

Safety Data Sheet
RESFOAM 1K-M

Safety Data Sheet dated: 14/06/2022 - version 4



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

1.1. Product identifier

Mixture identification:

Trade name: RESFOAM 1K-M

Trade code: 902446

UFI: A9H3-805V-J00R-RNUC

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

Recommended use: Polyurethane foam

Uses advised against: Data not available

1.3. Details of the supplier of the safety data sheet

Company: MAPEI S.p.A. - Via Cafiero, 22 - 20158 Milano

Tel. +(39)02376731 (office hours) - Fax: +39-02-37673.214 - www.mapei.it

Responsible: sicurezza@mapei.it

1.4. Emergency telephone number

Centro antiveleni, Azienda ospedaliera "Antonio Cardarelli", III Servizio di anestesia e rianimazione, via Antonio Cardarelli 9, Napoli - Tel. 081 5453333

Centro antiveleni, Azienda ospedaliera universitaria Careggi, U.O. Tossicologia medica, via Largo Brambilla 3, Firenze - Tel. 055 7947819

Centro antiveleni, Centro nazionale d'informazione tossicologica, IRCCS Fondazione Salvatore Maugeri Clinica del lavoro e della riabilitazione, via Salvatore Maugeri 10, Pavia - Tel. 0382 24444

Centro antiveleni, Azienda ospedaliera Niguarda Ca' Granda, piazza Ospedale Maggiore 3, Milano - Tel. 02 66101029

Centro antiveleni, Azienda ospedaliera "Papa Giovanni XXIII", Tossicologia clinica, Dipartimento di farmacia clinica e farmacologia, piazza OMS 1, Bergamo - Tel. 800 883300

Centro antiveleni Policlinico "Umberto I", PRGM tossicologia d'urgenza, viale del Policlinico 155, Roma - Tel. 06 49978000

Centro antiveleni del Policlinico "Agostino Gemelli", Servizio di tossicologia clinica, largo Agostino Gemelli 8, Roma - Tel. 06 3054343

Centro antiveleni, Azienda ospedaliera universitaria Riuniti, viale Luigi Pinto 1, Foggia - Tel. 800 183459

Centro antiveleni, Ospedale pediatrico Bambino Gesù, Dipartimento emergenza e accettazione DEA, piazza Sant'Onofrio 4, Roma - Tel. 06 68593726

Centro antiveleni dell'Azienda ospedaliera universitaria integrata (AOUI) di Verona sede di Borgo Trento, piazzale Aristide Stefani, 1 - 37126 Verona - Tel. 800 011858

SECTION 2: Hazards identification



2.1. Classification of the substance or mixture

Regulation (EC) n. 1272/2008 (CLP)

| | |
|---------------|--|
| Acute Tox. 4 | Harmful if inhaled. |
| Skin Irrit. 2 | Causes skin irritation. |
| Eye Irrit. 2 | Causes serious eye irritation. |
| Resp. Sens. 1 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| Skin Sens. 1B | May cause an allergic skin reaction. |
| Carc. 2 | Suspected of causing cancer. |
| STOT SE 3 | May cause respiratory irritation. |
| STOT RE 2 | May cause damage to organs through prolonged or repeated exposure. |

2 The concentration of isocyanate stated is the percentage by weight of the free monomer calculated with reference to the total weight of the mixture.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

Regulation (EC) n. 1272/2008 (CLP)

Pictograms and Signal Words



Danger

Hazard statements:

| | |
|------|--|
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H332 | Harmful if inhaled. |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H335 | May cause respiratory irritation. |
| H351 | Suspected of causing cancer. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |

Precautionary statements:

| | |
|-----------|---|
| P201 | Obtain special instructions before use. |
| P202 | Do not handle until all safety precautions have been read and understood. |
| P261 | Avoid breathing mist/vapours/spray. |
| P280 | Wear protective gloves/clothing and eye/face protection. |
| P304+P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| P342+P311 | If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. |

Special Provisions:

| | |
|--------|---|
| EUH204 | Contains isocyanates. May produce an allergic reaction. |
|--------|---|

Contains:

Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate

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

As from 24 August 2023 adequate training is required before industrial or professional use.

2.3. Other hazards

No PBT, vPvB or endocrine disruptor substances present in concentration $\geq 0.1\%$.

