Safety Data Sheet
SVITOL SPRAY ML 200

Safety Data Sheet dated 27/3/2023, version 20

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

1.1. Product identifier

Mixture identification:

Trade name: SVITOL SPRAY ML 200

Trade code: 7608

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

Recommended use:

spray lubricant

Releasing product/lubricant

Detergent/cleaner

Reactivator for electrical contacts

Protective/anti-rust treatment

Uses advised against:

Strictly adhere to the recommended uses.

1.3. Details of the supplier of the safety data sheet

Supplier:

Arexons S.p.A.

via Antica di Cassano, 23, 20063

Cernusco sul Naviglio (MI), Italy

Arexons S.p.A.

Tel. +39 (0)2/924361 - Fax +39 (0)2/92436306

Competent person responsible for the safety data sheet:

arexons@arexons.it

1.4. Emergency telephone number

Arexons S.p.A.

Tel. +39 (0)2/924361 - Fax +39 (0)2/92436306

In England and Wales: NHS 111 - dial 111

In Scotland: NHS 24 - dial 111

In Ireland: Beaumont Hospital - National Poisons Information Centre 01 809 2166 (7days, 8:00 - 22:00)

In South Africa: Poison Information Helpline 0861 555 777

In Malta: emergency number 112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

EC regulation criteria 1272/2008 (CLP):

Warning, Aerosols 2, Flammable aerosol. Pressurized container: may burst if heated.

Warning, STOT SE 3, May cause drowsiness or dizziness.

EUH066 Repeated exposure may cause skin dryness or cracking.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

Hazard pictograms:

Warning

Hazard statements:

H223, H229 Flammable aerosol. Pressurized container: may burst if heated.

H336 May cause drowsiness or dizziness.

Precautionary statements:

P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P103 Read carefully and follow all instructions.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211 Do not spray on an open flame or other ignition source.
P251 Do not pierce or burn, even after use.
P271 Use only outdoors or in a well-ventilated area.
P405 Store locked up.
P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122°F.
P501 Dispose of contents/container in accordance with applicable regulations.

Special Provisions:

EUH066 Repeated exposure may cause skin dryness or cracking.

Contains

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics

Special provisions according to Annex XVII of REACH and subsequent amendments:

None

Regulation (EC) nr 648/2004 (detergents).
Product contents:
Aliphatic hydrocarbons > 30 %

2.3. Other hazards

No PBT, vPvB or endocrine disruptor substances present in concentration >= 0.1%

Other Hazards:

No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

Hazardous components within the meaning of the CLP regulation and related classification:

>= 60% - < 70% Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics
REACH No.: 01-2119463258-33, CAS: 64742-48-9, EC: 919-857-5
2.6/3 Flam. Liq. 3 H226
3.10/1 Asp. Tox. 1 H304
3.8/3 STOT SE 3 H336
EUH066
DECLP (CLP)*

>= 3% - < 5% Chilled liquid carbon dioxide
CAS: 124-38-9, EC: 204-696-9
2.5/RL Press Gas (Ref. Liq.) H281

>= 1% - < 2% Benzenesulfonic acid , mono-C16-24-alkyl derivs, calcium salts
REACH No.: 01-2119492616-28, CAS: 70024-69-0, EC: 274-263-7
3.3/2 Eye Irrit. 2 H319

>= 0.5% - < 1% Baseoil - unspecified.
REACH No.: 01-2119484627-25, CAS: 64742-54-7, EC: 265-157-1
3.10/1 Asp. Tox. 1 H304
DECLL (CLP)*

>= 0.1% - < 0.25% Mineral oil - mixture -
REACH No.: 01-2119487077-29, EC: 265-158-7
3.10/1 Asp. Tox. 1 H304

>= 0.1% - < 0.25% 2,6-di-tert-butylphenol
REACH No.: 01-2119490822-33, CAS: 128-39-2, EC: 204-884-0
3.2/2 Skin Irrit. 2 H315
4.1/A1 Aquatic Acute 1 H400
4.1/C1 Aquatic Chronic 1 H410

>= 0.02% - < 0.05% 2-Ethylhexan-1-ol
REACH No.: 01-2119487289-20, CAS: 104-76-7, EC: 203-234-3
3.1/4/Inhal Acute Tox. 4 H332
3.2/2 Skin Irrit. 2 H315
3.3/2 Eye Irrit. 2 H319
3.8/3 STOT SE 3 H335

*DECLP (CLP): Substance classified in accordance with Note P, Annex VI of EC Regulation (EC) 1272/2008. The harmonised classification as a carcinogen or mutagen applies unless it can be shown that the substance contains less than 0,1 % w/w benzene (Einecs No 200-753-7), in which case a classification in accordance with Title II of this Regulation shall be performed also for those hazard classes. Where the substance is not classified as a carcinogen or mutagen, at least the precautionary statements (P102-)P260-P262-P301 + P310-P331 shall apply.
*DECLL (CLP): Substance classified in accordance with Note L, Annex VI of EC Regulation (EC) 1272/2008. The harmonised classification as a carcinogen applies unless it can be shown that the substance contains less than 3 % of dimethyl sulphoxide extract as measured by IP 346 (“Determination of polycyclic aromatics in unused lubricating base oils and asphaltene free petroleum fractions – Dimethyl sulphoxide extraction refractive index method” Institute of Petroleum, London), in which case a classification in accordance with Title II of this Regulation shall be performed also for that hazard class.

SECTION 4: First aid measures

4.1. Description of first aid measures
In case of skin contact:
Immediately take off all contaminated clothing.
Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap.
Wash thoroughly the body (shower or bath).
Remove contaminated clothing immediately and dispose off safely.
In case of eyes contact:
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
In case of Ingestion:
Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.
In case of Inhalation:
Remove casualty to fresh air and keep warm and at rest.
4.2. Most important symptoms and effects, both acute and delayed
None
4.3. Indication of any immediate medical attention and special treatment needed
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).
Treatment:
None

SECTION 5: Firefighting measures

5.1. Extinguishing media
Appropriate Extinguishing Media:
To carbon dioxide.
To dust.
Foam
Water spray.
Not Recommended Extinguishing Media:
Do not use direct water jets.

5.2. Special hazards arising from the substance or mixture
Do not inhale explosion and combustion gases.
Burning produces heavy smoke.

5.3. Advice for firefighters
Use suitable breathing apparatus .
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Wear personal protection equipment.
Remove all sources of ignition.
Remove persons to safety.
See protective measures under point 7 and 8.

6.2. Environmental precautions
Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.
Retain contaminated washing water and dispose it.
In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.
Suitable material for taking up: absorbing material, organic, sand

6.3. Methods and material for containment and cleaning up
Wash with plenty of water.

6.4. Reference to other sections
See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Avoid contact with skin and eyes, inhalation of vapours and mists.
Don't use empty container before they have been cleaned.
Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.
See also section 8 for recommended protective equipment.
Advice on general occupational hygiene:
Contamined clothing should be changed before entering eating areas.
Do not eat or drink while working.

7.2. Conditions for safe storage, including any incompatibilities
Store at below 50 °C. Keep away from unguarded flame and heat sources. Avoid direct exposure to sunlight.
Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.
Keep away from food, drink and feed.
None in particular.
Instructions as regards storage premises:
Cool and adequately ventilated.

7.3. Specific end use(s)
None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics - CAS: 64742-48-9

ACGIH - TWA: 1200 mg/m3, 197 ppm

Chilled liquid carbon dioxide - CAS: 124-38-9

EU - TWA(8h): 9000 mg/m3, 5000 ppm

ACGIH - TWA(8h): 5000 ppm - STEL: 30000 ppm - Notes: Asphyxia

Baseoil - unspecified. - CAS: 64742-54-7

EU - TWA: 5 mg/m3

Mineral oil - mixture -

EU - TWA(8h): 5 mg/m3

2-Ethylhexan-1-ol - CAS: 104-76-7

EU - TWA(8h): 5.4 mg/m3, 1 ppm

DNEL Exposure Limit Values

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics - CAS: 64742-48-9

Worker Professional: 208 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects

Worker Professional: 871 mg/m3 - Exposure: Human Inhalation - Frequency: Long Term, systemic effects

Consumer: 125 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects

Consumer: 185 mg/m3 - Exposure: Human Inhalation - Frequency: Long Term, systemic effects

Consumer: 125 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects

PNEC Exposure Limit Values

N.A.

8.2. Exposure controls

Eye protection:

Eye glasses with side protection.

Compliant with EN 166

Protection for skin:

protective clothing

Protection for hands:

Nitrile or Viton gloves.

Compliant with EN 374.

