

Safety Data Sheet

Conforms to Regulation (EC) No. 1907/2006 (REACH), Article 31, Annex II, as amended by Commission Regulation (EU) 2020/878

FACTORY COLOR PU-S (B)

Date of first edition: 5/10/2021

Safety Data Sheet dated 3/30/2023

version 4

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

1.1. Product identifier

Mixture identification:

Trade name: FACTORY COLOR PU-S (B)

Trade code: 05032021 -4

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

Recommended use: hardener

Uses advised against: All uses other than recommended ones

1.3. Details of the supplier of the safety data sheet

Company: KERAKOLL S.p.A.

Via dell'Artigianato, 9

41049 Sassuolo (MODENA) - ITALY

Tel. +39 0536 816511 Fax. +39 0536816581

safety@kerakoll.com

1.4. Emergency telephone number

European emergency phone number 112

Kerakoll Italy (+39) 0536 816511

Ireland

Poison information centre: (+353) 809 2166 (Daily 8am-10pm)

In case of emergency call 999 or 112

Malta

In case of emergency call: 112 (24h)

SECTION 2: Hazards identification



2.1. Classification of the substance or mixture

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

Flam. Liq. 3 Flammable liquid and vapour.

Acute Tox. 4 Harmful if inhaled.

Skin Sens. 1 May cause an allergic skin reaction.

STOT SE 3 May cause respiratory irritation.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

Regulation (EC) No 1272/2008 (CLP):

Pictograms and Signal Words



Warning

Hazard statements

H226 Flammable liquid and vapour.

H317 May cause an allergic skin reaction.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

Precautionary statements

| | |
|-----------|--|
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P260 | Do not breathe vapours. |
| P280 | Wear protective gloves and eye protection. |
| P302+P352 | IF ON SKIN: Wash with plenty of water. |
| P370+P378 | In case of fire, use water to extinguish. |
| P501 | Dispose of contents/container in accordance with applicable regulations. |

Contains

Hexamethylene diisocyanate, oligomers
4-isocyanatosulphonyltoluene

Dir. 2004/42/EC (VOC directive)

Two-pack reactive performance coatings for specific end use such as floors

EU limit value for this product (cat. A/j): 500 g/l

This product contains max 340.54 g/l VOC.

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

N.A.

3.2. Mixtures

Mixture identification: FACTORY COLOR PU-S (B)

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

| Qty | Name | Ident. Numb. | Classification | Registration Number |
|-----------|---------------------------------------|---|--|---------------------|
| 50-75 % | Hexamethylene diisocyanate, oligomers | CAS:28182-81-2 EC:500-060-2 | Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335 | 01-2119485796-17 |
| 10-19,9 % | 2-methoxy-1-methylethyl acetate | CAS:108-65-6 EC:203-603-9 | Flam. Liq. 3, H226; STOT SE 3, H336 | 01-2119475791-29 |
| < 0,5 % | 4-isocyanatosulphonyltoluene | CAS:4083-64-1 EC:223-810-8 Index:615-012-00-7 | Eye Irrit. 2, H319 STOT SE 3, H335 Skin Irrit. 2, H315 Resp. Sens. 1, H334, EUH014 Specific Concentration Limits: C $\geq 5\%$: Eye Irrit. 2 H319 C $\geq 5\%$: STOT SE 3 H335 C $\geq 5\%$: Skin Irrit. 2 H315 | 01-2119980050-47 |

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.
Remove contaminated clothing immediately and dispose off safely.

In case of eyes contact:

Wash immediately with water.

In case of Ingestion:

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

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

N.A.

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).

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

In case of fire, use water to extinguish.

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.

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

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

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.

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

Store at below 20 °C. Keep away from unguarded flame and heat sources. Avoid direct exposure to sunlight.

Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Cool and adequately ventilated.

