# Safety Data Sheet
# FINISH FR2-55 MATT BASE

AkzoNobel

**Safety Data Sheet dated 9/3/2020, version 4**

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

1.1. Product identifier

Trade name: FINISH FR2-55 MATT BASE
Trade code: 557XXXXXB

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

Recommended use:
Water based 2K polyurethane paint

1.3. Details of the supplier of the safety data sheet

Company:
MAPAERO SAS
10, Avenue de la Rijole
09100 PAMIERS
FRANCE
Tel : +33 (0)5 34 01 34 01 / Fax : +33 (0)5 61 60 23 30

Competent person responsible for the safety data sheet:
PSRA_PAMIERS@akzonobel.com

1.4. Emergency telephone number

Tel: 0044 151 951 3317

## SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

EC regulation criteria 1272/2008 (CLP)
The product is not classified as dangerous according to Regulation EC 1272/2008 (CLP).
Adverse physicochemical, human health and environmental effects:
No other hazards

2.2. Label elements

The product is not classified as dangerous according to Regulation EC 1272/2008 (CLP).
Hazard pictograms:
None
Hazard statements:
None
Precautionary statements:
None
Special Provisions:
EUH210 Safety data sheet available on request.
EUH208 Contains reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H -isothiazol-3-one [EC no. 220-239-6] (3:1); reaction mass. May produce an allergic reaction.
Special provisions according to Annex XVII of REACH and subsequent amendments:
Restricted to professional users.

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:

| Qty | Name | Ident. Number | Classification |
|---|---|---|---|
| >= 20% - < 25% | titanium dioxide | CAS: 13463-67-7<br>EC: 236-675-5<br>REACH No.: 01-2119489379-17 | The product is not classified as dangerous according to Regulation EC 1272/2008 (CLP). |
| >= 2.5% - < 5% | talc | CAS: 14807-96-6<br>EC: 238-877-9 | The product is not classified as dangerous according to Regulation EC 1272/2008 (CLP). |
| >= 0.5% - < 2.5% | Silicon dioxide | CAS: 7631-86-9<br>EC: 231-545-4<br>REACH No.: 01-2119379499-16 | The product is not classified as dangerous according to Regulation EC 1272/2008 (CLP). |
| >= 0.5% - < 2.5% | silane, dichlorodimethyl-, reaction prodcuts with silica | CAS: 68611-44-9<br>EC: 271-893-4 | The product is not classified as dangerous according to Regulation EC 1272/2008 (CLP). |
| < 0.1% | reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H -isothiazol-3-one [EC no. 220-239-6] (3:1); reaction mass | Index number: 613-167-00-5<br>CAS: 55965-84-9<br>EC: 611-341-5 | 3.2/1B Skin Corr. 1B H314<br>3.4.2/1-1A-1B Skin Sens. 1,1A, 1B H317<br>4.1/A1 Aquatic Acute 1 H400<br>4.1/C1 Aquatic Chronic 1 H410<br>3.1/3/Oral Acute Tox. 3 H301<br>3.1/3/Dermal Acute Tox. 3 H311<br>3.1/3/Inhal Acute Tox. 3 H331 |

## SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:
Wash with plenty of water and soap.
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

Treatment:
None

## SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:
Water with AFFF (Aqueous Film Forming Foam) additive

Foam

Unsuitable methods of extinction :

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 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, inhaltion of vapours and mists.
See also section 8 for recommended protective equipment.
Advice on general occupational hygiene:
Do not eat or drink while working.

7.2. Conditions for safe storage, including any incompatibilities

Stored between 5°C and 35°C (41°F and 95°F) in full and sealed original packaging.
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)

None in particular

## SECTION 8: Exposure controls/personal protection

8.1. Control parameters

titanium dioxide - CAS: 13463-67-7
- OEL Type: ACGIH - TWA(8h): 10 mg/m3
- OEL Type: VME - TWA: 10 mg/m3
- OEL Type: MAK-KZW - STEL(15min): 10 mg/m3
- OEL Type: MAK-TMW - TWA(8h): 5 mg/m3
- OEL Type: DFG - TWA(8h): 0.3 mg/m3 - STEL(15min): 2.4 mg/m3

talc - CAS: 14807-96-6
- OEL Type: MAK-TMW - TWA(8h): 2 mg/m3
- OEL Type: ACGIH - TWA(8h): 2 mg/m3