Other Hazards: No other hazards

SECTION 3: Composition/information on ingredients**3.1. Substances**

Not Relevant

3.2. Mixtures

Mixture identification: RESFOAM 1K-M

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

| Concentration (w/w) | Name | Ident. Numb. | Classification | Registration Number |
|---------------------|-----------------------------------|--|---|-----------------------|
| $\geq 50 - < 75\%$ | diphenylmethane-4,4'-diisocyanate | CAS:101-68-8 EC:202-966-0 Index:615-005-00-9 | Acute Tox. 4, H332 Eye Irrit. 2, H319 STOT SE 3, H335 Skin Irrit. 2, H315 Resp. Sens. 1, H334 Skin Sens. 1, H317 STOT RE 2, H373 Carc. 2, H351 | 01-2119457014-47-XXXX |
| | | | Specific Concentration Limits: 0,1% \leq C < 100%: Resp. Sens. 1 H334 5% \leq C < 100%: Skin Irrit. 2 H315 5% \leq C < 100%: Eye Irrit. 2 H319 5% \leq C < 100%: STOT SE 3 H335 | |

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 of 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 ophthalmologist immediately.

Protect uninjured eye.

In case of Ingestion:

Do not induce vomiting, get medical attention showing the SDS and the hazard label.

In case of Inhalation:

If breathing is irregular or stopped, administer artificial respiration.

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

Eye irritation

Eye damages

Skin Irritation

Erythema

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:

(see paragraph 4.1)

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water.

Carbon dioxide (CO₂).

Extinguishing media which must not be used for safety reasons:

None in particular.

5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

5.3. Advice for firefighters

Use suitable breathing apparatus.

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.

6.2. Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

Limit leakages with earth or sand.

6.3. Methods and material for containment and cleaning up

Suitable material for taking up: absorbing material, organic, sand

Retain contaminated washing water and dispose it.

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.

Exercise the greatest care when handling or opening the container.

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.

Contaminated clothing should be changed before entering eating areas.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

7.2. Conditions for safe storage, including any incompatibilities

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)

Recommendation(s)

None in particular

Industrial sector specific solutions:

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

List of components with OEL value

| | OEL Type | Country | Ceiling | Long Term mg/m ³ | Long Term ppm | Short Term mg/m ³ | Short Term ppm | Note |
|--|---------------|----------------|---------|-----------------------------|---------------|------------------------------|----------------|--|
| diphenylmethane-4,4'-diisocyanate CAS: 101-68-8 | National | NORWAY | | 0,050 | 0,005 | | 0,010 | A 4 |
| | SUVA | | | 0,020 | | 0,020 | | |
| | National | SWEDEN | C | 0,030 | 0,002 | 0,050 | 0,005 | SWEDEN, Ceiling limit value |
| | NDS | | | 0,030 | | | | |
| | NDSP | | | 0,090 | | | | |
| | ACGIH | | | | 0,005 | | | Resp sens |
| | National | POLAND | | 0,030 | | 0,090 | | |
| | National | AUSTRIA | | 0,050 | 0,005 | 0,100 | 0,010 | |
| | DFG | GERMANY | C | | | 0,050 | | |
| | ACGIH | | | | 0,005 | | | respiratory sensitization (listed under Methylene bisphenyl isocyanate (MDI)) |
| | National | SWEDEN | | 0,030 | 0,002 | | | |
| | National | FRANCE | | 0,100 | 0,010 | 0,200 | 0,020 | |
| | National | SPAIN | | 0,052 | 0,005 | | | |
| | National | DENMARK | | 0,050 | 0,005 | | | |
| | National | GERMANY | | 0,050 | | | | |
| | National | PORTUGAL | | | 0,005 | | | |
| | National | BELGIUM | | 0,052 | 0,005 | | | |
| | NDS | POLAND | | 0,030 | | | | |
| | NDSch | POLAND | | | | 0,090 | | |
| | National | CZECH REPUBLIC | | 0,050 | | | | |
| | National | HUNGARY | | 0,05 | | 0,050 | | |
| | Malaysian OEL | MALAYSIA | | 0,051 | 0,005 | | | |
| | National | ESTONIA | | 0,050 | 0,005 | 0,100 | 0,010 | |
| | National | CZECH REPUBLIC | C | | | 0,100 | | |
| | National | SLOVAKIA | | 0,002 | | | | |
| | National | SLOVENIA | | 0,050 | | 0,050 | | |
| | National | ROMANIA | | | | 0,150 | | |
| | National | LITHUANIA | | 0,050 | 0,005 | | | |
| | National | LITHUANIA | C | | | 0,100 | 0,010 | |
| | National | NORWAY | | 0,05 | 0,005 | | 0,01 | |