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

Community Occupational Exposure Limits (OEL)

| Component | OEL Type | Country | Ceiling | Long Term mg/m3 | Long Term ppm | Short Term mg/m3 | Short Term ppm | Notes |
|---------------------------------|----------|--|---------|--------------------|------------------|---------------------|-------------------|--|
| 2-methoxy-1-methylethyl acetate | NATIONAL | AUSTRALIA | | 274.000 | 50.000 | 548.000 | 100.000 | |
| | NATIONAL | AUSTRIA | | 275.000 | 50.000 | 550.000 | 100.000 | |
| | NATIONAL | BELGIUM | | 275.000 | 50.000 | 550.000 | 100.000 | |
| | NATIONAL | DENMARK | | 275.000 | 50.000 | 550.000 | 100.000 | |
| | NATIONAL | FINLAND | | 270.000 | 50.000 | 550.000 | 100.000 | |
| | NATIONAL | FRANCE | | 275.000 | 50.000 | 550.000 | 100.000 | |
| | NATIONAL | GERMANY | | 270.000 | 50.000 | 270.000 | 100.000 | AGS |
| | NATIONAL | GERMANY | | 270.000 | 50.000 | 270.000 | 100.000 | DFG |
| | NATIONAL | HUNGARY | | 275.000 | | 550.000 | | |
| | NATIONAL | IRELAND | | 275.000 | 50.000 | 550.000 | 100.000 | |
| | NATIONAL | ITALY | | 275.000 | 50.000 | 550.000 | 100.000 | |
| | NATIONAL | LATVIA | | 275.000 | 50.000 | 550.000 | 100.000 | |
| | NATIONAL | ROMANIA | | 275.000 | 50.000 | 550.000 | 100.000 | |
| | NATIONAL | SPAIN | | 275.000 | 50.000 | 550.000 | 100.000 | |
| | NATIONAL | SWEDEN | | 275.000 | 50.000 | 550.000 | 100.000 | |
| | NATIONAL | SWITZERLAND | | 275.000 | 50.000 | 275.000 | 50.000 | |
| | NATIONAL | NETHERLANDS | | 275.000 | | | | |
| | NATIONAL | UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND | | 274.000 | 50.000 | 548.000 | 100.000 | |
| | NATIONAL | POLAND | | 260.000 | | 520.000 | | |
| | EU | NNN | | 275.000 | 50.000 | 550.000 | 100.000 | Skin |
| 4-isocyanatosulphonyltoluene | NATIONAL | AUSTRALIA | | 0.020 | | 0.070 | | |
| | NATIONAL | CROATIA | | 0.020 | | 0.070 | | |
| | NATIONAL | FINLAND | | | | 0.035 | | |
| | NATIONAL | UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND | | 0.020 | | 0.070 | | |
| | NATIONAL | IRELAND | | 0.020 | | 0.070 | | |
| | NATIONAL | SWITZERLAND | | 0.020 | | 0.020 | | |
| | NATIONAL | AUSTRIA | | 0.035 | 0.005 | 0.035 | 0.005 | |
| | NATIONAL | BELGIUM | | 0.034 | 0.005 | | | |
| Hexamethylene Diisocyanate | NATIONAL | DENMARK | | 0.035 | 0.005 | 0.070 | 0.010 | |
| | NATIONAL | FRANCE | | 0.075 | 0.010 | 0.150 | 0.020 | |
| | NATIONAL | GERMANY | | 0.035 | 0.005 | 0.035 | 0.005 | Germany AGS; Long term and short term: inhalable aerosol and vapour; |
| | NATIONAL | GERMANY | C | | | 0.070 | 0.010 | Germany AGS; Inhalable aerosol and vapour |
| | NATIONAL | AUSTRIA | | 0.035 | 0.005 | 0.035 | 0.005 | |
| | NATIONAL | BELGIUM | | 0.034 | 0.005 | | | |

