65 30 00
Fax: +33 (0)4 50 65 32 91

For further information, please contact:***

Contact Point: Laboratory Service NTN-SNR Roulements
E-mail Address: fds@ntn-snr.fr

1.4. Emergency telephone number

Emergency Tel. (Office hours): +33 (0)1 45 65 97 55
Emergency Tel. (France) ORFILA (INRS): +33 (0)1 45 42 59 59
Emergency Tel. (EU): 112 (Available 24 hours a day)

Section 2: HAZARDS IDENTIFICATION
2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008
For the full text of the H-Statements mentioned in this Section, see Section 2.2.

Classification
The product is classified as dangerous in accordance with Regulation (EC) No. 1272/2008
Chronic aquatic toxicity - Category 3 - (H412)

2.2. Label elements

Labelled according to REGULATION (EC) No 1272/2008

Signal word
None

Hazard Statements
H412 - Harmful to aquatic life with long lasting effects

Precautionary statements
P273 - Avoid release to the environment
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

2.3. Other hazards

Physical-Chemical Properties
Contaminated surfaces will be extremely slippery.

Environmental properties
The product may form an oil film on the water surface that may stop the oxygen exchange. Should not be released into the environment.***

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixture

Chemical nature
The product is made from synthetic base oils.

Hazardous components

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>EC-No</th>
<th>REACH Registration Number</th>
<th>CAS-No</th>
<th>Weight %</th>
<th>Classification (Reg. 1272/2008)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A mixture of: 3,3'-dicyclohexyl-1,1'-methylenebis(4,1-phenylene)diurea; 3-cyclohexyl-1-(4-(3-octadecyureido)benzyl)phenyl)urea; 3,3'-dioctadecyl-1,1'-methylenebis(4,1-phenylene)diurea</td>
<td>-</td>
<td>01-0000015606-69</td>
<td>^</td>
<td>5&lt;10</td>
<td>Aquatic Chronic 4 (H413)</td>
</tr>
<tr>
<td>406-940-1</td>
<td>406-940-1</td>
<td>-</td>
<td>126019-82-7</td>
<td>2.5&lt;5</td>
<td>Aquatic chronic 2 (H411)</td>
</tr>
</tbody>
</table>
Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

General advice

IN CASE OF SERIOUS OR PERSISTENT CONDITIONS, CALL A DOCTOR OR EMERGENCY MEDICAL CARE.***

Eye contact
Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing.***

Skin contact
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. High pressure jets may cause skin damage. Take victim immediately to hospital.***

Inhalation
Remove casualty to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration.***

Ingestion
Clean mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or poison control centre immediately.***

Protection of first-aiders
First aider needs to protect himself. See Section 8 for more detail. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.***

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

Eye contact
Not classified based on available data.

Skin contact
Not classified based on available data. High pressure injection of the products under the skin may have very serious consequences even though no symptom or injury may be apparent.

Inhalation
Not classified based on available data.

Ingestion
Not classified based on available data. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

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

Notes to physician
Treat symptomatically.***

Section 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media Carbon dioxide (CO₂). ABC powder. Foam. Water spray or fog.***
Section 6: ACCIDENTAL RELEASE MEASURES

5.2. Special hazards arising from the substance or mixture

Special hazard

Incomplete combustion and thermolysis may produce gases of varying toxicity such as carbon monoxide, carbon dioxide, various hydrocarbons, aldehydes and soot. These may be highly dangerous if inhaled in confined spaces or at high concentration. Combustion products include sulphur oxides (SO2 and SO3) and Hydrogen sulphide H2S, Mercaptans, Phosphorous oxides, Nitrogen oxides (NOx).*

5.3. Precautions for fire-fighters

Special protective equipment for fire-fighters

Wear self-contained breathing apparatus and protective suit.***

Other information

Cool containers / tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

General Information

Do not touch or walk through spilled material. Contaminated surfaces will be extremely slippery. Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition.***

6.2. Environmental precautions

General Information

Do not allow material to contaminate ground water system. Prevent entry into waterways, sewers, basements or confined areas. Local authorities should be advised if significant spillages cannot be contained. See Section 12 for additional Ecological Information.***

6.3. Methods and material for containment and cleaning up

Methods for containment

If necessary dike the product with dry earth, sand or similar non-combustible materials.***

Methods for cleaning up

Dispose of contents/container in accordance with local regulation. In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.***

6.4. Reference to other sections

Personal protective equipment

See Section 8 for more detail.

