Safety Data Sheet
SYSTEM 52A70 FRENAFILETTI FORTE

Safety Data Sheet dated 6/7/2019, version 4

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

1.1. Product identifier

Mixture identification:

Trade name: SYSTEM 52A70 FRENAFILETTI FORTE

Trade code: 4701

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

Recommended use:

Anaerobic sealing adhesive

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, Skin Irrit. 2, Causes skin irritation.
- Warning, Eye Irrit. 2, Causes serious eye irritation.
- Warning, Skin Sens. 1, May cause an allergic skin reaction.
- Warning, STOT SE 3, May cause respiratory irritation.

  Aquatic Chronic 4, May cause long lasting harmful effects to aquatic life.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

Hazard pictograms:

Warning

Hazard statements:

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H335 May cause respiratory irritation.

H413 May cause long lasting harmful effects to aquatic life.

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.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P405 Store locked up.
P501 Dispose of contents/container in accordance with applicable regulations.

Special Provisions:
None

Contains
HYDROXYPROPYL METHACRYLATE
cumene hydroperoxide
2-HYDROXYETHYL METHACRYLATE: May produce an allergic reaction.

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

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% bisphenol a ethoxylate dimethacrylate
REACH No.: 01-2119980659-17, CAS: 41637-38-1, EC: 609-946-4
4.1/C4 Aquatic Chronic 4 H413

>= 25% - < 30% HYDROXYPROPYL METHACRYLATE
REACH No.: 01-2119490226-37, CAS: 27813-02-1, EC: 248-666-3
3.3/2 Eye Irrit. 2 H319
3.4.2/1 Skin Sens. 1 H317

>= 5% - < 7% 2-HYDROXYETHYL METHACRYLATE
REACH No.: 01-2119490169-29, CAS: 868-77-9, EC: 212-782-2
3.2/2 Skin Irrit. 2 H315
3.3/2 Eye Irrit. 2 H319
3.4.2/1 Skin Sens. 1 H317

>= 1% - < 2% cumene hydroperoxide
REACH No.: 01-2119475796-19, Index number: 617-002-00-8, CAS: 80-15-9, EC: 201-254-7
2.8/E Self-react. E H242
3.1/4/Oral Acute Tox. 4 H302
3.1/4/Dermal Acute Tox. 4 H312
3.1/3/Inhal Acute Tox. 3 H331
3.2/1B Skin Corr. 1B H314
3.3/1 Eye Dam. 1 H318
3.8/3 STOT SE 3 H335
3.9/2 STOT RE 2 H373
4.1/C2 Aquatic Chronic 2 H411

Specific Concentration Limits:
1% <= C < 3%: Eye Irrit. 2 H319
1% <= C < 10%: STOT SE 3 H335

3% <= C < 10%: Skin Irrit. 2 H315
3% <= C < 10%: Eye Dam. 1 H318
C >= 10%: Skin Corr. 1B H314

>= 1% - < 2% TRIS(2-HYDROXYETHYL)ISOCYANURATE TRIACRYLATE
CAS: 40220-08-4, EC: 254-843-6
3.3/1 Eye Dam. 1 H318

>= 0.5% - < 1% ethanediol
REACH No.: 01-2119456816-28, CAS: 107-21-1, EC: 203-473-3
3.1/4/Oral Acute Tox. 4 H302
3.9/2 STOT RE 2 H373

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:

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an opthalmologist immediately.
Protect uninjured eye.

In case of Ingestion:

Do NOT induce vomiting.
In case of ingestion: contact a physician.

In case of Inhalation:

In case of inhalation, consult a doctor immediately and show him packing or label.

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:
Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Appropriate Extinguishing Media:
Foam
To carbon dioxide.
To dust.
Not Recommended Extinguishing Media:
To water.

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.
Wear breathing apparatus if exposed to vapours/dusts/aerosols.
Provide adequate ventilation.
Use appropriate respiratory protection.
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.
Use localized ventilation system.
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 in well-closed containers, preferably in a cool place, away from sources of heat and direct sunlight.

Keep away from food, drink and feed.
Incompatible materials:
None in particular.
Instructions as regards storage premises:
Adequately ventilated premises.