| | | | | | | | |
|---------------|----------|---------|--------|-------|--------|--------|---|
| | NATIONAL | GERMANY | 0.035 | 0.005 | 0.035 | 0.005 | Germany DFG; Long term and short term: inhalable fraction and vapour; A momentary value of 0,01 ml/m ³ (0,070 mg/m ³) should not be exceeded |
| | NATIONAL | HUNGARY | 0.035 | | 0.035 | | |
| | NATIONAL | IRELAND | | 0.005 | | | As NCO |
| | NATIONAL | ITALY | 1.000 | | | | |
| | NATIONAL | LATVIA | 0.050 | | | | |
| | NATIONAL | POLAND | 0.040 | | 0.080 | | |
| | NATIONAL | ROMANIA | 0.050 | 0.007 | 1.000 | 0.140 | |
| | NATIONAL | SPAIN | 0.035 | 0.005 | | | |
| | NATIONAL | SWEDEN | 0.020 | 0.002 | 0.030 | 0.005 | Short-term limit value: 5 minutes average value |
| | ACGIH | NNN | | 0.005 | | | URT irr, resp sens |
| Chlorobenzene | NATIONAL | ITALY | 23.000 | 5.000 | 70.000 | 15.000 | |

Predicted No Effect Concentration (PNEC) values

| Component | CAS-No. | PNEC Limit | Exposure Route | Exposure Frequency |
|---------------------------------|-----------|---------------|-------------------------------------|--------------------|
| 2-methoxy-1-methylethyl acetate | 108-65-6 | 635.000 µg/l | Freshwater | |
| | | 6.350 mg/l | Intermittent releases (freshwater) | |
| | | 63.500 µg/l | Marine water | |
| | | 100.000 mg/l | Microorganisms in sewage treatments | |
| | | 3.290 mg/kg | Freshwater sediments | |
| | | 329.000 µg/kg | Marine water sediments | |
| | | 290.000 µg/kg | Soil | |
| 4-isocyanatosulphonyltoluene | 4083-64-1 | 30.000 µg/l | Freshwater | |
| | | 300.000 µg/l | Intermittent releases (freshwater) | |
| | | 3.000 µg/l | Marine water | |
| | | 400.000 µg/l | Microorganisms in sewage treatments | |
| | | 172.000 µg/kg | Freshwater sediments | |
| | | 17.200 µg/kg | Marine water sediments | |
| | | 16.800 µg/kg | Soil | |

Derived No Effect Level (DNEL) values

| Component | CAS-No. | Worker Industry | Worker Professional | Consumer | Exposure Route | Exposure Frequency |
|---------------------------------|-----------|-----------------|---------------------------|---------------------------|------------------|------------------------------|
| 2-methoxy-1-methylethyl acetate | 108-65-6 | | 275.000 mg/m ³ | 33.000 mg/m ³ | Human Inhalation | Long Term, systemic effects |
| | | | 550.000 mg/m ³ | | Human Inhalation | Short Term, systemic effects |
| | | | | 33.000 mg/m ³ | Human Inhalation | Long Term, local effects |
| | | | 796.000 mg/kg | 320.000 mg/kg | Human Dermal | Long Term, systemic effects |
| | | | | 36.000 mg/kg | Human Oral | Long Term, systemic effects |
| 4-isocyanatosulphonyltoluene | 4083-64-1 | | 3.240 mg/m ³ | 800.000 µg/m ³ | Human Inhalation | Long Term, systemic effects |

| | | | |
|---------------|---------------|--------------|-----------------------------|
| 920.000 µg/kg | 460.000 µg/kg | Human Dermal | Long Term, systemic effects |
| | 460.000 µg/kg | Human Oral | Long Term, systemic 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:

Nitrile rubber .

Respiratory protection:

Particle filter P2 .

Thermal Hazards:

N.A.

Environmental exposure controls:

N.A.

Hygienic and Technical measures

N.A.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical State Liquid

Color: Light yellow

Odour: Characteristic

Odour threshold: N.A.

pH: N.A.

Kinematic viscosity: N.A.

Melting point / freezing point: N.A.

Initial boiling point and boiling range: N.A.