Respiratory protection:

Half-mask with integrated filters (EN 405)

Thermal Hazards:

None

Environmental exposure controls:

None

Appropriate engineering controls:

None

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Method:	Notes:
Physical state:	Liquid	--	--
Colour:	Yellow	--	--
Odour:	Characteristic	--	--
Melting point/freezing point:	N.A.	--	--

Boiling point or initial boiling point and boiling range:	> 150 °C (fase liquida)	--	--
Flammability:	N.A.	--	--
Lower and upper explosion limit:	N.A.	--	--
Flash point:	44,5°C (fase liquida)	--	--
Auto-ignition temperature:	N.A.	--	--
Decomposition temperature:	N.A.	--	--
pH:	N.A.	--	--
Kinematic viscosity:	N.A.	--	--
Solubility in water:	Insoluble	--	--
Solubility in oil:	N.A.	--	--
Partition coefficient n-octanol/water (log value):	N.A.	--	--
Vapour pressure:	N.A.	--	--
Density and/or relative density:	0.830 g/cm3	--	--
Relative vapour density:	N.A.	--	--
Particle characteristics:			
Particle size:	N.A.	--	--

9.2. Other information
No other relevant information

SECTION 10: Stability and reactivity

10.1. Reactivity
Stable under normal conditions
10.2. Chemical stability
Stable under normal conditions
10.3. Possibility of hazardous reactions
None
10.4. Conditions to avoid
Stable under normal conditions.
10.5. Incompatible materials
Avoid contact with combustible materials. The product could catch fire.
10.6. Hazardous decomposition products
Thermal decomposition or combustion may generate fumes, carbon monoxide, carbon dioxide,

sulphur oxides, mercaptans, sulphides, including sulphuric acid and other incomplete combustion products.
Thermal decomposition can generate phosphorus oxides and other compounds containing phosphorus.

SECTION 11: Toxicological information

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

Toxicological information of the product:

SVITOL SPRAY ML 200

a) acute toxicity
Not classified
Based on available data, the classification criteria are not met

b) skin corrosion/irritation
Not classified
Based on available data, the classification criteria are not met

c) serious eye damage/irritation
Not classified
Based on available data, the classification criteria are not met

d) respiratory or skin sensitisation
Not classified
Based on available data, the classification criteria are not met

e) germ cell mutagenicity
Not classified
Based on available data, the classification criteria are not met

f) carcinogenicity
Not classified
Based on available data, the classification criteria are not met

g) reproductive toxicity
Not classified
Based on available data, the classification criteria are not met

h) STOT-single exposure
The product is classified: STOT SE 3 H336

i) STOT-repeated exposure
Not classified
Based on available data, the classification criteria are not met

j) aspiration hazard
Not classified
Based on available data, the classification criteria are not met

Toxicological information of the main substances found in the product:

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics - CAS: 64742-48-9

a) acute toxicity:
Test: LC50 - Route: Inhalation - Species: Rat > 5000 mg/m3 - Duration: 4h - Source: ECHA BP - SUPPLIER SDS
Test: LD50 - Route: Oral - Species: Rat > 5000 mg/kg - Source: ECHA BP - SUPPLIER SDS
Test: LD50 - Route: Skin - Species: Rabbit > 5000 mg/kg - Source: ECHA BP - SUPPLIER SDS

h) STOT-single exposure:
Test: May cause drowsiness and dizziness. Positive - Source: SUPPLIER SDS - No data available for the product

i) STOT-repeated exposure:
Test: OECD 422 Negative - Source: SUPPLIER SDS
Test: NOAEL - Route: Oral - Species: Rat > 1000 mg/kg - Source: ECHA BP
Test: NOAEL - Route: Inhalation - Species: Rat 200 Ppm - Source: ECHA BP
Test: NOAEC - Route: Inhalation - Species: Rat > 275 mg/m3 - Source: ECHA BP

j) aspiration hazard:

Test: May be fatal if swallowed and enters airways (physical-chemical properties) - Route: Oral - Source: SUPPLIER SDS
Baseoil - unspecified. - CAS: 64742-54-7
f) carcinogenicity:
Negative
h) STOT-single exposure:
Test: Respiratory Tract Irritant Positive
j) aspiration hazard:
Test: May be fatal if swallowed and enters airways (physical-chemical properties) Positive
Mineral oil - mixture -
h) STOT-single exposure:
Test: Respiratory Tract Irritant Positive
2,6-di-tert-butylphenol - CAS: 128-39-2
h) STOT-single exposure:
Test: Respiratory Tract Irritant Positive
i) STOT-repeated exposure:
Test: oecd 16 - Route: Oral - Species: Rat Positive
2-Ethylhexan-1-ol - CAS: 104-76-7
d) respiratory or skin sensitisation:
Test: Skin Sensitization Negative
e) germ cell mutagenicity:
Test: Mutagenesis Negative
g) reproductive toxicity:
Test: Reproductive Toxicity - Route: Skin - Species: Rat Negative
h) STOT-single exposure:
Test: Respiratory Tract Irritant Positive
i) STOT-repeated exposure:
Test: oecd 16 - Route: Skin - Species: Rat Positive

11.2. Information on other hazards
Endocrine disrupting properties:
No endocrine disruptor substances present in concentration >= 0.1%

SECTION 12: Ecological information

12.1. Toxicity
Adopt good working practices, so that the product is not released into the environment.
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics - CAS: 64742-48-9
a) Aquatic acute toxicity:
Endpoint: EL0 - Species: Daphnia 1000 mg/l - Duration h: 48
Endpoint: EL50 - Species: Algae > 1000 mg/l - Duration h: 72
Endpoint: LL50 - Species: Fish > 1000 mg/l - Duration h: 96
Endpoint: NOELR - Species: Algae 100 mg/l - Duration h: 72
Baseoil - unspecified. - CAS: 64742-54-7
a) Aquatic acute toxicity:
Endpoint: LC50 - Species: Fish > 100 mg/l - Duration h: 96
Endpoint: EC50 - Species: Daphnia > 10000 mg/l - Duration h: 48
Endpoint: EC50 - Species: Daphnia > 10 mg/l - Duration h: 48
Endpoint: EC50 - Species: Daphnia > 10 mg/l - Duration h: 48
Endpoint: EC50 - Species: Algae > 100 mg/l - Duration h: 96
Mineral oil - mixture -
a) Aquatic acute toxicity:
Endpoint: LC50 - Species: Fish > 1000 mg/l - Duration h: 96
Endpoint: EC50 - Species: Daphnia > 10000 mg/l - Duration h: 48
Endpoint: EC50 - Species: Daphnia > 10 mg/l - Duration h: 504
Endpoint: NOEC - Species: Daphnia > 10 mg/l - Duration h: 504
Endpoint: EC50 - Species: Algae > 100 mg/l - Duration h: 72

2,6-di-tert-butylphenol - CAS: 128-39-2
a) Aquatic acute toxicity:
Endpoint: LC50 - Species: Fish 1.4 mg/l - Duration h: 96
Endpoint: LC50 - Species: Fish 13 mg/l - Duration h: 96
Endpoint: EC50 - Species: Daphnia 0.45 mg/l - Duration h: 48
Endpoint: EC50 - Species: Daphnia 0.8 mg/l - Duration h: 48
Endpoint: EC50 - Species: Algae 3.6 mg/l - Duration h: 72
c) Bacteria toxicity:
Endpoint: EC50 - Species: fanghi > 1000 mg/l - Duration h: 2.4
2-Ethylhexan-1-ol - CAS: 104-76-7
a) Aquatic acute toxicity:
Endpoint: LC50 - Species: Fish 28.2 mg/l - Duration h: 96
Endpoint: NOEC - Species: Fish 14 mg/l - Duration h: 96
Endpoint: LC50 - Species: Fish 17.1 mg/l - Duration h: 96
Endpoint: EC50 - Species: Daphnia 39 mg/l - Duration h: 48
Endpoint: EC50 - Species: Algae 16.6 mg/l - Duration h: 72
c) Bacteria toxicity:
Endpoint: EC50 - Species: fanghi 540 mg/l - Duration h: 2.4
Endpoint: EC50 - Species: fanghi > 100 mg/l - Duration h: 12

12.2. Persistence and degradability
None
SVITOL SPRAY ML 200
Biodegradability: 4 - %: 86.7 - Notes: CEC L-33-T-82
Baseoil - unspecified. - CAS: 64742-54-7
Test: BIOGDG06 - Duration: 28gg - %: 31
Mineral oil - mixture -
Test: BIOGDG06 - Duration: 28gg - %: 31
2,6-di-tert-butylphenol - CAS: 128-39-2
Test: BIOGDG06 - Duration: 28gg - %: 5
2-Ethylhexan-1-ol - CAS: 104-76-7
Test: BIOGDG07 - Duration: 28gg - %: 95
Test: BIOGDG09 - Duration: 28gg - %: 100