7.3. Specific end use(s)
Adesivo. Sigillante

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
ethanediol - CAS: 107-21-1
20101.13 - TWA(8h): 52 mg/m3, 20 ppm - STEL(): 104 mg/m3, 40 ppm
EU - TWA(8h): 52 mg/m3, 20 ppm - STEL: 104 mg/m3, 40 ppm - Notes: Skin
ACGIH - STEL: 10 mg/m3 - Notes: (I, H), A4 - URT irr
ACGIH - TWA(8h): 25 ppm - STEL: 50 ppm - Notes: (V), A4 - URT irr

DNEL Exposure Limit Values
bisphenol a ethoxylate dimethacrylate - CAS: 41637-38-1
Worker Professional: 3.52 mg/m3 - Exposure: Human Inhalation - Frequency: Long Term, systemic effects
Worker Professional: 2 mg/kg - Exposure: Human Dermal - Frequency: Long Term,

systemic effects
HYDROXYPROPYL METHACRYLATE - CAS: 27813-02-1
Worker Professional: 14.7 mg/m3 - Consumer: 8.8 mg/m3 - Exposure: Human Inhalation - Frequency: Long Term, systemic effects
Worker Professional: 4.2 mg/kg - Consumer: 2.5 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects
Consumer: 2.5 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects
2-HYDROXYETHYL METHACRYLATE - CAS: 868-77-9
Worker Professional: 4.9 mg/m3 - Consumer: 2.9 mg/m3 - Exposure: Human Inhalation - Frequency: Long Term, systemic effects
Worker Professional: 1.3 mg/kg - Consumer: 0.830 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects
Consumer: 0.830 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects
cumene hydroperoxide - CAS: 80-15-9
Worker Professional: 6 mg/m3 - Exposure: Human Inhalation - Frequency: Long Term, systemic effects
ethanediol - CAS: 107-21-1
Worker Professional: 35 mg/m3 - Consumer: 7 mg/m3 - Exposure: Human Inhalation - Frequency: Long Term, systemic effects
Worker Professional: 106 mg/kg - Consumer: 53 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects

PNEC Exposure Limit Values
HYDROXYPROPYL METHACRYLATE - CAS: 27813-02-1
Target: Fresh Water - Value: 0.904 mg/l
Target: Marine water - Value: 0.904 mg/l
Target: Freshwater sediments - Value: 6.28 mg/kg
Target: Marine water sediments - Value: 6.28 mg/kg
Target: 09 - Value: 10 mg/l
2-HYDROXYETHYL METHACRYLATE - CAS: 868-77-9
Target: Fresh Water - Value: 0.482 mg/l
Target: Soil (agricultural) - Value: 0.476 mg/l
Target: 09 - Value: 10 mg/l
Target: Freshwater sediments - Value: 3.79 mg/kg
cumene hydroperoxide - CAS: 80-15-9
Target: Fresh Water - Value: 0.031 mg/l
Target: Marine water - Value: 0.00031 mg/l
Target: Freshwater sediments - Value: 0.23 mg/kg
Target: Marine water sediments - Value: 0.023 mg/kg
Target: 09 - Value: 0.350 mg/l
ethanediol - CAS: 107-21-1
Target: Fresh Water - Value: 10 mg/l
Target: Marine water - Value: 1 mg/l
Target: Freshwater sediments - Value: 37 mg/kg
Target: Marine water sediments - Value: 3.7 mg/kg
Target: 09 - Value: 199.5 mg/l

8.2. Exposure controls

Eye protection:
Anti-splash goggles
Face protection shield.
Compliant with EN 166

Protection for skin:
protective clothing

Protection for hands:
Nitrile or Viton gloves.
Compliant with EN 374.

Respiratory protection:
In case of insufficient ventilation, use adequate respiratory protection equipment.

If the recommended exposure limits are exceeded:
Filter for organic vapours. Type A. (EN14387)

Thermal Hazards:
None

Environmental exposure controls:
None

Appropriate engineering controls:
The normal (mechanical) ventilation of the room should be sufficient for work not extended with the product. For more extensive activities with it (or if necessary to ensure the well-being of the worker), a local mechanical air extractor should be provided.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Method:	Notes:
Appearance and colour:	Liquid Green	--	--
Odour:	Characteristic	--	--
Odour threshold:	N.A.	--	--
pH:	N.A.	--	--
Melting point / freezing point:	N.A.	--	--
Initial boiling point and boiling range:	N.A.	--	--
Flash point:	>100°C	--	--
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:	1.1	--	--
Solubility in water:	Leggermente Soluble	--	--
Solubility in oil:	N.A.	--	--
Partition coefficient (n-octanol/water):	N.A.	--	--
Auto-ignition temperature:	N.A.	--	--
Decomposition temperature:	N.A.	--	--
Viscosity:	550 mPa s	--	--

	@25°C		
Explosive properties:	N.A.	--	--
Oxidizing properties:	N.A.	--	--

9.2. Other information

Properties	Value	Method:	Notes:
Miscibility:	Solventi organici	--	--
Fat Solubility:	N.A.	--	--
Conductivity:	N.A.	--	--
Substance Groups relevant properties	N.A.	--	--

NA=not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity
Strong oxidising agents.
10.2. Chemical stability
Stable at normal ambient temperatures and when used as recommended.
10.3. Possibility of hazardous reactions
It is unlikely that any group of materials or specific material will react with the product, creating a dangerous situation.
10.4. Conditions to avoid
Avoid lack of air and contamination with metals.
10.5. Incompatible materials
Metals and their salts.