Predicted No Effect Concentration (PNEC) values

| | PNEC Limit | Exposure Route | Exposure Frequency Remark |
|--|-------------------|-------------------------------------|----------------------------------|
| diphenylmethane-4,4'-diisocyanate CAS: 101-68-8 | 1 mg/l | Fresh Water | |
| | 0,1 mg/l | Marine water | |
| | 1 mg/kg | Soil | |
| | 1 mg/l | Microorganisms in sewage treatments | |
| | 10 mg/l | Intermittent release | |

Derived No Effect Level. (DNEL)

| | Worker Industrial | Worker Professional | Consumer | Exposure Route | Exposure Frequency Remark |
|--|--------------------------|----------------------------|-----------------|-----------------------|----------------------------------|
| diphenylmethane-4,4'-diisocyanate CAS: 101-68-8 | 50 mg/kg | | | Human Dermal | Short Term, systemic effects |
| | 0,1 mg/m3 | | | Human Inhalation | Short Term, systemic effects |
| | 0,1 mg/m3 | | | Human Inhalation | Short Term, local effects |
| | 0,05 mg/m3 | | | Human Inhalation | Long Term, systemic effects |
| | 0,05 mg/m3 | | | Human Inhalation | Long Term, local effects |
| | | 25 mg/kg | | Human Dermal | Short Term, systemic effects |
| | | 0,05 mg/m3 | | Human Inhalation | Short Term, systemic effects |
| | | 20 mg/kg | | Human Oral | Short Term, systemic effects |
| | | 0,05 mg/m3 | | Human Inhalation | Short Term, local effects |
| | | 0,025 mg/m3 | | Human Inhalation | Long Term, systemic effects |
| | | 0,025 mg/m3 | | Human Inhalation | Long Term, local effects |
| | 28,7 mg/cm2 | 17,2 mg/cm2 | | Human Dermal | Short Term, local effects |

8.2. Exposure controls

Eye protection:

Use close fitting safety goggles, don't use eye lens.

Protection for skin:

Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

Protection for hands:

Suitable materials for safety gloves; EN ISO 374:

Polychloroprene - CR: thickness $\geq 0,5\text{mm}$; breakthrough time $\geq 480\text{min}$.

Nitrile rubber - NBR: thickness $\geq 0,35\text{mm}$; breakthrough time $\geq 480\text{min}$.

Butyl rubber - IIR: thickness $\geq 0,5\text{mm}$; breakthrough time $\geq 480\text{min}$.

Fluorinated rubber - FKM: thickness $\geq 0,4\text{mm}$; breakthrough time $\geq 480\text{min}$.

Neoprene gloves are suggested (0,5 mm) not recommended gloves: not waterproof gloves

Respiratory protection:

Personal Protective Equipment should comply with relevant CE standards (as EN ISO 374 for gloves and EN ISO 166 for goggles), correctly maintained and stored. Consult the supplier to check the suitability of equipment against specific chemicals and for user information.

Respiratory protection must be used where exposure levels exceed workplace exposure limits. Refer to appropriate EN standards, like EN 136, 140, 143, 149, 14387 for information on selection and use of appropriate respiratory protection equipment.

In case of insufficient ventilation use mask with ABEKP filters (EN 14387).

Use adequate protective respiratory equipment.

Hygienic and Technical measures

Not available

Appropriate engineering controls:

Not available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid

Appearance: liquid

Color: light yellow

Odour: Characteristic

Odour threshold: Not available

Melting point / freezing point: -20 °C (-4 °F)

Initial boiling point and boiling range: Not available

Flammability: N.A.

Upper/lower flammability or explosive limits: Not available

Flash point: 130 °C (266 °F)

Auto-ignition temperature: Not available

Decomposition temperature: Not available

pH: Not available

Viscosity: 800.00 cPs

Kinematic viscosity: Not available

Solubility in water: Insoluble

Solubility in oil: soluble

Partition coefficient (n-octanol/water): Not available

Vapour pressure: Not available

Relative density: 1.10 g/cm³

Vapour density: Not available

Particle characteristics:

Particle size: Not available

9.2. Other information

Miscibility: Not available

Conductivity: Not available

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

None in particular.