12.3. Bioaccumulative potential
2,6-di-tert-butylphenol - CAS: 128-39-2
Test: Kow - Partition coefficient 4.5
2-Ethylhexan-1-ol - CAS: 104-76-7
Test: BCF - Bioconcentrantion factor 25.35
Test: Kow - Partition coefficient 2.9

12.4. Mobility in soil
N.A.

12.5. Results of PBT and vPvB assessment
vPvB Substances: None - PBT Substances: None

12.6. Endocrine disrupting properties
No endocrine disruptor substances present in concentration >= 0.1%

12.7. Other adverse effects
None

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

SECTION 14: Transport information

14.1. UN number or ID number

ADR-UN Number:	1950
IATA-UN Number:	1950
IMDG-UN Number:	1950

14.2. UN proper shipping name

ADR-Shipping Name:	AEROSOLS
IATA-Shipping Name:	AEROSOLS
IMDG-Shipping Name:	AEROSOLS

14.3. Transport hazard class(es)

ADR-Class:	2
ADR - Hazard identification number:	-
IATA-Class:	2
IATA-Label:	2.1
IMDG-Class:	2
Sea (IMO):	2 UN 1950

14.4. Packing group

ADR-Packing Group:	-
IATA-Packing group:	-
IMDG-Packing group:	-

14.5. Environmental hazards

ADR-Enviromental Pollutant:	No
IMDG-Marine pollutant:	No
IMDG-EmS:	F-D, S-U

14.6. Special precautions for user

ADR-Subsidiary hazards:	See SP63
ADR-S.P.:	190 327 344 625
ADR-Transport category (Tunnel restriction code):	2 (D)
IATA-Passenger Aircraft:	203
IATA-Subsidiary hazards:	See SP63
IATA-Cargo Aircraft:	203
IATA-S.P.:	A145 A167 A802
IATA-ERG:	10L
IMDG-Subsidiary hazards:	See SP63
IMDG-Stowage and handling:	SW1 SW22
IMDG-Segregation:	SG69

14.7. Maritime transport in bulk according to IMO instruments

N.A.
Limited Quantity: 1 L
Exempted Quantity: E0

SECTION 15: Regulatory information

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

Dir. 98/24/EC (Risks related to chemical agents at work)
Dir. 2000/39/EC (Occupational exposure limit values)
Regulation (EC) n. 1907/2006 (REACH)
Regulation (EC) n. 1272/2008 (CLP)
Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013
Regulation (EU) n. 2020/878
Regulation (EU) n. 286/2011 (ATP 2 CLP)
Regulation (EU) n. 618/2012 (ATP 3 CLP)

Regulation (EU) n. 487/2013 (ATP 4 CLP)
Regulation (EU) n. 944/2013 (ATP 5 CLP)
Regulation (EU) n. 605/2014 (ATP 6 CLP)
Regulation (EU) n. 2015/1221 (ATP 7 CLP)
Regulation (EU) n. 2016/918 (ATP 8 CLP)
Regulation (EU) n. 2016/1179 (ATP 9 CLP)
Regulation (EU) n. 2017/776 (ATP 10 CLP)
Regulation (EU) n. 2018/669 (ATP 11 CLP)
Regulation (EU) n. 2018/1480 (ATP 13 CLP)
Regulation (EU) n. 2019/521 (ATP 12 CLP)
Regulation (EU) n. 2020/217 (ATP 14 CLP)
Regulation (EU) n. 2020/1182 (ATP 15 CLP)
Regulation (EU) n. 2021/643 (ATP 16 CLP)

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restrictions related to the product:

Restriction 3
Restriction 40

Restrictions related to the substances contained:

No restriction.

Volatile Organic compounds - VOCs = 72.78 %
Volatile Organic compounds - VOCs = 727.83 g/Kg
Volatile Organic compounds - VOCs = 604.09 g/l

Where applicable, refer to the following regulatory provisions :

Directive 2012/18/EU (Seveso III)
Regulation (EC) nr 648/2004 (detergents).
Dir. 2004/42/EC (VOC directive)

Provisions related to directive EU 2012/18 (Seveso III):

Seveso III category according to Annex 1, part 1

Product belongs to category: P3b

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for the mixture.

Substances for which a Chemical Safety Assessment has been carried out:

None

SECTION 16: Other information

Text of phrases referred to under heading 3:

H226 Flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H336 May cause drowsiness or dizziness.
EUH066 Repeated exposure may cause skin dryness or cracking.
H281 Contains refrigerated gas; may cause cryogenic burns or injury.
H319 Causes serious eye irritation.
H315 Causes skin irritation.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.

Hazard class and hazard category	Code	Description
Aerosols 2	2.3/2	Aerosol, Category 2
Press Gas (Ref. Liq.)	2.5/RL	Gases under pressure (Refrigerated liquefied gas)
Flam. Liq. 3	2.6/3	Flammable liquid, Category 3
Acute Tox. 4	3.1/4/Inhal	Acute toxicity (inhalation), Category 4
Asp. Tox. 1	3.10/1	Aspiration hazard, Category 1
Skin Irrit. 2	3.2/2	Skin irritation, Category 2
Eye Irrit. 2	3.3/2	Eye irritation, Category 2
STOT SE 3	3.8/3	Specific target organ toxicity - single exposure, Category 3
Aquatic Acute 1	4.1/A1	Acute aquatic hazard, category 1
Aquatic Chronic 1	4.1/C1	Chronic (long term) aquatic hazard, category 1

This safety data sheet has been completely updated in compliance to Regulation 2020/878.
Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
Aerosols 2, H223, H229	On basis of test data
STOT SE 3, H336	Calculation method (Aerosol without propellant)

This document was prepared by a competent person who has received appropriate training.
Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.
It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.
This MSDS cancels and replaces any preceding release.

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
ATE: Acute Toxicity Estimate
ATEmix: Acute toxicity Estimate (Mixtures)
CAS: Chemical Abstracts Service (division of the American Chemical Society).
CLP: Classification, Labeling, Packaging.

DNEL:	Derived No Effect Level.
EINECS:	European Inventory of Existing Commercial Chemical Substances.
GefStoffVO:	Ordinance on Hazardous Substances, Germany.
GHS:	Globally Harmonized System of Classification and Labeling of Chemicals.
IATA:	International Air Transport Association.
IATA-DGR:	Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO:	International Civil Aviation Organization.
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG:	International Maritime Code for Dangerous Goods.
INCI:	International Nomenclature of Cosmetic Ingredients.
KSt:	Explosion coefficient.
LC50:	Lethal concentration, for 50 percent of test population.
LD50:	Lethal dose, for 50 percent of test population.
NA:	Not applicable
PNEC:	Predicted No Effect Concentration.
RID:	Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL:	Short Term Exposure limit.
STOT:	Specific Target Organ Toxicity.
TLV:	Threshold Limiting Value.
TWA:	Time-weighted average
WGK:	German Water Hazard Class.

Exposure Scenario, 08/07/2019

Substance identity	
Chemical name	Hydrocarbons C9-C11 cyclics-iso-alkanes <2% aromatics, declass. ex Notes "P"
CAS No.	64742-48-9
EINECS No.	919-857-5

Table of contents

1. ES 1 Formulation or re-packing; Solvent-based process

1.1 TITLE SECTION

Exposure Scenario name	Formulation and (re) packaging of substances and mixtures
Date - Version	28/06/2019 - 1.0
Life Cycle Stage	Formulation or re-packing
Main user group	Industrial uses
Sector(s) of use	Industrial uses (SU3) - Formulation [mixing] of preparations and/or re-packaging (SU10)

Environment Contributing Scenario	
CS1 Wet formulation	ERC2
Worker Contributing Scenario	
CS2 General exposures	PROC5 - PROC1 - PROC2 - PROC3 - PROC4 - PROC8a - PROC8b - PROC9 - PROC14 - PROC15

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario: Wet formulation (ERC2)

Environmental release categories	Formulation into mixture (ERC2)

Product (article) characteristics

Physical form of product:

Liquid

1.2. CS2: Worker Contributing Scenario: General exposures (PROC5, PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC14, PROC15)

Process Categories	Mixing or blending in batch processes - Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions - Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions - Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition - Chemical production where opportunity for exposure arises - Transfer of substance or mixture (charging and discharging) at non-dedicated facilities - Transfer of substance or mixture (charging and discharging) at dedicated facilities - Transfer of substance or mixture into small containers (dedicated filling line, including weighing) - Tabletting, compression, extrusion, pelletisation, granulation - Use as laboratory reagent (PROC5, PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC14, PROC15)