Free radical initiators.
10.6. Hazardous decomposition products
Thermal decomposition may result in carbon monoxide, carbon dioxide and other unidentified organic compounds.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Toxicological information of the product:
SYSTEM 52A70 FRENAFILETTI FORTE
a) acute toxicity

Based on available data, the classification criteria are not met
b) skin corrosion/irritation
The product is classified: Skin Irrit. 2 H315
c) serious eye damage/irritation
The product is classified: Eye Irrit. 2 H319
Route: EYE Positive
d) respiratory or skin sensitisation
The product is classified: Skin Sens. 1 H317
Route: Skin Positive
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
The product is classified: STOT SE 3 H335
i) STOT-repeated exposure

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

Based on available data, the classification criteria are not met
Toxicological information of the main substances found in the product:
bisphenol a ethoxylate dimethacrylate - CAS: 41637-38-1
a) acute toxicity:
Test: LD50 - Route: Oral - Species: Rat 2000.1 mg/kg
Test: LD50 - Route: Skin - Species: Rat 2000.1 mg/kg
b) skin corrosion/irritation:
Test: Skin Irritant - Route: Skin Negative
c) serious eye damage/irritation:
Test: Eye Irritant - Route: EYE Negative
d) respiratory or skin sensitisation:
Test: Skin Sensitization - Route: Skin Negative
e) germ cell mutagenicity:
Test: Genotoxicity - Species: vitro Negative
i) STOT-repeated exposure:
Test: NOAEL - Route: Oral - Species: Rat 1000 mg/kg
Test: NOAEL - Route: Oral - Species: Rat 300 mg/kg
HYDROXYPROPYL METHACRYLATE - CAS: 27813-02-1
a) acute toxicity:
Test: LD50 - Route: Oral - Species: Rat 2000.1 mg/kg
Test: LD50 - Route: Skin - Species: Rabbit 5000 mg/kg
b) skin corrosion/irritation:
Negative
c) serious eye damage/irritation:
Positive
d) respiratory or skin sensitisation:
Route: Inhalation Negative
Route: Skin Positive
e) germ cell mutagenicity:
Negative
2-HYDROXYETHYL METHACRYLATE - CAS: 868-77-9
a) acute toxicity:
Test: LD50 - Route: Oral - Species: Rat 5000 mg/kg
Test: LD50 - Route: Skin - Species: Rabbit Positive
g) reproductive toxicity:
Test: NOAEL - Route: Oral - Species: Rat > 1000 mg/kg
cumene hydroperoxide - CAS: 80-15-9
a) acute toxicity:
Test: LD50 - Route: Oral - Species: Rat 328 mg/kg
Test: LD50 - Route: Skin - Species: Rat 1200 mg/kg
Test: LC50 - Route: Inhalation - Species: Rat 1.37 mg/l
b) skin corrosion/irritation:
Test: Skin Irritant - Route: Skin Positive

c) serious eye damage/irritation:
Test: Eye Irritant Positive
TRIS(2-HYDROXYETHYL)ISOCYANURATE TRIACRYLATE - CAS: 40220-08-4
a) acute toxicity:
Test: LD50 - Route: Oral - Species: Rat 2500 mg/kg
ethanediol - CAS: 107-21-1
a) acute toxicity:
Test: LD50 - Route: Skin - Species: Mouse 3500 mg/kg