Silicon dioxide - CAS: 7631-86-9
- OEL Type: VME - TWA(8h): 5 mg/m3
- OEL Type: VME - TWA(8h): 10 mg/m3
- OEL Type: AGW - TWA: 4 mg/m3
- OEL Type: MAK-TMW - TWA(8h): 4 mg/m3

silane, dichlorodimethyl-, reaction prodcuts with silica - CAS: 68611-44-9
- OEL Type: VME - TWA(8h): 5 mg/m3
- OEL Type: VME - TWA(8h): 10 mg/m3

reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H -isothiazol-3-one [EC no. 220-239-6] (3:1); reaction mass - CAS: 55965-84-9
- OEL Type: MAK-TMW - TWA(8h): 0.05 mg/m3

DNEL Exposure Limit Values

titanium dioxide - CAS: 13463-67-7
Worker Professional: 10 mg/m3

Silicon dioxide - CAS: 7631-86-9
Worker Professional: 4 mg/m3 - Frequency: Short Term, local effects
Worker Professional: 4 mg/m3 - Frequency: Long Term, local effects

PNEC Exposure Limit Values

titanium dioxide - CAS: 13463-67-7
Target: Marine water - Value: 1 mg/l
Target: Marine water sediments - Value: 100 mg/kg
Target: Fresh Water - Value: 0.127 mg/l
Target: Freshwater sediments - Value: 1000 mg/kg

8.2. Exposure controls

Eye protection:
Before handling, wear safety goggles with protective sides accordance with standard EN166.

Protection for skin:
Wear protective clothing against solid chemicals and particles suspended in the air (type 5) in accordance with standard EN13982-1 to prevent skin contact.

In the event of a risk of splashing, wear protective clothing against chemical risks (type 6) in accordance with EN13034 to prevent skin contact.

Protection for hands:
Use suitable protective gloves that are resistant to chemical agents in accordance with standard EN374.

Respiratory protection:
Full-/Half-/quarter-face masks (DIN EN 136/140).
Anti-gas and vapour filter(s) (Combined filters) in accordance with standard EN14387 : A2

Particle filter according to standard EN143 : P3

Thermal Hazards:
None

Environmental exposure controls:
It is recommended using all available means to prevent and regulate exposure in compliance with legal requirements.
Use all the appropriate means to keep suspended dust levels under exposure limits.

Appropriate engineering controls:
None

## SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|---|---|
| Appearance and colour: | Liquid |
| Odour: | Slight odor |
| Odour threshold: | N.A. |
| pH: | 8 |
| Melting point / freezing point: | 0 °C |
| Initial boiling point and boiling range: | 100 °C |
| Solid/gas flammability: | N.A. |
| Upper/lower flammability or explosive limits: | N.A. |
| Vapour density: | N.A. |
| Flash point: | PE> 93 °C |
| Evaporation rate: | N.A. |
| Vapour pressure: | N.A. |
| Relative density: | >1 |
| Solubility in water: | N.A. |
| 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

| | |
|---|---|
| Miscibility: | N.A. |
| Fat Solubility: | N.A. |
| Conductivity: | N.A. |
| Substance Groups relevant properties: | N.A. |

## 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

The frost
The accumulation of electrostatic discharges

10.5. Incompatible materials

Acids
Oxidizing agents
Bases
Metals

10.6. Hazardous decomposition products

Nitrogen oxides
Carbon oxides

## SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological information of the product:
N.A.
Toxicological information of the main substances found in the product:
Silicon dioxide - CAS: 7631-86-9
a) acute toxicity:
Test: LD50 - Route: Oral - Species: Rat > 5000 mg/kg
Test: LD50 - Route: Skin - Species: Rabbit > 6000 mg/kg
Test: LC0 - Route: Inhalation - Species: Rat > 140-2000 mg/m3 - Duration: 4h
e) germ cell mutagenicity:
Test: Mutagenesis Negative
g) reproductive toxicity:
Test: NOAEL - Route: Oral - Species: Rat = 1350 mg/kg - Duration: 24h
i) STOT-repeated exposure:
Test: NOAEL - Route: Oral - Species: Rat = 9000 mg/kg - Duration: 24h
Test: NOAEL - Route: Inhalation - Species: Rat = 1 mg/m3
silane, dichlorodimethyl-, reaction prodcuts with silica - CAS: 68611-44-9
a) acute toxicity:
Test: LC50 - Route: Oral - Species: Rat > 5000 mg/kg
Test: LC50 - Route: Inhalation - Species: Rat > 0.477 mg/l - Duration: 4h
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H -isothiazol-3-one [EC no. 220-239-6] (3:1); reaction mass - CAS: 55965-84-9
a) acute toxicity:
Test: LD50 - Route: Oral - Species: Rat = 4467 mg/kg
Test: LD50 - Route: Skin - Species: Rat > 5000 mg/kg