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information

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

Toxicological information of the mixture:

- | | |
|--------------------------------------|--|
| a) acute toxicity | The product is classified: Acute Tox. 4(H332) ATEmix - Inhalation (Mist) : 2.63158 mg/l |
| 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) |
| d) respiratory or skin sensitisation | The product is classified: Resp. Sens. 1(H334), Skin Sens. 1B(H317) |
| e) germ cell mutagenicity | Not classified |

Based on available data, the classification criteria are not met

| | |
|---------------------------|--|
| f) carcinogenicity | The product is classified: Carc. 2(H351) |
| 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(H335) |
| i) STOT-repeated exposure | The product is classified: STOT RE 2(H373) |
| j) aspiration hazard | Not classified Based on available data, the classification criteria are not met |

Toxicological information on main components of the mixture:

| | | | |
|-----------------------------------|--------------------------------------|---|------|
| diphenylmethane-4,4'-diisocyanate | a) acute toxicity | LD50 Oral Rat > 2000 mg/kg | |
| | | LD50 Skin Rabbit > 9400 mg/kg | |
| | b) skin corrosion/irritation | Skin Irritant Skin Rabbit Positive | |
| | d) respiratory or skin sensitisation | Skin Sensitization Skin Mouse Positive | |
| | | Respiratory Sensitization Inhalation Positive | |
| | f) carcinogenicity | Carcinogenicity Inhalation Rat = 6, mg/m3 | 2 y |
| | g) reproductive toxicity | NOAEL Inhalation Rat = 12, mg/m3 | 20 d |

11.2 Information on other hazards

Endocrine disrupting properties:

No endocrine disruptor substances present in concentration $\geq 0.1\%$

SECTION 12: Ecological information

12.1. Toxicity

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

Eco-Toxicological Information:

List of Eco-Toxicological properties of the product

Not classified for environmental hazards

Based on available data, the classification criteria are not met

List of components with eco-toxicological properties

| Component | Ident. Numb. | Ecotox Infos |
|-----------------------------------|---|---|
| diphenylmethane-4,4'-diisocyanate | CAS: 101-68-8 - EINECS: 202-966-0 - INDEX: 615-005-00-9 | a) Aquatic acute toxicity : LC50 Fish > 1000 mg/L 96 a) Aquatic acute toxicity : EC50 Daphnia > 1000 mg/L 24 b) Aquatic chronic toxicity : NOEC Daphnia > 10 mg/L - 21 d a) Aquatic acute toxicity : EC50 Algae > 1640 mg/L 72 c) Bacteria toxicity : EC50 > 100 mg/L 3 d) Terrestrial toxicity : NOEC > 1000 mg/kg - 14 d e) Plant toxicity : NOEC > 1000 mg/kg - 14 d |

12.2. Persistence and degradability

N.A.

12.3. Bioaccumulative potential

N.A.

12.4. Mobility in soil

N.A.

12.5. Results of PBT and vPvB assessment

No PBT, vPvB or endocrine disruptor substances present in concentration $\geq 0.1\%$.

12.6 Endocrine disrupting properties

No endocrine disruptor substances present in concentration $\geq 0.1\%$

12.7 Other adverse effects

Not available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

The generation of waste should be avoided or minimized wherever possible. Recover if possible.

A waste code (EWC) according to European List of Waste (LoW) cannot be specified, due to dependence on the usage. Contact and send to an authorized waste disposal service.

Methods of disposal:

Disposal of this product, solutions, packaging and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Dispose of surplus and nonrecyclable products via a licensed waste disposal contractor.

Do not dispose of waste into sewers.

Hazardous waste: Yes

Disposal considerations:

Do not allow to enter drains or watercourses.

Dispose of product according to all federal, state and local applicable regulations.

If this product is mixed with other wastes, the original waste product code may no longer apply and the appropriate code should be assigned.

Dispose of containers contaminated by the product in accordance with local or national legal provisions. For further information, contact your local waste authority.

Special precautions:

This material and its container must be disposed of in a safe way. Care should be taken when handling untreated empty containers.

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Empty containers or liners may retain some product residues. Do not re-use empty containers.

SECTION 14: Transport information

Not classified as dangerous in the meaning of transport regulations.

14.1. UN number or ID number

Not Applicable

14.2. UN proper shipping name

Not Applicable

14.3. Transport hazard class(es)

Not Applicable

14.4. Packing group

Not Applicable

14.5. Environmental hazards

Not Applicable

14.6. Special precautions for user

Not Applicable

Road and Rail (ADR-RID) :

Not Applicable

Air (IATA) :

Not Applicable

Sea (IMDG) :

Not Applicable

14.7. Maritime transport in bulk according to IMO instruments

Not Applicable

SECTION 15: Regulatory information

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

VOC (2004/42/EC) : N.A. g/l

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 (EU) n. 2020/878

Regulation (EC) n. 1272/2008 (CLP)

Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013

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. 2019/521 (ATP 12 CLP)
 Regulation (EU) n. 2018/1480 (ATP 13 CLP)
 Regulation (EU) n. 2020/217 (ATP 14 CLP)
 Regulation (EU) n. 2020/1182 (ATP 15 CLP)

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

None

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: 3

Restrictions related to the substances contained: 56, 74, 75

SVHC Substances:

SVHC substances not present in a concentration $\geq 0.1\%$ (w/w)

German Water Hazard Class (WGK)

Class 1: slightly hazardous for water.