Flash point: 24 °C (75 °F)

Upper/lower flammability or explosive limits: N.A.

Vapour density: N.A.

Vapour pressure: N.A.

Relative density: 1.11 g/cm³

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.

Flammability: The product is classified Flam. Liq. 3 H226

Volatile Organic compounds - VOCs = 30 % ; 285 g/l

Particle characteristics:

Particle size: N.A.

9.2. Other information

Miscibility: N.A.

Conductivity: N.A.

Evaporation rate: N.A. No other relevant information

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions

10.2. Chemical stability

Data not available.

10.3. Possibility of hazardous reactions

None.

10.4. Conditions to avoid

Stable under normal conditions.

10.5. Incompatible materials

Avoid contact with combustible materials. The product could catch fire.

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information

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

Toxicological Information of the Preparation

| | |
|--------------------------------------|--|
| a) acute toxicity | The product is classified: Acute Tox. 4(H332) |
| b) skin corrosion/irritation | Not classified Based on available data, the classification criteria are not met |
| c) serious eye damage/irritation | Not classified Based on available data, the classification criteria are not met |
| d) respiratory or skin sensitisation | The product is classified: Skin Sens. 1(H317) |
| e) germ cell mutagenicity | Not classified Based on available data, the classification criteria are not met |
| f) carcinogenicity | Not classified Based on available data, the classification criteria are not met |
| g) reproductive toxicity | Not classified Based on available data, the classification criteria are not met |
| h) STOT-single exposure | The product is classified: STOT SE 3(H335) |
| i) STOT-repeated exposure | Not classified Based on available data, the classification criteria are not met |
| j) aspiration hazard | Not classified Based on available data, the classification criteria are not met |

Toxicological information on main components of the mixture:

| | | | |
|---------------------------------|--------------------------------------|--|------------------|
| 2-methoxy-1-methylethyl acetate | a) acute toxicity | LD50 Oral Rat = 6190.00000 mg/kg | |
| | | LD50 Skin Rabbit > 5000.00000 mg/kg 24h | |
| | b) skin corrosion/irritation | Skin Irritant Rabbit Negative 4h | |
| | c) serious eye damage/irritation | Eye Irritant Rabbit No | |
| | d) respiratory or skin sensitisation | Skin Sensitization Guinea pig Negative | |
| | g) reproductive toxicity | No Observed Effect Level Rat = 3.69000 mg/l | Inhalation route |
| 4-isocyanatosulphonyltoluene | a) acute toxicity | LD50 Oral Rat = 2330.00000 mg/kg | |
| | | LD50 Skin Rat > 2000.00000 mg/kg 24h | |
| | b) skin corrosion/irritation | Skin Irritant Rabbit Negative 24h | |
| | c) serious eye damage/irritation | Eye Irritant Rabbit No | |
| | d) respiratory or skin sensitisation | Skin Sensitization Negative | Mouse |
| | f) carcinogenicity | Genotoxicity Negative 48h | Mouse oral route |
| | g) reproductive toxicity | No Observed Adverse Effect Level Oral Rat = 52.00000 mg/kg | |

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.

No data available for the product

List of Eco-Toxicological properties of the components

| Component | Ident. Numb. | Ecotox Data |
|---------------------------------|--|---|
| 2-methoxy-1-methylethyl acetate | CAS: 108-65-6 - EINECS: 203- 603-9 | a) Aquatic acute toxicity : LC50 Fish Oncorhynchus mykiss = 130.00000 mg/L 96h OECD guideline 203 |
| | | b) Aquatic chronic toxicity : NOEC Fish Oryzias latipes = 47.50000 mg/L OECD guideline 204 - 14days |
| | | a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 408.00000 mg/L 48h OECD guideline 202 |
| | | b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna > 100.00000 mg/L OECD guideline 211 - 24days |
| | | a) Aquatic acute toxicity : NOEC Algae Selenastrum capricornutum >= 1000.00000 mg/L OECD guideline 201 |
| 4-isocyanatosulphonyltoluene | CAS: 4083-64-1 - EINECS: 223- 810-8 - INDEX: 615-012-00-7 | a) Aquatic acute toxicity : LC50 Fish Oncorhynchus mykiss > 45.00000 mg/L 96h OECD guideline 203 |
| | | a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 100.00000 mg/L 48h OECD guideline 202 |
| | | a) Aquatic acute toxicity : EC50 Algae Pseudokirchnerella subcapitata = 30.00000 mg/L 72h OECD guideline 201 |