Waste treatment

See section 13.

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling

For personal protection see section 8. Use only in well-ventilated areas. Avoid contact with...
Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

Do not contain substance with European workplace exposure limits in concentration above regulatory thresholds

Legend

See section 16

Predicted No Effect Concentration (PNEC)

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Water</th>
<th>Sediment</th>
<th>Soil</th>
<th>Air</th>
<th>STP</th>
<th>Oral</th>
</tr>
</thead>
<tbody>
<tr>
<td>A mixture of: 3,3'-dicyclohexyl-1,1'-methylenebis(4,1-p-phenylene)diurea; 3-cyclohexyl-1-(4-(4-(3-octadecyldiureido)benzyl)phenyl)urea; 3,3'-dioctadecyl-1,1'-methylenebis(4,1-p-phenylene)diurea</td>
<td>0.001 mg/l (fw) 0.0001 mg/l (mw) 0.010 mg/l (ir)</td>
<td>2.8 mg/kg sediment dw (fw) 0.280 mg/kg sediment dw (mw)</td>
<td>0.560 mg/kg soil dw</td>
<td></td>
<td>1 mg/l</td>
<td></td>
</tr>
</tbody>
</table>

8.2. Exposure controls

Prevention of fire and explosion

Take precautionary measures against static discharges.***

Hygiene measures

Ensure the application of strict rules of hygiene by the personnel exposed to the risk of contact with the product. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product. Provide regular cleaning of equipment, work area and clothing. Do not use abrasives, solvents or fuels. Do not dry hands with rags that have been contaminated with product. Do not put product contaminated rags into workwear pockets.***

7.2. Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions

Keep away from food, drink and animal feedingstuffs. Keep in a bunded area. Keep container tightly closed. Preferably keep in the original container. Otherwise, reproduce all the statutory information from the labels onto the new container. Do not remove the hazard labels of the containers (even if they are empty). Design the installations in order to avoid accidental emissions of product (due to seal breakage, for example) onto hot casings or electrical contacts. Store at room temperature. Protect from moisture.

Materials to avoid

Strong oxidising agents.

7.3. Specific use(s)

Specific use(s)

Please refer to Technical Data Sheet for further information.
Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>light yellow</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical state @20°C</td>
<td>solid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Odour</td>
<td>characteristic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Melting point/range</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>Not applicable</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

General Information

None under normal processing.***

10.2. Chemical stability

Stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions

No dangerous reaction known under conditions of normal use.***

10.4. Conditions to avoid

Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Keep away from heat and sparks.***

10.5. Incompatible materials

Materials to avoid

Strong oxidising agents.***

10.6. Hazardous Decomposition Products
HIGH TEMP MP

Revision Date: 2019-12-12

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity Local effects Product Information

**Skin contact**
- Not classified based on available data. High pressure injection of the products under the skin may have very serious consequences even though no symptom or injury may be apparent.

**Eye contact**
- Not classified based on available data.

**Inhalation**
- Not classified based on available data.

**Ingestion**
- Not classified based on available data. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

**ATEmix (inhalation-dust/mist)** 34.90 mg/l
**ATEmix (inhalation-vapour)** 159.40 mg/l

Acute toxicity - Component Information

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>O,O,O-tris(2(or 4)-C9-10-isoalkylphenyl) phosphorothioate</td>
<td>LD50 &gt; 2000 mg/kg (Rat - OECD 401)</td>
<td>LD50 &gt; 2000 mg/kg (Rat - OECD 402)</td>
<td></td>
</tr>
</tbody>
</table>

**Sensitisation**

- Not classified based on available data.

**Specific effects**

- Carcinogenicity: Not classified based on available data.
- Mutagenicity: Not classified based on available data.
- Germ cell mutagenicity: Not classified based on available data.
- Reproductive toxicity: Not classified based on available data.
- Repeated dose toxicity: Not classified based on available data.