Product (article) characteristics

Physical form of product:

Liquid

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Other conditions affecting worker exposure

Temperature: Assumes use at not more than 20 °C above ambient temperature. 20°C

1.3 Exposure estimation and reference to its source

N/A

1.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

2. ES 2 Use at industrial site

2.1 TITLE SECTION

Exposure Scenario name	Lubricating agent
Date - Version	28/06/2019 - 1.0
Life Cycle Stage	Use at industrial site
Main user group	Industrial uses
Sector(s) of use	Industrial uses (SU3)

Environment Contributing Scenario

CS1 Solvent-based process	ERC4 - ERC7

Worker Contributing Scenario

CS2 General measures applicable to all activities	PROC1 - PROC2 - PROC3 - PROC4 - PROC7 - PROC8a - PROC8b - PROC9 - PROC10 - PROC13 - PROC17 - PROC18

2.2 Conditions of use affecting exposure

2.2. CS1: Environment Contributing Scenario: Solvent-based process (ERC4, ERC7)

Environmental release categories	Use of non-reactive processing aid at industrial site (no inclusion into or onto article) - Use of functional fluid at industrial site (ERC4, ERC7)

2.2. CS2: Worker Contributing Scenario: General measures applicable to all activities (PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC17, PROC18)

Process Categories	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions - Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions - Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition - Chemical production where opportunity for exposure arises - Industrial spraying - Transfer of substance or mixture (charging and discharging) at non-dedicated facilities - Transfer of substance or mixture (charging and discharging) at dedicated facilities - Transfer of substance or mixture into small containers (dedicated filling line, including weighing) - Roller application or brushing - Treatment of articles by dipping and pouring - Lubrication at high energy conditions in metal working operations - General greasing/lubrication at high kinetic energy conditions (PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC17, PROC18)

Product (article) characteristics

Physical form of product:

Liquid

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.

Other conditions affecting worker exposure

Temperature: Assumes use at not more than 20 °C above ambient temperature.

2.3 Exposure estimation and reference to its source

N/A

2.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

3. ES 3 Use at industrial site

3.1 TITLE SECTION

Exposure Scenario name	Lubricants - Industrial use
Date - Version	28/06/2019 - 1.0
Life Cycle Stage	Use at industrial site
Main user group	Industrial uses
Sector(s) of use	Industrial uses (SU3)

Environment Contributing Scenario

CS1 Solvent-based process	ERC4 - ERC7

Worker Contributing Scenario

CS2 Lubricants	PROC1 - PROC2 - PROC3 - PROC4 - PROC7 - PROC8a - PROC8b - PROC9 - PROC10 - PROC13 - PROC17 - PROC18

3.2 Conditions of use affecting exposure

3.2. CS1: Environment Contributing Scenario: Solvent-based process (ERC4, ERC7)

Environmental release categories	Use of non-reactive processing aid at industrial site (no inclusion into or onto article) - Use of functional fluid at industrial site (ERC4, ERC7)

Product (article) characteristics

Physical form of product:

Liquid

3.2. CS2: Worker Contributing Scenario: Lubricants (PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC17, PROC18)

Process Categories	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions - Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions - Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition - Chemical production where opportunity for exposure arises - Industrial spraying - Transfer of substance or mixture (charging and discharging) at non-dedicated facilities - Transfer of substance or mixture (charging and discharging) at dedicated facilities - Transfer of substance or mixture into small containers (dedicated filling line, including weighing) - Roller application or brushing - Treatment of articles by dipping and pouring - Lubrication at high energy conditions in metal working operations - General greasing/lubrication at high kinetic energy conditions (PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC17, PROC18)

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures

Use in contained systems

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.

Other conditions affecting worker exposure

Temperature: Assumes use at not more than 20 °C above ambient temperature.

3.3 Exposure estimation and reference to its source

N/A

3.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

4. ES 4 Widespread use by professional workers

4.1 TITLE SECTION

Exposure Scenario name	Lubricants - Industrial use
Date - Version	28/06/2019 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)
Environment Contributing Scenario	
CS1 Solvent-based process	ERC9a - ERC9b
Worker Contributing Scenario	
CS2 Lubricants	PROC20 - PROC1 - PROC2 - PROC3 - PROC8a - PROC8b - PROC9 - PROC10 - PROC11 - PROC13 - PROC17 - PROC18

4.2 Conditions of use affecting exposure

4.2. CS1: Environment Contributing Scenario: Solvent-based process (ERC9a, ERC9b)

Environmental release categories	Widespread use of functional fluid (indoor) - Widespread use of functional fluid (outdoor) (ERC9a, ERC9b)

4.2. CS2: Worker Contributing Scenario: Lubricants (PROC20, PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC17, PROC18)

Process Categories	Use of functional fluids in small devices - Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions - Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions - Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition - Transfer of substance or mixture (charging and discharging) at non-dedicated facilities - Transfer of substance or mixture (charging and discharging) at dedicated facilities - Transfer of substance or mixture into small containers (dedicated filling line, including weighing) - Roller application or brushing - Non industrial spraying - Treatment of articles by dipping and pouring - Lubrication at high energy conditions in metal working operations - General greasing/lubrication at high kinetic energy conditions (PROC20, PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC17, PROC18)

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

4.3 Exposure estimation and reference to its source

N/A

4.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

5. ES 5 Widespread use by professional workers

5.1 TITLE SECTION

Exposure Scenario name	Lubricants (high power)
Date - Version	28/06/2019 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)

Environment Contributing Scenario	
CS1 Solvent-based process	ERC8a - ERC8d
Worker Contributing Scenario	
CS2 Lubricants	PROC20 - PROC1 - PROC2 - PROC3 - PROC4 - PROC8a - PROC8b - PROC9 - PROC10 - PROC11 - PROC13 - PROC17 - PROC18

5.2 Conditions of use affecting exposure

5.2. CS1: Environment Contributing Scenario: Solvent-based process (ERC8a, ERC8d)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) - Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8a, ERC8d)

Product (article) characteristics

Physical form of product:

Liquid

5.2. CS2: Worker Contributing Scenario: Lubricants (PROC20, PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC17, PROC18)

Process Categories	Use of functional fluids in small devices - Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions - Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions - Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition - Chemical production where opportunity for exposure arises - Transfer of substance or mixture (charging and discharging) at non-dedicated facilities - Transfer of substance or mixture (charging and discharging) at dedicated facilities - Transfer of substance or mixture into small containers (dedicated filling line, including weighing) - Roller application or brushing - Non industrial spraying - Treatment of articles by dipping and pouring - Lubrication at high energy conditions in metal working operations - General greasing/lubrication at high kinetic energy conditions (PROC20, PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC17, PROC18)

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.

5.3 Exposure estimation and reference to its source

N/A

5.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

6. ES 6 Consumer use; Various products (PC1, PC24, PC31)

6.1 TITLE SECTION

Exposure Scenario name	Lubricants (low release)
Date - Version	28/06/2019 - 1.0
Life Cycle Stage	Consumer use
Main user group	Consumer uses
Sector(s) of use	Consumer uses (SU21)
Product Categories	Adhesives, sealants (PC1) - Lubricants, greases, release products (PC24) - Polishes and wax blends (PC31)
Environment Contributing Scenario	
CS1 Solvent-based process	ERC9a - ERC9b
Consumer Contributing Scenario	
CS2 Lubricants	

6.2 Conditions of use affecting exposure

6.2. CS1: Environment Contributing Scenario: Solvent-based process (ERC9a, ERC9b)

Environmental release categories	Widespread use of functional fluid (indoor) - Widespread use of functional fluid (outdoor) (ERC9a, ERC9b)

Product (article) characteristics

Physical form of product:

Liquid, vapour pressure < 0,5 kPa at STP

6.2. CS2: Consumer Contributing Scenario: Lubricants

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Frequency:

Covers exposure up to 1 events per day

Other conditions affecting consumers exposure

Temperature: Covers use at ambient temperatures.