12.2. Persistence and degradability

| Component | Persistence/Degradability: | Test | Value | Notes |
|---------------------------------|----------------------------|--------------------------|--------|--------------|
| 2-methoxy-1-methylethyl acetate | Readily biodegradable | Dissolved organic carbon | | OECD GL 301E |
| 4-isocyanatosulphonyltoluene | Readily biodegradable | Oxygen consumption | 83.000 | %; OECD 301D |

12.3. Bioaccumulative potential

N.A.

12.4. Mobility in soil

N.A.

12.5. Results of PBT and vPvB assessment

No PBT/vPvB Ingredients are present

12.6 Endocrine disrupting properties

No endocrine disruptor substances present in concentration >= 0.1%

12.7 Other adverse effects

N.A.

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.

A waste code according to European waste catalogue (EWC) cannot be specified, due to dependence on the usage. Contact an authorized waste disposal service.

Properties of waste which render it hazardous (Annex III, Directive 2008/98/EC):

N.A.

SECTION 14: Transport information**14.1. UN number or ID number**

1263

14.2. UN proper shipping name

ADR-Shipping Name: PAINT RELATED MATERIAL

IATA-Technical name: PAINT RELATED MATERIAL

IMDG-Technical name: PAINT RELATED MATERIAL

14.3. Transport hazard class(es)

ADR-Class: 3

IATA-Class: 3

IMDG-Class: 3

14.4. Packing group

ADR-Packing Group: III

IATA-Packing group: III

IMDG-Packing group: III

14.5. Environmental hazards

Marine pollutant: No

Environmental Pollutant: No

IMDG-EMS: F-E, S-E

14.6. Special precautions for user

Road and Rail (ADR-RID) :

ADR-Label: 3

ADR - Hazard identification number: 30

ADR-Special Provisions: 163 367 650

ADR-Transport category (Tunnel restriction code): 3 (D/E)

ADR Limited Quantities: 5 L

ADR Excepted Quantities: E1

Air (IATA) :

IATA-Passenger Aircraft: 355

IATA-Cargo Aircraft: 366

IATA-Label: 3

IATA-Subsidiary hazards: -

IATA-Erg: 3L

IATA-Special Provisioning: A3 A72 A192

Sea (IMDG) :

IMDG-Stowage Code: Category A

IMDG-Stowage Note: -

IMDG-Subsidiary hazards: -

IMDG-Special Provisioning: 163 223 367 955

14.7. Maritime transport in bulk according to IMO instruments

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) n. 286/2011 (ATP 2 CLP)

Regulation (EU) n. 618/2012 (ATP 3 CLP)

Regulation (EU) n. 487/2013 (ATP 4 CLP)

Regulation (EU) n. 944/2013 (ATP 5 CLP)

Regulation (EU) n. 605/2014 (ATP 6 CLP)

Regulation (EU) n. 2015/1221 (ATP 7 CLP)

Regulation (EU) n. 2016/918 (ATP 8 CLP)

Regulation (EU) n. 2016/1179 (ATP 9 CLP)

Regulation (EU) n. 2017/776 (ATP 10 CLP)

Regulation (EU) n. 2018/669 (ATP 11 CLP)

Regulation (EU) n. 2018/1480 (ATP 13 CLP)

Regulation (EU) n. 2019/521 (ATP 12 CLP)

Regulation (EU) n. 2020/217 (ATP 14 CLP)

Regulation (EU) n. 2020/1182 (ATP 15 CLP)

Regulation (EU) n. 2021/643 (ATP 16 CLP)

Regulation (EU) n. 2020/878

Regulation (EC) nr 648/2004 (Detergents).