If not differently specified, the information required in Regulation (EU)2015/830 listed below must be considered as N.A.:
a) acute toxicity;
b) skin corrosion/irritation;
c) serious eye damage/irritation;
d) respiratory or skin sensitisation;
e) germ cell mutagenicity;
f) carcinogenicity;
g) reproductive toxicity;
h) STOT-single exposure;
i) STOT-repeated exposure;
j) aspiration hazard.

## SECTION 12: Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.
Silicon dioxide - CAS: 7631-86-9
a) Aquatic acute toxicity:
Endpoint: LC50 Fish > 10000 mg/l - Duration h: 96
c) Bacteria toxicity:
Endpoint: EC50 Daphnia > 10000 mg/l - Duration h: 24
silane, dichlorodimethyl-, reaction prodcuts with silica - CAS: 68611-44-9
a) Aquatic acute toxicity:
Endpoint: LC50 Fish > 10000 mg/l - Duration h: 96
Endpoint: EC50 Daphnia > 10000 mg/l - Duration h: 24
Endpoint: CI50 Algae > 10000 mg/l - Duration h: 72
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H -isothiazol-3-one [EC no. 220-239-6] (3:1); reaction mass - CAS: 55965-84-9
a) Aquatic acute toxicity:
Endpoint: EC50 Daphnia = 6.7 mg/l - Duration h: 48
Endpoint: EC50 Algae = 3.2 mg/l - Duration h: 72
Endpoint: EC50 Fish = 14.6 mg/l - Duration h: 96

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

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.
The codes for waste (Decision 2001/573/CE, Directive 2006/12/CEE, Directive 94/31/CEE on hazardous waste) :
08 01 11* waste paint and varnish containing organic solvents or other hazardous substances
15 01 10* packaging containing residues of or contaminated by hazardous substances
Additional disposal information:
Do not discharge into drains,water, nature.

## 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

N.A.

The product is transported in conditions that comply with exemption criteria for ADR transport.

## 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)
Regulation (EU) n. 2018/699 (ATP 11 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:

No restriction.

Restrictions related to the substances contained:

Restriction 28

Volatile Organic compounds - VOCs = 10.00 g/l
Volatile CMR substances = 0.00 %

Halogenated VOCs which are assigned the risk phrase R40 = 0.00 %
Organic Carbon - C = 0.00
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.

## SECTION 16: Other information

Full text of phrases referred to in Section 3:
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H301 Toxic if swallowed.
H311 Toxic in contact with skin.
H331 Toxic if inhaled.

| Hazard class and hazard category | Code | Description |
|---|---|---|
| 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 |
| Skin Corr. 1B | 3.2/1B | Skin corrosion, Category 1B |
| Skin Sens. 1,1A,1B | 3.4.2/1-1A-1B | Skin Sensitisation, Category 1,1A,1B |
| Aquatic Acute 1 | 4.1/A1 | Acute aquatic hazard, category 1 |
| Aquatic Chronic 1 | 4.1/C1 | Chronic (long term) aquatic hazard, category 1 |

Paragraphs modified from the previous revision:

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

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. |
| 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. |

# Safety Data Sheet
# FINISH FR2-55 HARDENER

AkzoNobel

**Safety Data Sheet dated 25/8/2020, version 8**

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

1.1. Product identifier

Trade name: FINISH FR2-55 HARDENER
Trade code: 21055001D

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

Recommended use:
Water based 2K polyurethane paint

1.3. Details of the supplier of the safety data sheet

Company:
MAPAERO SAS
10, Avenue de la Rijole
09100 PAMIERS
FRANCE
Tel : +33 (0)5 34 01 34 01 / Fax : +33 (0)5 61 60 23 30

Competent person responsible for the safety data sheet:
PSRA_PAMIERS@akzonobel.com

1.4. Emergency telephone number

Tel: 0044 151 951 3317

## SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

EC regulation criteria 1272/2008 (CLP)

- Warning, Flam. Liq. 3, Flammable liquid and vapour.
- Warning, Acute Tox. 4, Harmful if inhaled.
- Warning, Skin Sens. 1, May cause an allergic skin reaction.
- Warning, STOT SE 3, May cause respiratory irritation.
- Warning, STOT SE 3, May cause drowsiness or dizziness.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

Hazard pictograms:

Warning

Hazard statements:

H226 Flammable liquid and vapour.
H332 Harmful if inhaled.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.

