

# Safety Data Sheet

## ROLIN FLUID PROTETTIVO RADIATORI CONCENTRATO L. 1



Safety Data Sheet dated 6/7/2019, version 5

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

#### 1.1. Product identifier

Mixture identification:

Trade name: ROLIN FLUID PROTETTIVO RADIATORI CONCENTRATO L.  
1

Trade code: 8002

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

Recommended use:

Liquid for cooling circuits

#### 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

Centro Antiveleni di Pavia IRCCS- Fondazione Maugeri tel. +39 (0)382 24444 (h24; it, en)

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

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

EC regulation criteria 1272/2008 (CLP):

⚠ Warning, Acute Tox. 4, Harmful if swallowed.

⚠ Warning, STOT RE 2, May cause damage to organs through prolonged or repeated exposure if swallowed.

Adverse physicochemical, human health and environmental effects:

No other hazards

#### 2.2. Label elements

Hazard pictograms:



Warning

Hazard statements:

H302 Harmful if swallowed.

H373 May cause damage to organs through prolonged or repeated exposure if swallowed.

Precautionary statements:

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

P103 Read label before use.

P264 Wash hands thoroughly after handling.



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P270 Do not eat, drink or smoke when using this product.

P501 Dispose of contents/container in accordance with applicable regulations.

Special Provisions:

PACK2 The packing must have tactile indications of danger for blind people.

Contains

ethanediol

sodium nitrite

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

None

2.3. Other hazards

vPvB Substances: None - PBT Substances: None

Other Hazards:

No other hazards

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### 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:

>= 90% ethylene glycol

REACH No.: 01-2119456816-28, Index number: 603-027-00-1, CAS: 107-21-1, EC: 203-473-3

⚠ 3.1/4/Oral Acute Tox. 4 H302

⚠ 3.9/2 STOT RE 2 H373

>= 2% - < 3% SODIUM BENZOATE

REACH No.: 01-2119460683-35, CAS: 532-32-1, EC: 208-534-8

⚠ 3.3/2 Eye Irrit. 2 H319

>= 0.5% - < 1% TETRABORATO DI POTASSIO TETRAIDRATO

REACH No.: 01-2119970730-37, CAS: 12045-78-2, EC: 215-575-5

⚠ 3.7/2 Repr. 2 H361d

>= 0.5% - < 1% SODIO NITRITO C/A

REACH No.: 01-2119471836-27, Index number: 007-010-00-4, CAS: 7632-00-0, EC: 231-555-9

⚠ 3.3/2 Eye Irrit. 2 H319

⚠ 3.1/3/Oral Acute Tox. 3 H301

⚠ 4.1/A1 Aquatic Acute 1 H400

⚠ 2.14/2 Ox. Sol. 2 H272

>= 0.001% - < 0.005% methanol

Index number: 603-001-00-X, CAS: 67-56-1, EC: 200-659-6

⚠ 2.6/2 Flam. Liq. 2 H225

⚠ 3.1/3/Inhal Acute Tox. 3 H331

⚠ 3.1/3/Dermal Acute Tox. 3 H311

⚠ 3.1/3/Oral Acute Tox. 3 H301

⚠ 3.8/1 STOT SE 1 H370

Specific Concentration Limits:

3% <= C < 10%: STOT SE 2 H371

C >= 10%: STOT SE 1 H370



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### 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.

After contact with skin, wash immediately with soap and plenty of water.

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:

Give nothing to eat or drink.

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

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### 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.

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### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.

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

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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:

Contaminated clothing should be changed before entering eating areas.

Do not eat or drink while working.

### 7.2. Conditions for safe storage, including any incompatibilities

Keep away from food, drink and feed.

None in particular.

Instructions as regards storage premises:

Adequately ventilated premises.