15.2. Chemical safety assessment

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

SECTION 16: Other information

| Code | Description |
|------|---|
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H332 | Harmful if inhaled. |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H335 | May cause respiratory irritation. |
| H351 | Suspected of causing cancer. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H373 | May cause damage to organs through prolonged or repeated exposure if inhaled. |

| Code | Hazard class and hazard category | Description |
|-------------|----------------------------------|--|
| 3.1/4/Inhal | Acute Tox. 4 | Acute toxicity (inhalation), Category 4 |
| 3.2/2 | Skin Irrit. 2 | Skin irritation, Category 2 |
| 3.3/2 | Eye Irrit. 2 | Eye irritation, Category 2 |
| 3.4.1/1 | Resp. Sens. 1 | Respiratory Sensitisation, Category 1 |
| 3.4.2/1 | Skin Sens. 1 | Skin Sensitisation, Category 1 |
| 3.4.2/1B | Skin Sens. 1B | Skin Sensitisation, Category 1B |
| 3.6/2 | Carc. 2 | Carcinogenicity, Category 2 |
| 3.8/3 | STOT SE 3 | Specific target organ toxicity — single exposure, Category 3 |
| 3.9/2 | STOT RE 2 | Specific target organ toxicity — repeated exposure, Category 2 |

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 |
|---|--------------------------|
| 3.1/4/Inhal | Calculation method |
| 3.2/2 | Calculation method |
| 3.3/2 | Calculation method |
| 3.4.1/1 | Calculation method |
| 3.4.2/1B | Calculation method |
| 3.6/2 | Calculation method |
| 3.8/3 | Calculation method |
| 3.9/2 | Calculation method |

If appropriate, specific provisions in relation to possible training for workers are mentioned in section 2. Any training related to safety in the

workplace must in any case refer to a risk assessment that must be carried out by a company safety officer taking into account the specific operating and environmental conditions in which the products are used.

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 SDS cancels and replaces any preceding release.

Legend to abbreviations and acronyms used in the safety data sheet:

ACGIH: American Conference of Governmental Industrial Hygienists

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

AND: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

ATE: Acute Toxicity Estimate

ATEmix: Acute toxicity Estimate (Mixtures)

BCF: Biological Concentration Factor

BEI: Biological Exposure Index

BOD: Biochemical Oxygen Demand

CAS: Chemical Abstracts Service (division of the American Chemical Society).

CAV: Poison Center

CE: European Community

CLP: Classification, Labeling, Packaging.

CMR: Carcinogenic, Mutagenic and Reprotoxic

COD: Chemical Oxygen Demand

COV: Volatile Organic Compound

CSA: Chemical Safety Assessment

CSR: Chemical Safety Report

DMEL: Derived Minimal Effect Level

DNEL: Derived No Effect Level.

DPD: Dangerous Preparations Directive

DSD: Dangerous Substances Directive

EC50: Half Maximal Effective Concentration

ECHA: European Chemicals Agency

EINECS: European Inventory of Existing Commercial Chemical Substances.

ES: Exposure Scenario

GefStoffVO: Ordinance on Hazardous Substances, Germany.

GHS: Globally Harmonized System of Classification and Labeling of Chemicals.

IARC: International Agency for Research on Cancer

IATA: International Air Transport Association.

IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA).

IC50: half maximal inhibitory concentration

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.

IRCCS: Scientific Institute for Research, Hospitalization and Health Care

KAFH: KAFH

KSt: Explosion coefficient.

LC50: Lethal concentration, for 50 percent of test population.

LD50: Lethal dose, for 50 percent of test population.

LDLo: Leathal Dose Low

N.A.: Not Applicable

N/A: Not Applicable

N/D: Not defined/ Not available

NA: Not available

NIOSH: National Institute for Occupational Safety and Health

NOAEL: No Observed Adverse Effect Level

OSHA: Occupational Safety and Health Administration.

PBT: Persistent, Bioaccumulative and Toxic

PGK: Packaging Instruction

PNEC: Predicted No Effect Concentration.

PSG: Passengers

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.

TWATLV: Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).

vPvB: Very Persistent, Very Bioaccumulative.

WGK: German Water Hazard Class.

*** Sheet model entirely changed in compliance to regulatory update.**