Precautionary statements:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P312 Call a doctor if you feel unwell.
P370+P378 In case of fire, use a foam fire extinguisher to extinguish.
P403+P235 Store in a well-ventilated place. Keep cool.

Special Provisions:

EUH204 Contains isocyanates. May produce an allergic reaction.

Contains

hexamethylene diisocyanate, oligomers
2-ethoxy-1-methylethyl acetate; 2PG1EEA
Benzene, 1,3-diisocyanatomethyl-, polymer with 1,6-diisocyanatohexane, polyethyl

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:

| Qty | Name | Ident. Number | Classification |
|---|---|---|---|
| >= 50% | hexamethylene diisocyanate, oligomers | CAS: 28182-81-2<br>EC: 500-060-2<br>REACH No.: 01-2119485796-17 | 3.1/4/Inhal Acute Tox. 4 H332<br>3.4.2/1 Skin Sens. 1 H317<br>3.8/3 STOT SE 3 H335 |
| >= 25% - < 50% | 2-ethoxy-1-methylethyl acetate; 2PG1EEA | Index number: 603-177-00-8<br>CAS: 54839-24-6<br>EC: 259-370-9<br>REACH No.: 01-2119475116-39 | 2.6/3 Flam. Liq. 3 H226<br>3.8/3 STOT SE 3 H336 |
| >= 5% - < 10% | Benzene, 1,3-diisocyanatomethyl-, polymer with 1,6-diisocyanatohexane, polyethyl | CAS: 1160001-30-8<br>EC: 948-808-0<br>REACH No.: Exempt (polymer) | 3.1/4/Inhal Acute Tox. 4 H332<br>3.4.2/1 Skin Sens. 1 H317<br>3.8/3 STOT SE 3 H335<br>4.1/C3 Aquatic Chronic 3 H412 |
| < 0.1% | hexamethylene-di-isocyanate | CAS: 822-06-0<br>EC: 212-485-8<br>REACH No.: 01-2119457571-37 | 3.1/4/Oral Acute Tox. 4 H302<br>3.3/2 Eye Irrit. 2 H319<br>3.1/1/Inhal Acute Tox. 1 H330<br>3.8/3 STOT SE 3 H335<br>3.2/2 Skin Irrit. 2 H315<br>3.4.1/1-1A-1B Resp. Sens. 1,1A, 1B H334<br>3.4.2/1-1A-1B Skin Sens. 1,1A, 1B H317 |

## 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 immediatley 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 induce vomiting.
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

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

Suitable extinguishing media:
In case of fire, use a foam fire extinguisher to extinguish.
Water with AFFF (Aqueous Film Forming Foam) additive

Foam

Unsuitable methods of extinction :
Water

Water jet

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.
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

Stored between 5°C and 35°C (41°F and 95°F) in full and sealed original packaging.
Always keep in a well ventilated place.
Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.
Keep away from food, drink and feed.
Incompatible materials:
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

hexamethylene diisocyanate, oligomers - CAS: 28182-81-2
- OEL Type: VLE - TWA: 1 mg/m3

2-ethoxy-1-methylethyl acetate; 2PG1EEA - CAS: 54839-24-6
- OEL Type: AGW - TWA(8h): 300 mg/m3, 50 ppm - STEL: 600 mg/m3, 100 ppm
- OEL Type: DFG - TWA: 300 mg/m3, 50 ppm - STEL: 600 mg/m3, 100 ppm
- OEL Type: MAK-TMW - TWA(8h): 300 mg/m3, 50 ppm
- OEL Type: MAK-KZW - STEL(15min): 1200 mg/m3, 200 ppm
- OEL Type: TWA - TWA(8h): 120 mg/m3, 20 ppm
- OEL Type: STEL - STEL: 240 mg/m3, 40 ppm

hexamethylene-di-isocyanate - CAS: 822-06-0
- OEL Type: VLE - TWA: 0.15 mg/m3, 0.02 ppm
- OEL Type: VME - TWA: 0.075 mg/m3, 0.01 ppm
- OEL Type: ACGIH - TWA(8h): 0.005 ppm
- OEL Type: TWA - TWA: 0.03 mg/m3, 0.01 ppm