6.3 Exposure estimation and reference to its source

N/A

6.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

7. ES 7 Consumer use; Various products (PC1, PC24, PC31)

7.1 TITLE SECTION

Exposure Scenario name	Lubricants (low release)
Date - Version	01/07/2019 - 1.0
Life Cycle Stage	Consumer use
Main user group	Consumer uses
Sector(s) of use	Consumer uses (SU21)
Product Categories	Adhesives, sealants (PC1) - Lubricants, greases, release products (PC24) - Polishes and wax blends (PC31)

Environment Contributing Scenario

CS1 Solvent-based process	ERC9a - ERC9b

Consumer Contributing Scenario

CS2 Lubricants	PC24
CS3 Lubricants	PC1
CS4 Lubricants	PC31 - PC23_1, PC31_1 - PC23_2, PC31_2

7.2 Conditions of use affecting exposure

7.2. CS1: Environment Contributing Scenario: Solvent-based process (ERC9a, ERC9b)

Environmental release categories	Widespread use of functional fluid (indoor) - Widespread use of functional fluid (outdoor) (ERC9a, ERC9b)

7.2. CS2: Consumer Contributing Scenario: Lubricants (PC24)

Product Categories	Lubricants, greases, release products (PC24)

Product (article) characteristics

Physical form of product:

Liquid, vapour pressure < 0,5 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Frequency:

Covers exposure up to 1 uses per day

Frequency:

Covers exposure up to 4 days per year

Other conditions affecting consumers exposure

Indoor use

Room size: Covers use in a one car garage (>34 m^3) under typical ventilation.

Temperature: Covers use at ambient temperatures.

Ventilation rate: Covers use under typical household ventilation.

7.2. CS3: Consumer Contributing Scenario: Lubricants (PC1)

Product Categories	Adhesives, sealants (PC1)

Product (article) characteristics

Physical form of product:

Liquid, vapour pressure < 0,5 kPa at STP

Concentration of substance in product:

Covers concentrations up to 30 %

Amount used, frequency and duration of use/exposure

Frequency:

Covers use up to 1 uses per day

Frequency:

Covers exposure up to 365 days per year

Other conditions affecting consumers exposure

Indoor use

Room size: Covers use in room size of 20 m³

Temperature: Covers use at ambient temperatures.

Ventilation rate: Covers use under typical household ventilation.

7.2. CS4: Consumer Contributing Scenario: Lubricants (PC31)

Product Categories	Polishes and wax blends (PC31)
Product (Sub-)Categories	Polishes, wax/cream (floor, furniture, shoes) - Polishes, spray (furniture, shoes) (PC23_1, PC31_1, PC23_2, PC31_2)

Product (article) characteristics

Physical form of product:

Liquid, vapour pressure < 0,5 kPa at STP

Concentration of substance in product:

Covers concentrations up to 50 %

Amount used, frequency and duration of use/exposure

Frequency:

Covers exposure up to 1 uses per day

Frequency:

Covers exposure up to 29 days per year

Other conditions affecting consumers exposure

Indoor use

Room size: Covers use in room size of 20 m³

7.3 Exposure estimation and reference to its source

N/A

7.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

8. ES 8 Consumer use; Adhesives, sealants (PC1)

8.1 TITLE SECTION

Exposure Scenario name	Lubricants (high release)
Date - Version	01/07/2019 - 1.0
Life Cycle Stage	Consumer use
Main user group	Consumer uses
Sector(s) of use	Consumer uses (SU21)
Product Categories	Adhesives, sealants (PC1)
Environment Contributing Scenario	
CS1 Waste management	ERC8a
Consumer Contributing Scenario	
CS2 Lubricants	PC1

8.2 Conditions of use affecting exposure

8.2. CS1: Environment Contributing Scenario: Waste management (ERC8a)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) (ERC8a)

8.2. CS2: Consumer Contributing Scenario: Lubricants (PC1)

Product Categories	Adhesives, sealants (PC1)

Product (article) characteristics

Physical form of product:

Liquid

8.3 Exposure estimation and reference to its source

N/A

8.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

9. ES 9 Consumer use; Various products (PC39, PC28)

9.1 TITLE SECTION

Exposure Scenario name	Cosumer other uses
Date - Version	01/07/2019 - 1.0
Life Cycle Stage	Consumer use
Main user group	Consumer uses
Sector(s) of use	Consumer uses (SU21)
Product Categories	Cosmetics, personal care products (PC39) - Perfumes, fragrances (PC28)

Environment Contributing Scenario

CS1 Processing of organic liquids	ERC8a - ERC8d

Consumer Contributing Scenario

CS2 Consumer	PC39 - PC28

9.2 Conditions of use affecting exposure

9.2. CS1: Environment Contributing Scenario: Processing of organic liquids (ERC8a, ERC8d)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) - Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8a, ERC8d)

9.2. CS2: Consumer Contributing Scenario: Consumer (PC39, PC28)

Product Categories	Cosmetics, personal care products - Perfumes, fragrances (PC39, PC28)

Product (article) characteristics

Physical form of product:

Liquid

9.3 Exposure estimation and reference to its source

N/A

9.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Exposure Scenario, 08/07/2019

Substance identity	
Chemical name	Benzenesulfonic acid , mono-C16-24-alkyl derivs, calcium salts
CAS No.	70024-69-0
EINECS No.	274-263-7

Table of contents

1. ES 1 Use at industrial site

1.1 TITLE SECTION

Exposure Scenario name	Industrial general use of lubricants and greases in vehicles and machinery
Date - Version	08/07/2019 - 1.0
Life Cycle Stage	Use at industrial site
Main user group	Industrial uses
Sector(s) of use	Industrial uses (SU3)

Environment Contributing Scenario	
CS1 Solvent-based process	ERC4 - ERC7
Worker Contributing Scenario	
CS2 Industrial	PROC1
CS3 Industrial	PROC2
CS4 Industrial	PROC8b
CS5 Industrial	PROC9

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario: Solvent-based process (ERC4, ERC7)

Environmental release categories	Use of non-reactive processing aid at industrial site (no inclusion into or onto article) - Use of functional fluid at industrial site (ERC4, ERC7)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-07 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Amount used, frequency and duration of use (or from service life)

Amounts used:
Annual site tonnage 10000 t(onnes)/year

Release type: Continuous release

Emission days: 300 days per year

Technical and organisational conditions and measures

Control measures to prevent releases

Pre-treatment of waste water by neutralization	Water - minimum efficiency of: > 92 %
Air filtration - particle removal	Air - minimum efficiency of: > 70 %

Conditions and measures related to sewage treatment plant

STP type:
Municipal Sewage Treatment Plant

Other conditions affecting environmental exposure

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

1.2. CS2: Worker Contributing Scenario: Industrial (PROC1)

Process Categories	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Amount used, frequency and duration of use/exposure

Duration:
Covers daily exposures up to 8 hours

Duration:
unless stated differently

Technical and organisational conditions and measures

Technical and organisational measures
Handle the product in a closed system

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Additional Good Practice Advice:
Ensure control measures are regularly inspected and maintained.

1.2. CS3: Worker Contributing Scenario: Industrial (PROC2)

Process Categories	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Amount used, frequency and duration of use/exposure

Duration:
Covers daily exposures up to 8 hours

Duration:
unless stated differently

Technical and organisational conditions and measures

Technical and organisational measures
Handle the product in a closed system
Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Additional Good Practice Advice:

Ensure control measures are regularly inspected and maintained.

1.2. CS4: Worker Contributing Scenario: Industrial (PROC8b)

Process Categories	Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC8b)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Amount used, frequency and duration of use/exposure

Duration:
Covers daily exposures up to 8 hours

Duration:
unless stated differently

Technical and organisational conditions and measures

Technical and organisational measures
Handle the product in a closed system
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Additional Good Practice Advice:
Ensure control measures are regularly inspected and maintained. Isolated drainage to prevent discharge to soil Clear spills immediately.

1.2. CS5: Worker Contributing Scenario: Industrial (PROC9)

Process Categories	Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Amount used, frequency and duration of use/exposure

Duration:
Covers daily exposures up to 8 hours

Duration:
unless stated differently

1.3 Exposure estimation and reference to its source

1.3. CS2: Worker Contributing Scenario: Industrial (PROC1)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	< 0.01

inhalative, systemic, long-term	N/A	N/A	< 0.01
dermal, local, long-term	N/A	N/A	< 0.01

1.3. CS3: Worker Contributing Scenario: Industrial (PROC2)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	0.082
inhalative, systemic, long-term	N/A	N/A	< 0.01
dermal, local, long-term	N/A	N/A	0.194
dermal, systemic, long-term	N/A	N/A	0.412

1.3. CS4: Worker Contributing Scenario: Industrial (PROC8b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	0.823
inhalative, systemic, long-term	N/A	N/A	< 0.01
dermal, local, long-term	N/A	N/A	0.194

1.3. CS5: Worker Contributing Scenario: Industrial (PROC9)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	0.412
inhalative, systemic, long-term	N/A	N/A	< 0.01
dermal, local, long-term	N/A	N/A	0.194

1.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

2. ES 2 Use at industrial site

2.1 TITLE SECTION

Exposure Scenario name	Application of lubricants for machining parts or equipment by immersion, surface deposition by brushing or by spraying
Date - Version	08/07/2019 - 1.0
Life Cycle Stage	Use at industrial site
Main user group	Industrial uses
Sector(s) of use	Industrial uses (SU3)

Environment Contributing Scenario	
CS1 Solvent-based process	ERC4
Worker Contributing Scenario	
CS2 Storage	PROC2
CS3 Spraying	PROC7
CS4 Material transfers	PROC8b
CS5 Material transfers	PROC9
CS6 Roller, spreader, flow application	PROC10
CS7 Dipping, immersion and pouring	PROC13

2.2 Conditions of use affecting exposure

2.2. CS1: Environment Contributing Scenario: Solvent-based process (ERC4)

Environmental release categories	Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4)

Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

1E-09 Pa

Concentration of substance in product:

Covers percentage substance in the product up to 5 %.