### 7.3. Specific end use(s)

None in particular

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

ethanediol - CAS: 107-21-1

20101.06 - TWA(8h): 52 mg/m<sup>3</sup>, 20 ppm - STEL: 104 mg/m<sup>3</sup>, 40 ppm

EU - TWA(8h): 52 mg/m<sup>3</sup>, 20 ppm - STEL: 104 mg/m<sup>3</sup>, 40 ppm - Notes: Skin

ACGIH - STEL: 10 mg/m<sup>3</sup> - Notes: (I, H), A4 - URT irr

ACGIH - TWA(8h): 25 ppm - STEL: 50 ppm - Notes: (V), A4 - URT irr

methanol - CAS: 67-56-1

EU - TWA(8h): 260 mg/m<sup>3</sup>, 200 ppm - Notes: Skin

ACGIH - TWA(8h): 200 ppm - STEL: 250 ppm - Notes: Skin, BEI - Headache, eye dam, dizziness, nausea

### DNEL Exposure Limit Values

ethanediol - CAS: 107-21-1

Worker Industry: 35 mg/m<sup>3</sup> - Worker Professional: 35 mg/m<sup>3</sup> - Consumer: 7 mg/m<sup>3</sup> -

Exposure: Human Inhalation - Frequency: Long Term, local effects

Worker Industry: 106 mg/kg - Worker Professional: 106 mg/kg - Consumer: 53 mg/kg -

Exposure: Human Dermal - Frequency: Long Term, systemic effects

SODIUM BENZOATE - CAS: 532-32-1

Worker Professional: 62.5 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects

Worker Professional: 0.1 mg/m<sup>3</sup> - Exposure: Human Inhalation - Frequency: Long Term, local effects

Worker Professional: 3 mg/m<sup>3</sup> - Exposure: Human Inhalation - Frequency: Long Term, systemic effects

TETRABORATO DI POTASSIO TETRAIDRATO - CAS: 12045-78-2

Worker Professional: 8.28 mg/m<sup>3</sup> - Consumer: 4.15 mg/m<sup>3</sup> - Exposure: Human Inhalation - Frequency: Long Term, systemic effects

Worker Professional: 392 mg/kg - Consumer: 196 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects

Consumer: 0.98 mg/kg - Exposure: Human Oral - Frequency: Short Term, systemic effects

Consumer: 0.98 - Exposure: Human Dermal - Frequency: Short Term, systemic effects

methanol - CAS: 67-56-1

Worker Professional: 260 mg/m<sup>3</sup> - Consumer: 50 mg/m<sup>3</sup> - Exposure: Human Inhalation - Frequency: Long Term, systemic effects

Worker Professional: 260 mg/m<sup>3</sup> - Consumer: 50 mg/m<sup>3</sup> - Exposure: Human Inhalation - Frequency: Short Term, local effects



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Worker Professional: 40 mg/kg - Consumer: 8 mg/kg - Exposure: Human Dermal -  
Frequency: Long Term, systemic effects