**Target Organ Effects (STOT)**

- Specific target organ systemic toxicity (single exposure): Not classified based on available data.
- Specific target organ toxicity - repeated exposure: Not classified based on available data.
- Aspiration toxicity: Not classified based on available data.
Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Harmful to aquatic life with long lasting effects.

**Acute aquatic toxicity - Product Information***

No information available.

**Acute aquatic toxicity - Component Information**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Toxicity to algae</th>
<th>Toxicity to daphnia and other aquatic invertebrates.</th>
<th>Toxicity to fish</th>
<th>Toxicity to microorganisms</th>
</tr>
</thead>
<tbody>
<tr>
<td>A mixture of: 3,3'-dicyclohexyl-1,1'-methylenbis(4,1-phenylene)diurea; 3-cyclohexyl-1-(4-(4-(3-octadecylureido)benzyl)phenyl)urea; 3,3'-dioctadecyl-1,1'-methylenebenzenebis(4,1-phenylene)diurea</td>
<td>EC50 (72h) &gt; 100 mg/l (Algae - OECD 201)</td>
<td>EC50 (24h) 5.5 mg/l (Daphnia magna - OECD 202)</td>
<td>LC50 (96h) &gt; 25 mg/l (Brachydanio rerio - OECD 203)</td>
<td>EC50 (3h) &gt; 100 mg/l (OECD 209)</td>
</tr>
<tr>
<td>O,O,O-Tris(2(or 4)-C9-10-isalkylyphenyl)phosphorothioate 126019-82-7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Chronic aquatic toxicity - Product Information**

No information available.

**Chronic aquatic toxicity - Component Information**

No information available.

**Effects on terrestrial organisms**

No information available.***

12.2. Persistence and Degradability

**General Information**

No information available.

12.3. Bioaccumulative potential
Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

| Wastes from residues / unused products | Should not be released into the environment. Do not empty into drains. Dispose of in accordance with the European Directives on waste and hazardous waste. |
| Contaminated packaging | Empty containers should be taken to an approved waste handling site for recycling or disposal.*** |
| EWC Waste Disposal No | According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: 12 01 12. |

Other information

Refer to section 8 for safety and protective measures for disposal personnel.

Section 14: TRANSPORT INFORMATION

ADR/RID

not regulated

IMDG/IMO

not regulated

ICAO/IATA

not regulated

ADN

not regulated***

Equipment Requirements

PP
Section 15: REGULATORY INFORMATION

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

European Union

REACH
All substances contained in this mixture have been pre-registered, registered or are exempt from registration in accordance with Regulation (CE) No. 1907/2006 (REACH)

International Inventories
All the substances contained in this product are listed or exempted from listing in the following inventories:
- Australia (AICS)
- Korea (KECL)
- U.S.A. (TSCA)
- Canada (DSL/NDSL)
- China (IECSC)
- Philippines (PICCS)***

Further information
No information available

15.2. Chemical Safety Assessment
Chemical Safety Assessment No information available

15.3. National regulatory information

The United Kingdom

• Avoid exceeding occupational exposure limits (see section 8).

Ireland

• Avoid exceeding occupational exposure limits (see section 8).

Section 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3
H411 - Toxic to aquatic life with long lasting effects
H412 - Harmful to aquatic life with long lasting effects
H413 - May cause long lasting harmful effects to aquatic life

Abbreviations, acronyms
ACGIH = American Conference of Governmental Industrial Hygienists
bw = body weight
bw/day = body weight/day
EC x = Effect Concentration associated with x% response
GLP = Good Laboratory Practice
IARC = International Agency for Research of Cancer
LC50 = 50% Lethal concentration - Concentration of a chemical in air or a chemical in water which causes the death of 50% (one half) of a group of test animals
LD50 = 50% Lethal Dose - Chemical amount, given at once, which causes the death of 50% (one half) of a group of test animals
LL = Lethal Loading
NIOSH = National Institute of Occupational Safety and Health
NOAEL = No Observed Adverse Effect Level
NOEC = No Observed Effect Concentration
NOEL = No Observed Effect Level
OECD = Organization for Economic Co-operation and Development
OSHA = Occupational Safety and Health Administration
UVCB = Substance of unknown or Variable composition, Complex reaction products or Biological material
ATE = Acute Toxicity Estimate
QSAR = Quantitative Structure-Activity Relationship
EL50 = median Effective Loading
NOELR = No Observed Effect Loading Rate
PAH = Polycyclic aromatic hydrocarbons
LOEC = Lowest Observed Effect Concentration
PVA = Polyvinyl alcohol
PVC = Polyvinyl chloride
ECOSAR = Ecological Structure Activity Relationships
CNS = Central nervous system
EPA = Environmental Protection Agency
ErL50 = effective loading on growth rate in algae test, to cause a 50% response
Ebl50 = effective loading on growth with the control in algae test, to cause a 50% response
DNEL = Derived No Effect Level
PNEC = Predicted No Effect Concentration
dw = dry weight
fw = fresh water
mw = marine water
or = occasional release