Amount used, frequency and duration of use (or from service life)

Amounts used:

Annual site tonnage 10 t(onnes)/year

Release type: Continuous release

Emission days: 300 days per year

Technical and organisational conditions and measures

Control measures to prevent releases

Pre-treatment of waste water by neutralization	Water - minimum efficiency of: > 92 %
Air filtration - particle removal	Air - minimum efficiency of: > 70 %

Conditions and measures related to sewage treatment plant

STP type:
Municipal Sewage Treatment Plant

Other conditions affecting environmental exposure

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

2.2. CS2: Worker Contributing Scenario: Storage (PROC2)

Process Categories	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Technical and organisational conditions and measures

Technical and organisational measures
Use in contained systems

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Additional Good Practice Advice:
Ensure control measures are regularly inspected and maintained.

2.2. CS3: Worker Contributing Scenario: Spraying (PROC7)

Process Categories	Industrial spraying (PROC7)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection
Wear suitable gloves tested to EN374.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Additional Good Practice Advice:
Ensure control measures are regularly inspected and maintained.

2.2. CS4: Worker Contributing Scenario: Material transfers (PROC8b)

Process Categories	Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC8b)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:

1E-09 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Additional Good Practice Advice:
Clear transfer lines prior to de-coupling. Clear spills immediately.

2.2. CS5: Worker Contributing Scenario: Material transfers (PROC9)

Process Categories	Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

2.2. CS6: Worker Contributing Scenario: Roller, spreader, flow application (PROC10)

Process Categories	Roller application or brushing (PROC10)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection
Wear suitable gloves tested to EN374.

2.2. CS7: Worker Contributing Scenario: Dipping, immersion and pouring (PROC13)

Process Categories	Treatment of articles by dipping and pouring (PROC13)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

2.3 Exposure estimation and reference to its source

2.3. CS2: Worker Contributing Scenario: Storage (PROC2)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	0.412

inhalative, systemic, long-term	N/A	N/A	< 0.01
dermal, local, long-term	N/A	N/A	0.039

2.3. CS3: Worker Contributing Scenario: Spraying (PROC7)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	0.515
inhalative, systemic, long-term	N/A	N/A	0.078
dermal, local, long-term	N/A	N/A	0.039

2.3. CS4: Worker Contributing Scenario: Material transfers (PROC8b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	0.823
inhalative, systemic, long-term	N/A	N/A	< 0.01
dermal, local, long-term	N/A	N/A	0.194

2.3. CS5: Worker Contributing Scenario: Material transfers (PROC9)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	0.412
inhalative, systemic, long-term	N/A	N/A	< 0.01
dermal, local, long-term	N/A	N/A	0.194

2.3. CS6: Worker Contributing Scenario: Roller, spreader, flow application (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	0.33
inhalative, systemic, long-term	N/A	N/A	< 0.01
dermal, local, long-term	N/A	N/A	0.078

2.3. CS7: Worker Contributing Scenario: Dipping, immersion and pouring (PROC13)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	0.823

inhalative, systemic, long-term	N/A	N/A	< 0.01
dermal, local, long-term	N/A	N/A	0.388

2.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

3. ES 3 Use at industrial site

3.1 TITLE SECTION

Exposure Scenario name	Application of lubricants for machining parts or equipment by immersion, surface deposition by brushing or by spraying
Date - Version	08/07/2019 - 1.0
Life Cycle Stage	Use at industrial site
Main user group	Industrial uses
Sector(s) of use	Industrial uses (SU3)

Environment Contributing Scenario	
CS1 Solvent-based process	ERC4
Worker Contributing Scenario	
CS2 Dipping, immersion and pouring - Bulk transfers	PROC8b - PROC13

3.2 Conditions of use affecting exposure

3.2. CS1: Environment Contributing Scenario: Solvent-based process (ERC4)

Environmental release categories	Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Amount used, frequency and duration of use (or from service life)

Amounts used:
Annual site tonnage 10000 t(onnes)/year
Daily amount per site 34000 kg/day

Release type: Continuous release

Emission days: 300 days per year

Technical and organisational conditions and measures

Control measures to prevent releases

Air filtration - particle removal	Air - minimum efficiency of: > 70 %
Pre-treatment of waste water by neutralization	Water - minimum efficiency of: > 92 %

Other conditions affecting environmental exposure

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

3.2. CS2: Worker Contributing Scenario: Dipping, immersion and pouring - Bulk transfers (PROC8b, PROC13)

Process Categories	Transfer of substance or mixture (charging and discharging) at dedicated facilities - Treatment of articles by dipping and pouring (PROC8b, PROC13)

Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

1E-09 Pa

Concentration of substance in product:

Covers percentage substance in the product up to 5 %.

Technical and organisational conditions and measures

Technical and organisational measures

Provide a basic standard of general ventilation (1 to 3 air changes per hour).

3.3 Exposure estimation and reference to its source

3.3. CS2: Worker Contributing Scenario: Dipping, immersion and pouring - Bulk transfers (PROC8b, PROC13)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	0.823
inhalative, systemic, long-term	N/A	N/A	< 0.01
dermal, local, long-term	N/A	N/A	0.194
dermal, local, long-term	N/A	N/A	0.388

3.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

4. ES 4 Use at industrial site

4.1 TITLE SECTION

Exposure Scenario name	Metal working fluids / rolling oils
Date - Version	08/07/2019 - 1.0
Life Cycle Stage	Use at industrial site
Main user group	Industrial uses
Sector(s) of use	Industrial uses (SU3)

Environment Contributing Scenario	
CS1 Solvent-based process	ERC8a

Worker Contributing Scenario	
CS2 Metal machining operations	PROC2
CS3 Bulk transfers - Equipment cleaning and maintenance - Disposal of wastes	PROC8b
CS4 Bulk transfers - Metal machining operations - General exposures	PROC17

4.2 Conditions of use affecting exposure

4.2. CS1: Environment Contributing Scenario: Solvent-based process (ERC8a)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) (ERC8a)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Amount used, frequency and duration of use (or from service life)

Amounts used:
Annual site tonnage 1000 t(onnes)/year
Daily amount per site 32500 kg/day

Release type: Continuous release

Emission days: 300 days per year

Technical and organisational conditions and measures

Control measures to prevent releases

Air filtration - particle removal	Air - minimum efficiency of: > 70 %
Pre-treatment of waste water by neutralization	Water - minimum efficiency of: > 92 %

Conditions and measures related to sewage treatment plant

STP type:

Municipal Sewage Treatment Plant

Conditions and measures related to treatment of waste (including article waste)

Waste treatment

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

Other conditions affecting environmental exposure

Local marine water dilution factor: 100

Local freshwater dilution factor: 10

4.2. CS2: Worker Contributing Scenario: Metal machining operations (PROC2)

Process Categories	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

1E-09 Pa

Concentration of substance in product:

Covers percentage substance in the product up to 5 %.

Other conditions affecting worker exposure

Temperature: Covers use at ambient temperatures.

4.2. CS3: Worker Contributing Scenario: Bulk transfers - Equipment cleaning and maintenance - Disposal of wastes (PROC8b)

Process Categories	Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC8b)

Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

1E-09 Pa

Concentration of substance in product:

Covers percentage substance in the product up to 5 %.

Other conditions affecting worker exposure

Temperature: Covers use at ambient temperatures.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Additional Good Practice Advice:

Isolated drainage to prevent discharge to soil

4.2. CS4: Worker Contributing Scenario: Bulk transfers - Metal machining operations - General exposures (PROC17)

Process Categories	Lubrication at high energy conditions in metal working operations (PROC17)

Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

1E-09 Pa

Concentration of substance in product:

Covers percentage substance in the product up to 5 %.

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374 and sleeves. For further specification, refer to section 8 of the SDS

Other conditions affecting worker exposure

Temperature: Covers use at ambient temperatures.