Consumer: 8 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects

#### PNEC Exposure Limit Values

ethanediol - CAS: 107-21-1

Target: Fresh Water - Value: 10 mg/l

Target: 08 - Value: 10 mg/l

Target: Marine water - Value: 1 mg/l

Target: 09 - Value: 199.5 mg/l

Target: Freshwater sediments - Value: 3.7 mg/kg

SODIUM BENZOATE - CAS: 532-32-1

Target: Fresh Water - Value: 0.13 mg/l

Target: Marine water - Value: 0.013 mg/l

Target: Freshwater sediments - Value: 1.76 mg/kg

Target: Marine water sediments - Value: 0.176 mg/kg

Target: 09 - Value: 10 mg/l

TETRABORATO DI POTASSIO TETRAIDRATO - CAS: 12045-78-2

Target: Fresh Water - Value: 2.02 mg/l

Target: Marine water - Value: 2.02 mg/l

Target: Soil (agricultural) - Value: 5.4 mg/kg

Target: 08 - Value: 13.7 mg/l

Target: 09 - Value: 10 mg/l

sodium nitrite - CAS: 7632-00-0

Target: Fresh Water - Value: 0.0054 mg/l

Target: Marine water - Value: 0.00616 mg/l

Target: Marine water sediments - Value: 0.0223 mg/kg

Target: Freshwater sediments - Value: 0.0195 mg/kg

Target: 09 - Value: 21 mg/l

methanol - CAS: 67-56-1

Target: Fresh Water - Value: 20.8 mg/l

Target: Marine water - Value: 2.08 mg/l

Target: Freshwater sediments - Value: 77 mg/kg

Target: Marine water sediments - Value: 7.7 mg/kg

Target: 09 - Value: 100 mg/l

#### 8.2. Exposure controls

Eye protection:

Safety goggles.

Compliant with EN 166

Protection for skin:

protective clothing

Protection for hands:

Nitrile or Viton gloves.

Compliant with EN 374.

Respiratory protection:

Not needed for normal use.

Thermal Hazards:

None

Environmental exposure controls:

None

Appropriate engineering controls:

None

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## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

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**CONCENTRATO L. 1**



Properties	Value	Method:	Notes:
Appearance and colour:	Liquid limpido Green.	--	--
Odour:	N.A.	--	--
Odour threshold:	N.A.	--	--
pH:	7.2	--	--
Melting point / freezing point:	N.A.	--	--
Initial boiling point and boiling range:	180°C approx.	--	--
Flash point:	N.A.	--	--
Evaporation rate:	N.A.	--	--
Solid/gas flammability:	N.A.	--	--
Upper/lower flammability or explosive limits:	N.A.	--	--
Vapour pressure:	N.A.	--	--
Vapour density:	N.A.	--	--
Relative density:	1.130 approx.	--	--
Solubility in water:	Soluble	--	--
Solubility in oil:	N.A.	--	--
Partition coefficient (n-octanol/water):	N.A.	--	--
Auto-ignition temperature:	N.A.	--	--
Decomposition temperature:	N.A.	--	--
Viscosity:	N.A.	--	--
Explosive properties:	N.A.	--	--
Oxidizing properties:	N.A.	--	--

9.2. Other information

Properties	Value	Method:	Notes:
Miscibility:	N.A.	--	--
Fat Solubility:	N.A.	--	--

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Conductivity:	N.A.	--	--
Substance Groups relevant properties	N.A.	--	--

NA=not applicable

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**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  
None in particular.
- 10.6. Hazardous decomposition products  
None.

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**SECTION 11: Toxicological information**

11.1. Information on toxicological effects

Toxicological information of the product:

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a) acute toxicity

The product is classified: Acute Tox. 4 H302

b) skin corrosion/irritation

Based on available data, the classification criteria are not met

c) serious eye damage/irritation

Based on available data, the classification criteria are not met

d) respiratory or skin sensitisation

Based on available data, the classification criteria are not met

e) germ cell mutagenicity

Based on available data, the classification criteria are not met

f) carcinogenicity

Based on available data, the classification criteria are not met

g) reproductive toxicity

Based on available data, the classification criteria are not met

h) STOT-single exposure

Based on available data, the classification criteria are not met

i) STOT-repeated exposure

The product is classified: STOT RE 2 H373

j) aspiration hazard

Based on available data, the classification criteria are not met

Toxicological information of the main substances found in the product:

ethanediol - CAS: 107-21-1

a) acute toxicity:



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Test: LD50 - Route: Oral - Species: Rat = 7712 mg/kg  
Test: LD50 - Route: Skin - Species: Mouse > 3500 mg/kg  
Test: LC50 - Route: Inhalation - Species: Rat > 2.5 mg/l - Duration: 4h  
Test: LD50 - Route: Skin - Species: Rabbit = 2000 mg/kg

g) reproductive toxicity:

Test: NOAEL(C) - Species: Mouse 1000 mg/kg

i) STOT-repeated exposure:

Test: NOAEL(C) - Route: Skin - Species: CANE 2200-4400 mg/kg - Source: OECD 410 -  
Notes: Organo bersaglio/Target organ: Rene/kidney