Legend Section 8

OEL = Occupational Exposure Limit
TWA: Time Weight Average
STEL: Short Time Exposure Limit
PEL: Permissible exposure limit
REL: Recommended exposure limit
TLV: Threshold Limit Values

| + | Sensitiser |
| ** | Hazard Designation |
| M | Mutagen |

* Skin designation
C: Carcinogen
R: Toxic to reproduction

Revision Date: 2019-12-12
Revision Note: *** Indicates updated section.
This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006
This safety data sheet serves to complete but not to replace the technical product sheets. The information contained herein is given in good faith and is accurate to the best of knowledge at the date indicated above. It is understood by the user that any use of the product for purposes other than those for which it was designed entails potential risk. The information given herein in no way dispenses the user from knowing and applying all provisions regulating his activity. The user bears sole liability for the precautions required when using the product. The regulatory texts indicated herein are intended to aid the user to fulfill his obligations. This list is not to be considered complete and exhaustive. It is the user's responsibility to ensure that he is subject to no other obligations than those mentioned.

End of Safety Data Sheet
LUBGES-AI-35459

1. Exposure scenario

Formulation additives, lubricants and greases, Industrial.

Use Descriptor
Sector of use
SU10 - Formulation
SU3 - Industrial Manufacturing (all)

Process category
PROC1 - Use in closed process, no likelihood of exposure
PROC2 - Use in closed, continuous process with occasional controlled exposure
PROC3 - Use in closed batch process (synthesis or formulation)
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC15 - Use as laboratory reagent

Environmental release category
ERC2 - Formulation of preparations

Specific Environmental Release Category

Processes, tasks, activities covered
Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small scale packing, sampling, maintenance.

2. Operational conditions and risk management measures

2.1. Control of environmental exposure

Amounts used
Production volume in EU (tons/year) : 1.00E+04

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): 300

Environment factors not influenced by risk management

Local freshwater dilution factor: 10
Local marine water dilution factor: 100

Other operational conditions of use 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 RMMs and before (municipal) sewage treatment plant): 4.00E-11
Release fraction to soil from process (after typical onsite RMMs): 0

Technical conditions and measures at process level 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 soil
Prevent discharge of undissolved substance to or recover from onsite wastewater
User sites are assumed to be provided with oil/water separators and for waste water to be discharged via public sewer system

Treat air emission to provide a typical removal efficiency of (%): 70
2.2. Control of exposure - Workers or Consumers

Product characteristics

<table>
<thead>
<tr>
<th>2.2a. Control of worker exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contributing Scenarios</td>
</tr>
</tbody>
</table>

Remarks
No exposure assessment presented for human health.

<table>
<thead>
<tr>
<th>2.2b. Control of consumer exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Category(ies)</td>
</tr>
</tbody>
</table>

Remarks
Not applicable.

3. Exposure estimation and references

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.

Environment
Used ECETOC TRA model.

4. Guidance for Downstream User (DU) to check compliance with the Exposure scenario

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

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

General
For further information see www.atiel.org/reach/introduction
1. Exposure scenario

General use of lubricants and greases in vehicles or machinery. Industrial.

Use Descriptor
Sector of use
SU3 - Industrial Manufacturing (all)

Process category
PROC1 - Use in closed process, no likelihood of exposure
PROC2 - Use in closed, continuous process with occasional controlled exposure
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

Environmental release category
ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
ERC7 - Industrial use of substances in closed systems

Specific Environmental Release Category

Processes, tasks, activities covered
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.