- OEL Type: MAK-TMW - TWA(8h): 0.035 mg/m3, 0.005 ppm
- OEL Type: MAK-KZW - STEL(15min): 0.035 mg/m3, 0.005 ppm

DNEL Exposure Limit Values

hexamethylene diisocyanate, oligomers - CAS: 28182-81-2

Worker Professional: 0.5 mg/m3 - Exposure: Human Inhalation - Frequency: Long Term, local effects

Worker Professional: 1 mg/m3 - Exposure: Human Inhalation - Frequency: Short Term, local effects

2-ethoxy-1-methylethyl acetate; 2PG1EEA - CAS: 54839-24-6

Worker Professional: 608 mg/m3 - Exposure: Human Inhalation - Frequency: Short Term, systemic effects

Worker Professional: 103 mg/kg bw/day - Exposure: Human Dermal - Frequency: Long Term, systemic effects

Worker Professional: 302 mg/m3 - Exposure: Human Inhalation - Frequency: Long Term, systemic effects

Worker Professional: 365 mg/m3 - Exposure: Human Inhalation - Frequency: Short Term, systemic effects

Worker Professional: 62 mg/kg bw/day - Exposure: Human Dermal - Frequency: Long Term, systemic effects

Worker Professional: 181 mg/m3 - Exposure: Human Inhalation - Frequency: Long Term, systemic effects

Worker Professional: 13.1 mg/kg bw/day - Exposure: Human Oral - Frequency: Long Term, systemic effects

PNEC Exposure Limit Values

hexamethylene diisocyanate, oligomers - CAS: 28182-81-2

Target: Fresh Water - Value: 0.127 mg/l

Target: Marine water - Value: 0.0127 mg/l

Target: Freshwater sediments - Value: 266701 mg/kg

Target: Marine water sediments - Value: 26670 mg/kg

Target: Microorganisms in sewage treatments - Value: 88 mg/l

Target: Soil (agricultural) - Value: 53183 mg/kg

2-ethoxy-1-methylethyl acetate; 2PG1EEA - CAS: 54839-24-6

Target: Fresh Water - Value: 1.3 mg/l

Target: Marine water - Value: 0.13 mg/l

Target: Freshwater sediments - Value: 6.4 mg/kg dwt

Target: Marine water sediments - Value: 0.64 mg/kg dwt

Target: Soil (agricultural) - Value: 1.34 mg/kg dwt

Target: Microorganisms in sewage treatments - Value: 62.5 mg/l

8.2. Exposure controls

Eye protection:

Before handling, wear safety goggles with protective sides accordance with standard EN166.

Protection for skin:

Wear protective clothing against solid chemicals and particles suspended in the air (type 5) in accordance with standard EN13982-1 to prevent skin contact.

In the event of a risk of splashing, wear protective clothing against chemical risks (type 6) in accordance with EN13034 to prevent skin contact.

Protection for hands:

Use suitable protective gloves that are resistant to chemical agents in accordance with standard EN374.

Respiratory protection:

Full-/Half-/quarter-face masks (DIN EN 136/140).

Anti-gas and vapour filter(s) (Combined filters) in accordance with standard EN14387 : A2

Particle filter according to standard EN143 : P3

Thermal Hazards:

None

Environmental exposure controls:

It is recommended using all available means to prevent and regulate exposure in compliance with legal requirements.

Use all the appropriate means to keep suspended dust levels under exposure limits.

Appropriate engineering controls:

None

## SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|---|---|
| Appearance and colour: | Liquid |
| Odour: | Solvent odor |
| Odour threshold: | N.A. |
| pH: | N.A. |
| Melting point / freezing point: | -89 °C |
| Initial boiling point and boiling range: | 158 °C |
| Solid/gas flammability: | N.A. |
| Upper/lower flammability or explosive limits: | N.A. |
| Vapour density: | N.A. |
| Flash point: | 23 <= PE <= 55 °C |
| Evaporation rate: | N.A. |
| Vapour pressure: | <110 kPa (1.10 bar) |
| Relative density: | >1 |
| Solubility in water: | N.A. |
| Solubility in oil: | N.A. |
| Partition coefficient (n-octanol/water): | N.A. |
| Auto-ignition temperature: | 325 °C |
| Decomposition temperature: | N.A. |
| Viscosity: | N.A. |
| Explosive properties: | N.A. |
| Oxidizing properties: | N.A. |