SECTION 12: Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.
bisphenol a ethoxylate dimethacrylate - CAS: 41637-38-1
a) Aquatic acute toxicity:
Endpoint: LL50 - Species: Fish > 100 mg/l - Duration h: 96
Endpoint: NOELR - Species: Daphnia 100 mg/l - Duration h: 48
Endpoint: NOEC - Species: fanghi 10 mg/l - Duration h: 3
HYDROXYPROPYL METHACRYLATE - CAS: 27813-02-1
a) Aquatic acute toxicity:
Endpoint: LC50 - Species: Fish 493 mg/l - Duration h: 48
Endpoint: EC50 - Species: Daphnia 380 mg/l - Duration h: 48
Endpoint: EC50 - Species: Algae > 97.2 mg/l - Duration h: 72
Endpoint: NOEC - Species: Algae 97.2 mg/l - Duration h: 72
b) Aquatic chronic toxicity:
Endpoint: NOEC - Species: Daphnia 24.1 mg/l - Duration h: 504
2-HYDROXYETHYL METHACRYLATE - CAS: 868-77-9
a) Aquatic acute toxicity:
Endpoint: LC50 - Species: Fish > 100 mg/l - Duration h: 96
Endpoint: EC50 - Species: Daphnia 380 mg/l - Duration h: 48
Endpoint: EC50 - Species: Algae 836 mg/l - Duration h: 72
Endpoint: NOEC - Species: Algae 400 mg/l - Duration h: 72
Endpoint: NOEC - Species: Daphnia 24.1 mg/l - Duration h: 504
c) Bacteria toxicity:
Endpoint: EC50 - Species: batteri > 3000 mg/l - Duration h: 16
cumene hydroperoxide - CAS: 80-15-9
a) Aquatic acute toxicity:
Endpoint: LC50 - Species: Fish 3.9 mg/l - Duration h: 96
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
Endpoint: NOEC - Species: Daphnia 8590 mg/l - Duration h: 168
c) Bacteria toxicity:
Endpoint: CE20 - Species: fanghi 1.995 mg/l - Duration h: 0.5

12.2. Persistence and degradability

None
bisphenol a ethoxylate dimethacrylate - CAS: 41637-38-1
Biodegradability: 4
HYDROXYPROPYL METHACRYLATE - CAS: 27813-02-1
Biodegradability: 4 - Duration: 28gg - %: 94.2
2-HYDROXYETHYL METHACRYLATE - CAS: 868-77-9
Biodegradability: 4 - Duration: 28gg - %: 84
cumene hydroperoxide - CAS: 80-15-9

Biodegradability: 4
ethanediol - CAS: 107-21-1
Biodegradability: 4 - Duration: .10gg - %: 90-100

12.3. Bioaccumulative potential
bisphenol a ethoxylate dimethacrylate - CAS: 41637-38-1
Bioaccumulation: Bioaccumulative - Test: log Pow 5.30-5.62
2-HYDROXYETHYL METHACRYLATE - CAS: 868-77-9
Bioaccumulation: Bioaccumulative - Test: BCF - Bioconcentrantion factor 1.44

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

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Recover if possible. In so doing, comply with the local and national regulations currently in force.

Additional disposal information:
CER 08 04 09 adhesives or sealants containing organic solvents or other dangerous substances.
Do not discharge into drains, ground water or water courses. Observe the laws in force.

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)
N.A.

14.4. Packing group
N.A.

14.5. Environmental hazards
ADR-Enviromental 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

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

Restrictions related to the substances contained:

No restriction.

Volatile Organic compounds - VOCs = 7.40 %
Volatile Organic compounds - VOCs = 74.00 g/Kg
Volatile Organic compounds - VOCs = 79.18 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

SECTION 16: Other information

Text of phrases referred to under heading 3:

H413 May cause long lasting harmful effects to aquatic life.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H315 Causes skin irritation.
H242 Heating may cause a fire.
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H331 Toxic if inhaled.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.

Hazard class and hazard category	Code	Description
Self-react. E	2.8/E	Self-reactive substance or mixture, Type E
Acute Tox. 3	3.1/3/Inhal	Acute toxicity (inhalation), Category 3
Acute Tox. 4	3.1/4/Dermal	Acute toxicity (dermal), Category 4
Acute Tox. 4	3.1/4/Oral	Acute toxicity (oral), Category 4
Skin Corr. 1B	3.2/1B	Skin corrosion, Category 1B

Skin Irrit. 2	3.2/2	Skin irritation, Category 2
Eye Dam. 1	3.3/1	Serious eye damage, Category 1
Eye Irrit. 2	3.3/2	Eye irritation, Category 2
Skin Sens. 1	3.4.2/1	Skin Sensitisation, Category 1
STOT SE 3	3.8/3	Specific target organ toxicity - single exposure, Category 3
STOT RE 2	3.9/2	Specific target organ toxicity - repeated exposure, Category 2
Aquatic Chronic 2	4.1/C2	Chronic (long term) aquatic hazard, category 2
Aquatic Chronic 4	4.1/C4	Chronic (long term) aquatic hazard, category 4

Paragraphs modified from the previous revision:

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]:

Classification according to Regulation (EC) Nr. 1272/2008	**Classification procedure**
Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2, H319	Calculation method
Skin Sens. 1, H317	Calculation method
STOT SE 3, H335	Calculation method
Aquatic Chronic 4, H413	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.