4.3 Exposure estimation and reference to its source

4.3. CS2: Worker Contributing Scenario: Metal machining operations (PROC2)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	0.082
inhalative, systemic, long-term	N/A	N/A	< 0.01
dermal, local, long-term	N/A	N/A	0.039

4.3. CS3: Worker Contributing Scenario: Bulk transfers - Equipment cleaning and maintenance - Disposal of wastes (PROC8b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	0.823
inhalative, systemic, long-term	N/A	N/A	< 0.01
dermal, local, long-term	N/A	N/A	0.194

4.3. CS4: Worker Contributing Scenario: Bulk transfers - Metal machining operations - General exposures (PROC17)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	0.33
inhalative, systemic, long-term	N/A	N/A	0.017
dermal, local, long-term	N/A	N/A	0.078

4.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

5. ES 5 Widespread use by professional workers

5.1 TITLE SECTION

Exposure Scenario name	Lubricating agent
Date - Version	08/07/2019 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)

Environment Contributing Scenario

CS1 Solvent-based process	ERC9a - ERC9b

Worker Contributing Scenario

CS2 Use in under contaimnet systems	PROC1
CS3 Drying and storage	PROC2
CS4 Equipment cleaning and maintenance	PROC8a
CS5 Disposal of wastes	PROC8b
CS6 Equipment cleaning and maintenance	PROC20
CS7 Machine	PROC24

5.2 Conditions of use affecting exposure

5.2. CS1: Environment Contributing Scenario: Solvent-based process (ERC9a, ERC9b)

Environmental release categories	Widespread use of functional fluid (indoor) - Widespread use of functional fluid (outdoor) (ERC9a, ERC9b)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Amount used, frequency and duration of use (or from service life)

Amounts used:
Daily amount per site 17000 kg/day

Release type: Continuous release

Emission days: 365 days per year

Technical and organisational conditions and measures

Control measures to prevent releases

Air filtration - particle removal	Air - minimum efficiency of: > 70 %
Pre-treatment of waste water by neutralization	Water - minimum efficiency of: > 92 %

Conditions and measures related to sewage treatment plant

STP type:
Municipal Sewage Treatment Plant

Conditions and measures related to treatment of waste (including article waste)

Waste treatment
Product residual disposal complies with applicable regulations.

Other conditions affecting environmental exposure

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

5.2. CS2: Worker Contributing Scenario: Use in under containmet systems (PROC1)

Process Categories	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Other conditions affecting worker exposure

Temperature: Covers use at ambient temperatures.

5.2. CS3: Worker Contributing Scenario: Drying and storage (PROC2)

Process Categories	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Technical and organisational conditions and measures

Technical and organisational measures
Store substance within a closed system.

Other conditions affecting worker exposure

Temperature: Covers use at ambient temperatures.

5.2. CS4: Worker Contributing Scenario: Equipment cleaning and maintenance (PROC8a)

Process Categories	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC8a)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:

1E-09 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Technical and organisational conditions and measures

Technical and organisational measures
Handle the product in a closed system
Drain or remove substance from equipment prior to break-in or maintenance.
Remove spills immediately
Keep drains in watertight containers while awaiting dismantling or subsequent recycling

Other conditions affecting worker exposure

Temperature: Covers use at ambient temperatures.

5.2. CS5: Worker Contributing Scenario: Disposal of wastes (PROC8b)

Process Categories	Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC8b)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Technical and organisational conditions and measures

Technical and organisational measures
Remove spills immediately
Handle the product in a closed system

Other conditions affecting worker exposure

Temperature: Covers use at ambient temperatures.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Additional Good Practice Advice:
Retain drain downs in sealed storage pending disposal or for subsequent recycle. Clear spills immediately.

5.2. CS6: Worker Contributing Scenario: Equipment cleaning and maintenance (PROC20)

Process Categories	Use of functional fluids in small devices (PROC20)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Technical and organisational conditions and measures

Technical and organisational measures
Remove spills immediately
Handle the product in a closed system

Other conditions affecting worker exposure

Temperature: Covers use at ambient temperatures.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Additional Good Practice Advice:

Retain drain downs in sealed storage pending disposal or for subsequent recycle. Clear spills immediately.

5.2. CS7: Worker Contributing Scenario: Machine (PROC24)

Process Categories	High (mechanical) energy work-up of substances bound in/on materials and/or articles (PROC24)

Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

1E-09 Pa

Concentration of substance in product:

Covers percentage substance in the product up to 5 %.

Technical and organisational conditions and measures

Technical and organisational measures

Closed systems

Other conditions affecting worker exposure

Temperature: Covers use at ambient temperatures.

5.3 Exposure estimation and reference to its source

5.3. CS2: Worker Contributing Scenario: Use in under containmet systems (PROC1)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	< 0.01
inhalative, systemic, long-term	N/A	N/A	< 0.01
dermal, local, long-term	N/A	N/A	< 0.01

5.3. CS3: Worker Contributing Scenario: Drying and storage (PROC2)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	0.082
inhalative, systemic, long-term	N/A	N/A	< 0.01
dermal, local, long-term	N/A	N/A	0.039

5.3. CS4: Worker Contributing Scenario: Equipment cleaning and maintenance (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	0.823
inhalative, systemic, long-term	N/A	N/A	< 0.01

dermal, local, long-term	N/A	N/A	0.194

5.3. CS5: Worker Contributing Scenario: Disposal of wastes (PROC8b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	0.823
inhalative, systemic, long-term	N/A	N/A	< 0.01
dermal, local, long-term	N/A	N/A	0.194

5.3. CS6: Worker Contributing Scenario: Equipment cleaning and maintenance (PROC20)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	0.103
inhalative, systemic, long-term	N/A	N/A	< 0.01
dermal, local, long-term	N/A	N/A	0.048

5.3. CS7: Worker Contributing Scenario: Machine (PROC24)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	0.17
inhalative, systemic, long-term	N/A	N/A	0.34
dermal, local, long-term	N/A	N/A	0.019

5.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

6. ES 6 Widespread use by professional workers

6.1 TITLE SECTION

Exposure Scenario name	Application of lubricants for machining parts or equipment by immersion, surface deposition by brushing or by spraying
Date - Version	08/07/2019 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)

Environment Contributing Scenario	
CS1 Solvent-based process	ERC8a - ERC8d
Worker Contributing Scenario	
CS2 Storage	PROC2
CS3 Bulk transfers - Equipment cleaning and maintenance	PROC8a
CS4 Disposal of wastes	PROC8b
CS5 Roller, spreader, flow application	PROC10
CS6 Hand held spraying	PROC11
CS7 Dipping, immersion and pouring	PROC13

6.2 Conditions of use affecting exposure

6.2. CS1: Environment Contributing Scenario: Solvent-based process (ERC8a, ERC8d)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) - Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8a, ERC8d)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Amount used, frequency and duration of use (or from service life)

Amounts used:
Annual site tonnage 5000 t(onnes)/year
Daily amount per site 17000 kg/day

Release type: Continuous release

Emission days: 365 days per year

Technical and organisational conditions and measures

Control measures to prevent releases

Air filtration - particle removal	Air - minimum efficiency of: > 70 %

Pre-treatment of waste water by neutralization	Water - minimum efficiency of: > 92 %

Conditions and measures related to sewage treatment plant

STP type:
Municipal Sewage Treatment Plant

Other conditions affecting environmental exposure

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

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Additional Good Practice Advice:
Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed.

6.2. CS2: Worker Contributing Scenario: Storage (PROC2)

Process Categories	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Amount used, frequency and duration of use/exposure

Duration:
Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures
Store substance within a closed system.
Provide a basic standard of general ventilation (1 to 3 air changes per hour).

6.2. CS3: Worker Contributing Scenario: Bulk transfers - Equipment cleaning and maintenance (PROC8a)

Process Categories	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC8a)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Amount used, frequency and duration of use/exposure

Duration:
Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures
Use in closed process
Clear transfer lines prior to de-coupling.
Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Additional Good Practice Advice:

Retain drain downs in sealed storage pending disposal or for subsequent recycle. Prevent leaks and prevent soil / water pollution caused by leaks.

6.2. CS4: Worker Contributing Scenario: Disposal of wastes (PROC8b)

Process Categories	Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC8b)

Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

1E-09 Pa

Concentration of substance in product:

Covers percentage substance in the product up to 5 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures

Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Additional Good Practice Advice:

Prevent leaks and prevent soil / water pollution caused by leaks. Retain drain downs in sealed storage pending disposal or for subsequent recycle.

6.2. CS5: Worker Contributing Scenario: Roller, spreader, flow application (PROC10)

Process Categories	Roller application or brushing (PROC10)

Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

1E-09 Pa

Concentration of substance in product:

Covers percentage substance in the product up to 5 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures

Handle the product in a closed system

Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.