2. Operational conditions and risk management measures

2.1. Control of environmental exposure

Amounts used
Production volume in EU (tons/year) : 2.63E+03

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): 300

Environment factors not influenced by risk management

Local freshwater dilution factor: 10
Local marine water dilution factor: 100

Other operational conditions of use 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 RMMs and before (municipal) sewage treatment plant): 4.00E-11
Release fraction to soil from process (after typical onsite RMMs): 0

Technical conditions and measures at process level 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 soil
Prevent discharge of undissolved substance to or recover from onsite wastewater
User sites are assumed to be provided with oil/water separators and for waste water to be discharged via public sewer system

Organizational measures to prevent/limit release from the site
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to municipal sewage treatment plant
Estimated substance removal from wastewater via domestic sewage treatment (%): 69
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d): 3 797 024
Assumed domestic sewage treatment plant flow (m³/d): 2.00E+03

Conditions and measures related to external treatment of waste for disposal
External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste
External recovery and recycling of waste should comply with applicable local and/or national regulations.

### 2.2. Control of exposure - Workers or Consumers

#### 2.2a. Control of worker exposure

<table>
<thead>
<tr>
<th>Contributing Scenarios</th>
<th>Operational conditions and risk management measures</th>
</tr>
</thead>
</table>

Remarks
No exposure assessment presented for human health.

#### 2.2b. Control of consumer exposure

<table>
<thead>
<tr>
<th>Product Category(ies)</th>
<th>Operational conditions and risk management measures</th>
</tr>
</thead>
</table>

Remarks
Not applicable.

### 3. Exposure estimation and references

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.

Environment
Used ECETOC TRA model.

### 4. Guidance for Downstream User (DU) to check compliance with the Exposure scenario

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

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

General
For further information see www.atiel.org/reach/introduction
1. Exposure scenario

General use of lubricants and greases in vehicles or machinery. Professional.

Use Descriptor
Sector of use
SU22 – Professional uses

Process category
PROC1 - Use in closed process, no likelihood of exposure
PROC2 - Use in closed, continuous process with occasional controlled exposure
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC20 - Heat and pressure transfer fluids in dispersive, professional use but closed systems

Environmental release category
ERC9a - Wide dispersive indoor use of substances in closed systems
ERC9b - Wide dispersive outdoor use of substances in closed systems

Specific Environmental Release Category

Processes, tasks, activities covered
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.

2. Operational conditions and risk management measures

2.1. Control of environmental exposure

Amounts used
Production volume in EU (tons/year) : 5.39E+03

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

Environment factors not influenced by risk management

Local freshwater dilution factor: 10
Local marine water dilution factor: 100

Other operational conditions of use 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): 1.00E-03

Technical conditions and measures at process level 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 soil
Prevent discharge of undissolved substance to or recover from onsite wastewater

Organizational measures to prevent/limit release from the site
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to municipal sewage treatment plant

Conditions and measures related to municipal sewage treatment plant
Estimated substance removal from wastewater via domestic sewage treatment (%): 69
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d): 9 555
Assumed domestic sewage treatment plant flow (m³/d): 2.00E+03

**Conditions and measures related to external treatment of waste for disposal**
External treatment and disposal of waste should comply with applicable local and/or national regulations.

**Conditions and measures related to external recovery of waste**
External recovery and recycling of waste should comply with applicable local and/or national regulations.

### 2.2. Control of exposure - Workers or Consumers

#### Product characteristics

#### 2.2a. Control of worker exposure

<table>
<thead>
<tr>
<th>Contributing Scenarios</th>
<th>Operational conditions and risk management measures</th>
</tr>
</thead>
</table>

**Remarks**
No exposure assessment presented for human health.

#### 2.2b. Control of consumer exposure

<table>
<thead>
<tr>
<th>Product Category(ies)</th>
<th>Operational conditions and risk management measures</th>
</tr>
</thead>
</table>

**Remarks**
Not applicable.

### 3. Exposure estimation and references

**Health**
The risk Management Mesures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product.

**Environment**
Used ECETOC TRA model.

### 4. Guidance for Downstream User (DU) to check compliance with the Exposure scenario

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

**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/en/reach-for-industries-libraries html). If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

**General**
For further information see www.atiel.org/reach/introduction
LUBGES-CI-35459

1. Exposure scenario
Use of lubricants and greases in open systems. Industrial.

Use Descriptor
Sector of use
SU3 - Industrial Manufacturing (all)

Process category
PROC1 - Use in closed process, no likelihood of exposure
PROC2 - Use in closed, continuous process with occasional controlled exposure
PROC7 - Industrial spraying
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC10 - Roller application or brushing
PROC13 - Treatment of articles by dipping and pouring

Environmental release category
ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Specific Environmental Release Category

Processes, tasks, activities covered
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.