9.2. Other information

| | |
|---|---|
| Miscibility: | N.A. |
| Fat Solubility: | N.A. |
| Conductivity: | N.A. |
| Substance Groups relevant properties | N.A. |

## 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

Flames and hot surfaces
The accumulation of electrostatic discharges

The humidity
The heat

10.5. Incompatible materials

Acids
Oxidizing agents
Bases
Water

10.6. Hazardous decomposition products

Nitrogen oxides
Carbon oxides

## SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological information of the product:
N.A.
Toxicological information of the main substances found in the product:
hexamethylene diisocyanate, oligomers - CAS: 28182-81-2
a) acute toxicity:
Test: LD50 - Route: Oral - Species: Rat > 2500 mg/kg - Source: OCDE 423
Test: LD50 - Route: Skin - Species: Rat > 2000 mg/kg - Source: OCDE 402
Test: LD50 - Route: Skin - Species: Rabbit > 2000 mg/kg
Test: NOAEL - Route: Inhalation - Species: Rat = 3.3 mg/m3 - Source: OCDE 413
2-ethoxy-1-methylethyl acetate; 2PG1EEA - CAS: 54839-24-6
a) acute toxicity:
Test: LD0 - Route: Oral - Species: Rat = 5000 mg/kg
Test: LC50 - Route: Inhalation Mist - Species: Rat = 6.99 mg/l
b) skin corrosion/irritation:
Test: Skin Irritant - Route: Skin - Species: Rabbit Positive
c) serious eye damage/irritation:
Test: Eye Irritant - Species: Rabbit Positive
d) respiratory or skin sensitisation:
Test: Skin Sensitization - Route: Skin - Species: Rat Positive
e) germ cell mutagenicity:
Test: Genotoxicity Negative
f) carcinogenicity:
Test: Carcinogenicity Negative
g) reproductive toxicity:
Test: Reproductive Toxicity Negative
i) STOT-repeated exposure:
Test: NOAEL - Route: Inhalation - Species: Rat = 1.226 mg/l - Duration: 96h
hexamethylene-di-isocyanate - CAS: 822-06-0
a) acute toxicity:
Test: LC50 - Route: Inhalation Vapour - Species: Rat = 0.124 mg/l - Duration: 4h
Test: LD50 - Route: Oral - Species: Rat = 746 mg/kg
Test: LD50 - Route: Skin - Species: Rat > 7000 mg/kg

If not differently specified, the information required in Regulation (EU)2015/830 listed below must be considered as N.A.:
a) acute toxicity;
b) skin corrosion/irritation;
c) serious eye damage/irritation;
d) respiratory or skin sensitisation;
e) germ cell mutagenicity;
f) carcinogenicity;

g) reproductive toxicity;
h) STOT-single exposure;
i) STOT-repeated exposure;
j) aspiration hazard.

## SECTION 12: Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.
hexamethylene diisocyanate, oligomers - CAS: 28182-81-2
a) Aquatic acute toxicity:
Endpoint: LC50 Fish > 100 mg/l - Duration h: 96
Endpoint: EC50 Daphnia > 100 mg/l - Duration h: 48
Endpoint: EC50 Algae > 1000 mg/l - Duration h: 72
Endpoint: EC50 Bacteria = 3828 mg/l - Duration h: 3
2-ethoxy-1-methylethyl acetate; 2PG1EEA - CAS: 54839-24-6
a) Aquatic acute toxicity:
Endpoint: LC50 Fish = 140 mg/l - Duration h: 96
Endpoint: EC50 Daphnia = 110 mg/l - Duration h: 48
Endpoint: EC50 Algae > 100 mg/l - Duration h: 72
Endpoint: NOEC Algae > 100 mg/l - Duration h: 72
Endpoint: EC10 Bacteria = 560 mg/l - Duration h: 16

12.2. Persistence and degradability

hexamethylene diisocyanate, oligomers - CAS: 28182-81-2
Biodegradability: Non-readily biodegradable - Duration h: 28days - %: 1

12.3. Bioaccumulative potential

N.A.

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. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.
The codes for waste (Decision 2001/573/CE, Directive 2006/12/CEE, Directive 94/31/CEE on hazardous waste) :
08 01 11* waste paint and varnish containing organic solvents or other hazardous substances
15 01 10* packaging containing residues of or contaminated by hazardous substances
Additional disposal information:
Do not discharge into drains,water, nature.