6.2. CS6: Worker Contributing Scenario: Hand held spraying (PROC11)

Process Categories	Non industrial spraying (PROC11)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Amount used, frequency and duration of use/exposure

Duration:
Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures
Handle the product in a closed system
Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

6.2. CS7: Worker Contributing Scenario: Dipping, immersion and pouring (PROC13)

Process Categories	Treatment of articles by dipping and pouring (PROC13)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Amount used, frequency and duration of use/exposure

Duration:
Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures
Handle the product in a closed system
Provide a basic standard of general ventilation (1 to 3 air changes per hour).
Ensure material transfers are under containment or extract ventilation.

6.3 Exposure estimation and reference to its source

6.3. CS2: Worker Contributing Scenario: Storage (PROC2)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	0.082
inhalative, systemic, long-term	N/A	N/A	< 0.01
dermal, local, long-term	N/A	N/A	0.039

6.3. CS3: Worker Contributing Scenario: Bulk transfers - Equipment cleaning and maintenance (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	0.823
inhalative, systemic, long-term	N/A	N/A	< 0.01
dermal, local, long-term	N/A	N/A	0.194

6.3. CS4: Worker Contributing Scenario: Disposal of wastes (PROC8b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	0.823
inhalative, systemic, long-term	N/A	N/A	< 0.01
dermal, local, long-term	N/A	N/A	0.194

6.3. CS5: Worker Contributing Scenario: Roller, spreader, flow application (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	0.33
inhalative, systemic, long-term	N/A	N/A	< 0.01
dermal, local, long-term	N/A	N/A	0.078

6.3. CS6: Worker Contributing Scenario: Hand held spraying (PROC11)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	0.644
inhalative, systemic, long-term	N/A	N/A	0.017
dermal, local, long-term	N/A	N/A	0.097

6.3. CS7: Worker Contributing Scenario: Dipping, immersion and pouring (PROC13)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	0.823
inhalative, systemic, long-term	N/A	N/A	< 0.01
dermal, local, long-term	N/A	N/A	0.388

6.4 Guidance to DU to evaluate whether he works inside the boundaries set by

the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

7. ES 7 Widespread use by professional workers

7.1 TITLE SECTION

Exposure Scenario name	Metal working fluids / rolling oils
Date - Version	08/07/2019 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)

Environment Contributing Scenario	
CS1 Solvent-based process	ERC8a

Worker Contributing Scenario	
CS2 Equipment cleaning and maintenance	PROC2
CS3 Filling of equipment from drums or containers	PROC8b
CS4 Metal machining operations - Open systems - Material transfers - Disposal of wastes	PROC2

7.2 Conditions of use affecting exposure

7.2. CS1: Environment Contributing Scenario: Solvent-based process (ERC8a)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) (ERC8a)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Amount used, frequency and duration of use (or from service life)

Amounts used:
Daily amount per site 17000 kg/day

Release type: Continuous release

Emission days: 365 days per year

Technical and organisational conditions and measures

Control measures to prevent releases

Air filtration - particle removal	Air - minimum efficiency of: > 70 %
Pre-treatment of waste water by neutralization	Water - minimum efficiency of: > 92 %

Conditions and measures related to sewage treatment plant

STP type:
Municipal Sewage Treatment Plant

Other conditions affecting environmental exposure

Local marine water dilution factor: 100
Local freshwater dilution factor: 20

7.2. CS2: Worker Contributing Scenario: Equipment cleaning and maintenance (PROC2)

Process Categories	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Amount used, frequency and duration of use/exposure

Duration:
Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures
Use in contained systems
Provide a basic standard of general ventilation (1 to 3 air changes per hour).

7.2. CS3: Worker Contributing Scenario: Filling of equipment from drums or containers (PROC8b)

Process Categories	Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC8b)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Amount used, frequency and duration of use/exposure

Duration:
Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour).

7.2. CS4: Worker Contributing Scenario: Metal machining operations - Open systems - Material transfers - Disposal of wastes (PROC2)

Process Categories	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:

Covers percentage substance in the product up to 5 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures

Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.

7.3 Exposure estimation and reference to its source

7.3. CS2: Worker Contributing Scenario: Equipment cleaning and maintenance (PROC2)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	0.823
inhalative, systemic, long-term	N/A	N/A	< 0.01
dermal, local, long-term	N/A	N/A	0.194

7.3. CS3: Worker Contributing Scenario: Filling of equipment from drums or containers (PROC8b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	0.823
inhalative, systemic, long-term	N/A	N/A	< 0.01
dermal, local, long-term	N/A	N/A	0.194

7.3. CS4: Worker Contributing Scenario: Metal machining operations - Open systems - Material transfers - Disposal of wastes (PROC2)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	N/A	0.33
inhalative, systemic, long-term	N/A	N/A	0.017
dermal, local, long-term	N/A	N/A	0.078

7.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

8. ES 8 Consumer use; Lubricants, greases, release products (PC24)

8.1 TITLE SECTION

Exposure Scenario name	Use of lubricants and greases
Date - Version	08/07/2019 - 1.0
Life Cycle Stage	Consumer use
Main user group	Consumer uses
Product Categories	Lubricants, greases, release products (PC24)

Environment Contributing Scenario	
CS1 Solvent-based process	ERC9a
CS2 Solvent-based process	ERC9b
Consumer Contributing Scenario	
CS3 Use in lubricants and greases	PC24

8.2 Conditions of use affecting exposure

8.2. CS1: Environment Contributing Scenario: Solvent-based process (ERC9a)

Environmental release categories	Widespread use of functional fluid (indoor) (ERC9a)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers concentrations up to 2 %

Amount used, frequency and duration of use (or from service life)

Amounts used:
Daily amount per site 4000 kg/day

Release type: Continuous release

Emission days: 365 days per year

Other conditions affecting environmental exposure

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

8.2. CS2: Environment Contributing Scenario: Solvent-based process (ERC9b)

Environmental release categories	Widespread use of functional fluid (outdoor) (ERC9b)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers concentrations up to 2 %

Amount used, frequency and duration of use (or from service life)

Amounts used:
Daily amount per site 0.005775 kg/day

Release type: Continuous release

Emission days: 365 days per year

Other conditions affecting environmental exposure

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

8.2. CS3: Consumer Contributing Scenario: Use in lubricants and greases (PC24)

Product Categories	Lubricants, greases, release products (PC24)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers concentrations up to 2 %

Amount used, frequency and duration of use/exposure

Amounts used:
For each use event, covers use amounts up to .... 1 kg

Duration:
Covers use up to 120 min/shift
Frequency:
Covers frequency up to: 1 applications per month

Other conditions affecting consumers exposure

Room size: Covers use in room size of 25 m³
Temperature: Covers use at ambient temperatures.
Ventilation rate: Covers use under typical household ventilation. 0.6 Air changer per hour

8.3 Exposure estimation and reference to its source

N/A

8.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:
Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

9. ES 9 Consumer use; Lubricants, greases, release products (PC24)

9.1 TITLE SECTION

Exposure Scenario name	Use of lubricants and greases
Date - Version	08/07/2019 - 1.0
Life Cycle Stage	Consumer use
Main user group	Consumer uses
Product Categories	Lubricants, greases, release products (PC24)

Environment Contributing Scenario	
CS1 Solvent-based process	ERC8a
CS2 Solvent-based process	ERC8d
Consumer Contributing Scenario	
CS3 Use in lubricants and greases	PC24

9.2 Conditions of use affecting exposure

9.2. CS1: Environment Contributing Scenario: Solvent-based process (ERC8a)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) (ERC8a)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers concentrations up to 2 %

Amount used, frequency and duration of use (or from service life)

Amounts used:
Daily amount per site 0.005775 kg/day

Release type: Continuous release

Emission days: 365 days per year

Other conditions affecting environmental exposure

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

9.2. CS2: Environment Contributing Scenario: Solvent-based process (ERC8d)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8d)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers concentrations up to 2 %

Amount used, frequency and duration of use (or from service life)

Amounts used:
Amount per use 50 g
Daily amount per site 0.002457 kg/day

Release type: Continuous release

Emission days: 365 days per year

Other conditions affecting environmental exposure

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

9.2. CS3: Consumer Contributing Scenario: Use in lubricants and greases (PC24)

Product Categories	Lubricants, greases, release products (PC24)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
1E-09 Pa

Concentration of substance in product:
Covers concentrations up to 2 %

Amount used, frequency and duration of use/exposure

Amounts used:
Amount per use 50 g

Duration:
Covers exposure up to 5 min/shift
Frequency:
Covers exposure up to 2 times a week

Other conditions affecting consumers exposure

Room size: Covers use in room size of 25 m^3
Temperature: Covers use at ambient temperatures.
Ventilation rate: 0.6 Air changer per hour

9.3 Exposure estimation and reference to its source

N/A

9.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:
Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.