SODIUM BENZOATE - CAS: 532-32-1

a) acute toxicity:

Test: LD50 - Route: Oral - Species: Rat > 2000 mg/kg  
Test: LC50 - Route: Inhalation - Species: Rat > 12.2 mg/l - Duration: 4h  
Test: LD50 - Route: Skin - Species: Rabbit > 2000 mg/kg

TETRABORATO DI POTASSIO TETRAIDRATO - CAS: 12045-78-2

a) acute toxicity:

Test: OECD TG 401 - Route: Oral - Species: Rat 2000-5000 mg/kg  
Test: LD50 - Route: Skin - Species: Rabbit > 2000 mg/kg  
Test: OECD TG 403 - Route: Inhalation - Species: Rat 2.12 mg/l

sodium nitrite - CAS: 7632-00-0

a) acute toxicity:

Test: LD50 - Route: Oral - Species: Rat 180 mg/kg

methanol - CAS: 67-56-1

a) acute toxicity:

Test: LD50 - Route: Oral - Species: mam 300 mg/kg  
Test: LD50 - Route: Skin - Species: mam 300 mg/kg  
Test: STA - Route: Inhalation 3 mg/l

b) skin corrosion/irritation:

Test: Skin Irritant - Species: Rabbit Negative

c) serious eye damage/irritation:

Test: Eye Irritant - Species: Rabbit Negative

f) carcinogenicity:

Test: NOAEL - Route: Oral - Species: Rat 466 mg/kg

i) STOT-repeated exposure:

Test: LOAEL - Route: Oral - Species: mam 2340 mg/kg  
Test: NOAEL - Route: Inhalation - Species: Rat 1.06 mg/l

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## SECTION 12: Ecological information

### 12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.

ethanediol - CAS: 107-21-1

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish = 72860 mg/l - Duration h: 96  
Endpoint: EC50 - Species: Daphnia > 100 mg/l - Duration h: 48  
Endpoint: EC50 - Species: Algae 6500-13000 mg/l - Duration h: 96

b) Aquatic chronic toxicity:

Endpoint: NOEC - Species: Fish 15380 mg/l - Duration h: 168

SODIUM BENZOATE - CAS: 532-32-1

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish 484 mg/l - Duration h: 96  
Endpoint: EC50 - Species: Daphnia > 100 mg/l  
Endpoint: EC50 - Species: Algae > 30.5 mg/l - Duration h: 72

b) Aquatic chronic toxicity:

Endpoint: NOEC - Species: Fish 10 mg/l - Duration h: 144

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a) Aquatic acute toxicity:





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Endpoint: EC50 - Species: Algae 10 mg/l  
Endpoint: EC50 - Species: Daphnia 113 mg/l  
Endpoint: LC50 - Species: Fish 80 mg/l

b) Aquatic chronic toxicity:

Endpoint: NOEC - Species: Algae 7.2 mg/l  
Endpoint: NOEC - Species: Daphnia 15.4 mg/l  
Endpoint: NOEC - Species: Fish 12 mg/l

sodium nitrite - CAS: 7632-00-0

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish 0.54-26.3 mg/l - Duration h: 96  
Endpoint: LC50 - Species: Daphnia 4.93 mg/l - Duration h: 96  
Endpoint: EC50 - Species: Daphnia 15.4 mg/l - Duration h: 48 - Notes: OECD 202  
Endpoint: EC50 - Species: Algae > 100 mg/l - Duration h: 72 - Notes: OECD 201  
Endpoint: EC50 - Species: fanghi 421 mg/l - Duration h: 48  
Endpoint: CE5 - Species: fanghi 210 mg/l - Duration h: 3 - Notes: OECD 209

b) Aquatic chronic toxicity:

Endpoint: NOEC - Species: Fish 6.16 mg/l - Duration h: 240  
Endpoint: NOEC - Species: Daphnia 9.86 mg/l - Duration h: 744

methanol - CAS: 67-56-1

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish = 15400 mg/l - Duration h: 96  
Endpoint: EC50 - Species: Daphnia > 10000 mg/l - Duration h: 48  
Endpoint: EC50 - Species: batteri = 22000 mg/l - Duration h: 96  
Endpoint: CE4 - Species: fanghi = 2000 mg/l - Duration h: 15

#### 12.2. Persistence and degradability

None

SODIUM BENZOATE - CAS: 532-32-1

Biodegradability: Readily biodegradable

methanol - CAS: 67-56-1

Biodegradability: 4 - Duration: 20dd - %: 95

#### 12.3. Bioaccumulative potential

sodium nitrite - CAS: 7632-00-0

Bioaccumulation: Not bioaccumulative

methanol - CAS: 67-56-1

Bioaccumulation: Not bioaccumulative - Test: BCF - Bioconcentration factor 9

#### 12.4. Mobility in soil

N.A.

#### 12.5. Results of PBT and vPvB assessment

vPvB Substances: None - PBT Substances: None

#### 12.6. Other adverse effects

None

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## 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.

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## SECTION 14: Transport information

### 14.1. UN number

Not classified as dangerous in the meaning of transport regulations.

### 14.2. UN proper shipping name

N.A.

### 14.3. Transport hazard class(es)

8002/5

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- N.A.
- 14.4. Packing group  
N.A.
- 14.5. Environmental hazards  
ADR-Environmental Pollutant: No  
IMDG-Marine pollutant: No
- 14.6. Special precautions for user  
N.A.
- 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code  
No

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#### 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) 2015/830  
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)

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:

- Restriction 69

Volatile Organic compounds - VOCs = 92.65 %  
Volatile Organic compounds - VOCs = 926.48 g/Kg  
Volatile Organic compounds - VOCs = 1046.92 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
- None

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

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#### SECTION 16: Other information

Text of phrases referred to under heading 3:

H302 Harmful if swallowed.

H373 May cause damage to organs (kidneys) through prolonged or repeated exposure if

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swallowed.  
H319 Causes serious eye irritation.  
H361d Suspected of damaging the unborn child.  
H301 Toxic if swallowed.  
H400 Very toxic to aquatic life.  
H272 May intensify fire; oxidiser.  
H225 Highly flammable liquid and vapour.  
H331 Toxic if inhaled.  
H311 Toxic in contact with skin.  
H370 Causes damage to organs if inhaled, in contact with skin and if swallowed.  
H371 May cause damage to organs.  
H370 Causes damage to organs.

Hazard class and hazard category	Code	Description
Ox. Sol. 2	2.14/2	Oxidising solid, Category 2
Flam. Liq. 2	2.6/2	Flammable liquid, Category 2
Acute Tox. 3	3.1/3/Dermal	Acute toxicity (dermal), Category 3
Acute Tox. 3	3.1/3/Inhal	Acute toxicity (inhalation), Category 3
Acute Tox. 3	3.1/3/Oral	Acute toxicity (oral), Category 3
Acute Tox. 4	3.1/4/Oral	Acute toxicity (oral), Category 4
Eye Irrit. 2	3.3/2	Eye irritation, Category 2
Repr. 2	3.7/2	Reproductive toxicity, Category 2
STOT SE 1	3.8/1	Specific target organ toxicity - single exposure, Category 1
STOT SE 2	3.8/2	Specific target organ toxicity - single exposure, Category 2
STOT RE 2	3.9/2	Specific target organ toxicity - repeated exposure, Category 2
Aquatic Acute 1	4.1/A1	Acute aquatic hazard, category 1

Paragraphs modified from the previous revision:

SECTION 2: Hazards identification  
SECTION 3: Composition/information on ingredients  
SECTION 7: Handling and storage  
SECTION 8: Exposure controls/personal protection

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

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Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
Acute Tox. 4, H302	Calculation method
STOT RE 2, H373	Calculation method

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.