## SECTION 14: Transport information

14.1. UN number

| | |
|---|---|
| ADR-UN Number: | 1263 |
| IATA-UN Number: | 1263 |
| IMDG-UN Number: | 1263 |

14.2. UN proper shipping name

| | |
|---|---|
| ADR-Shipping Name: | PAINT |
| IATA-Shipping Name: | PAINT |
| IMDG-Shipping Name: | PAINT |

14.3. Transport hazard class(es)


| | |
|---|---|
| ADR-Class: | 3 |
| ADR - Hazard identification number: | 30 |
| IATA-Class: | 3 |
| IATA-Label: | 3 |
| IMDG-Class: | 3 |

14.4. Packing group

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

14.5. Environmental hazards

| | |
|---|---|
| ADR-Enviromental Pollutant: | No |
| IMDG-Marine pollutant: | No |

14.6. Special precautions for user

| | |
|---|---|
| ADR-Subsidiary hazards: | - |
| ADR-S.P.: | 163 367 650 |
| ADR-Transport category (Tunnel restriction code): | 3 (D/E) |
| IATA-Passenger Aircraft: | 355 |
| IATA-Subsidiary hazards: | - |
| IATA-Cargo Aircraft: | 366 |
| IATA-S.P.: | A3 A72 A192 |
| IATA-ERG: | 3L |
| IMDG-EmS: | F-E , S-E |
| IMDG-Subsidiary hazards: | - |
| IMDG-Stowage and handling: | Category A |
| IMDG-Segregation: | - |

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

N.A.

## 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)
Regulation (EU) n. 2018/669 (ATP 11 CLP)
Regulation (EU) n. 2018/1480 (ATP 13 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 = 368.00 g/l
Volatile CMR substances = 0.00 %
Halogenated VOCs which are assigned the risk phrase R40 = 0.00 %
Organic Carbon - C = 0.00

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: P5c

15.2. Chemical safety assessment

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

## SECTION 16: Other information

Full text of phrases referred to in Section 3:
H332 Harmful if inhaled.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
H226 Flammable liquid and vapour.
H336 May cause drowsiness or dizziness.
H412 Harmful to aquatic life with long lasting effects.
H302 Harmful if swallowed.
H319 Causes serious eye irritation.
H330 Fatal if inhaled.
H315 Causes skin irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

| Hazard class and hazard category | Code | Description |
|---|---|---|
| Flam. Liq. 3 | 2.6/3 | Flammable liquid, Category 3 |
| Acute Tox. 1 | 3.1/1/Inhal | Acute toxicity (inhalation), Category 1 |
| Acute Tox. 4 | 3.1/4/Inhal | Acute toxicity (inhalation), Category 4 |
| Acute Tox. 4 | 3.1/4/Oral | Acute toxicity (oral), Category 4 |
| Skin Irrit. 2 | 3.2/2 | Skin irritation, Category 2 |
| Eye Irrit. 2 | 3.3/2 | Eye irritation, Category 2 |
| Resp. Sens. 1,1A,1B | 3.4.1/1-1A-1B | Respiratory Sensitisation, Category 1,1A,1B |
| Skin Sens. 1 | 3.4.2/1 | Skin Sensitisation, Category 1 |
| Skin Sens. 1,1A,1B | 3.4.2/1-1A-1B | Skin Sensitisation, Category 1,1A,1B |
| STOT SE 3 | 3.8/3 | Specific target organ toxicity - single exposure, Category 3 |
| Aquatic Chronic 3 | 4.1/C3 | Chronic (long term) aquatic hazard, category 3 |

Paragraphs modified from the previous revision:

SECTION 2: Hazards identification
SECTION 5: Firefighting measures
SECTION 6: Accidental release measures
SECTION 7: Handling and storage
SECTION 8: Exposure controls/personal protection
SECTION 9: Physical and chemical properties
SECTION 13: Disposal considerations
SECTION 14: Transport information
SECTION 15: Regulatory information
SECTION 16: Other information

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 |
|---|---|
| Flam. Liq. 3, H226 | On basis of test data |
| Acute Tox. 4, H332 | Calculation method |
| Skin Sens. 1, H317 | Calculation method |
| STOT SE 3, H335 | Calculation method |
| STOT SE 3, H336 | 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. |
| 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. |