2. Operational conditions and risk management measures

2.1. Control of environmental exposure

Amounts used
Production volume in EU (tons/year) : 3.81E+02
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): 300

Environment factors not influenced by risk management
Local freshwater dilution factor: 10
Local marine water dilution factor: 100

Other operational conditions of use 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 RMMs and before (municipal) sewage treatment plant): 4.00E-11
Release fraction to soil from process (after typical onsite RMMs): 0

Technical conditions and measures at process level 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 soil
Prevent discharge of undissolved substance to or recover from onsite wastewater
User sites are assumed to be provided with oil/water separators and for waste water to be discharged via public sewer system

Treat air emission to provide a typical removal efficiency of (%): 70
Organizational measures to prevent/limit release from the site
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

**Conditions and measures related to municipal sewage treatment plant**

Estimated substance removal from wastewater via domestic sewage treatment (%): 69  
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d): 549 647  
Assumed domestic sewage treatment plant flow (m3/d): 2.00E+03  

**Conditions and measures related to external treatment of waste for disposal**  
External treatment and disposal of waste should comply with applicable local and/or national regulations.

**Conditions and measures related to external recovery of waste**  
External recovery and recycling of waste should comply with applicable local and/or national regulations.

### 2.2. Control of exposure - Workers or Consumers

#### 2.2a. Control of worker exposure

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**Remarks**  
No exposure assessment presented for human health.

#### 2.2b. Control of consumer exposure

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<thead>
<tr>
<th>Product Category(ies)</th>
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</tr>
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</table>

**Remarks**  
Not applicable.

### 3. Exposure estimation and references

**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.

**Environment**  
Used ECETOC TRA model.

### 4. Guidance for Downstream User (DU) to check compliance with the Exposure scenario

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

**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/en/reach-for-industries-libraries.html).  
If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

**General**  
For further information see www.atiel.org/reach/introduction
1. Exposure scenario

Use of lubricants and greases in open systems. Professional.

Use Descriptor
Sector of use
SU22 – Professional uses

Process category
PROC1 - Use in closed process, no likelihood of exposure
PROC2 - Use in closed, continuous process with occasional controlled exposure
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
PROC10 - Roller application or brushing
PROC11 - Non industrial spraying
PROC13 - Treatment of articles by dipping and pouring

Environmental release category
ERC8a - Wide dispersive indoor use of processing aids in open systems
ERC8d - Wide dispersive outdoor use of processing aids in open systems

Specific Environmental Release Category

Processes, tasks, activities covered
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.

2. Operational conditions and risk management measures

2.1. Control of environmental exposure

Amounts used
Production volume in EU (tons/year) : 2.24E+02

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

Environment factors not influenced by risk management

Local freshwater dilution factor: 10
Local marine water dilution factor: 100

Other operational conditions of use 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): 1.00E-03

Technical conditions and measures at process level 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 soil
Prevent discharge of undissolved substance to or recover from onsite wastewater

Organizational measures to prevent/limit release from the site
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to municipal sewage treatment plant
2.2. Control of exposure - Workers or Consumers

Product characteristics

### 2.2a. Control of worker exposure

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</table>

**Remarks**
No exposure assessment presented for human health.

### 2.2b. Control of consumer exposure

<table>
<thead>
<tr>
<th>Product Category(ies)</th>
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</table>

**Remarks**
Not applicable.

3. Exposure estimation and references

**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.

**Environment**
Used ECETOC TRA model.

4. Guidance for Downstream User (DU) to check compliance with the Exposure scenario

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

**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/en/reach-for-industries-libraries.html).
If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

**General**
For further information see www.atiel.org/reach/introduction