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, 40

Restrictions related to the substances contained: 74, 75

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

Seveso III category according to Annex 1, part 1

Product belongs to category: P5c 5000

50000

Regulation (EU) 649/2012 (PIC regulation):

No Substance Listed

German Water Hazard Class.

NWG: Not hazardous for water

SVHC Substances:

No data available

Dir. 2004/42/EC (VOC directive)

(ready to use)

Volatile Organic compounds - VOCs = 25.23 %

Volatile Organic compounds - VOCs = 340.54 g/L

FACTORY COLOR PU-S (B) (not ready to use)

Volatile Organic compounds - VOCs = 30.00 %

Volatile Organic compounds - VOCs = 285.00 g/L

15.2. Chemical safety assessment

A Chemical Safety Assessment has been carried out for the mixture.

SECTION 16: Other information

| Code | Description |
|--------|--|
| EUH014 | Reacts violently with water. |
| H226 | Flammable liquid and vapour. |
| 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. |
| H336 | May cause drowsiness or dizziness. |

| Code | Hazard class and hazard category | Description |
|-------------|----------------------------------|--|
| 2.6/3 | Flam. Liq. 3 | Flammable liquid, Category 3 |
| 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 |
| 3.8/3 | STOT SE 3 | Specific target organ toxicity — single exposure, Category 3 |

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 |
|---|--------------------------|
| 2.6/3 | On basis of test data |
| 3.1/4/Inhal | Calculation method |
| 3.4.2/1 | Calculation method |
| 3.8/3 | 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

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.

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: Keep Away From Heat
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.

Paragraphs modified from the previous revision:

- 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING
- 2. HAZARDS IDENTIFICATION
- 3. COMPOSITION/INFORMATION ON INGREDIENTS
- 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
- 9. PHYSICAL AND CHEMICAL PROPERTIES
- 13. DISPOSAL CONSIDERATIONS
- 15. REGULATORY INFORMATION



Exposure Scenario

2-methoxy-1-methylethyl acetate

Exposure Scenario, 08/06/2021

| Substance identity | |
|---------------------|---------------------------------|
| | 2-methoxy-1-methylethyl acetate |
| CAS No. | 108-65-6 |
| INDEX No. | 607-195-00-7 |
| EINECS No. | 203-603-9 |
| Registration number | 01-2119475791-29 |

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1. ES 1

1. ES 1

1.1 TITLE SECTION

| | |
|------------------------|--|
| Exposure Scenario name | Professional application of coatings and inks by brush or roller |
| Date - Version | 29/04/2021 - 1.0 |
| Main user group | Professional uses |
| Sector(s) of use | Professional uses (SU22) |
| Product Categories | Coatings and paints, thinners, paint removers (PC9a) |

Environment Contributing Scenario

| | |
|-----|---------------|
| CS1 | ERC8a - ERC8d |
|-----|---------------|

Worker Contributing Scenario

| | |
|--|--------|
| CS2 Large surfaces - Rolling, Brushing | PROC10 |
|--|--------|

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario (ERC8a, ERC8d)

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

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers concentrations up to 100 %

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

Amounts used:

Daily amount per site = 5000 kg

Release type: Continuous release

Emission days: 365 days per year

Conditions and measures related to sewage treatment plant

STP type:

Municipal Sewage Treatment Plant

Water - minimum efficiency of: = 87.3 %

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

Waste treatment

Contain and dispose of waste according to local regulations.

Other conditions affecting environmental exposure

Local marine water dilution factor: 100

Local freshwater dilution factor: 10

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

Additional Good Practice Advice:

Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases.

1.2. CS2: Worker Contributing Scenario: Large surfaces - Rolling, Brushing (PROC10)

| | |
|--------------------|---|
| Process Categories | Roller application or brushing (PROC10) |
|--------------------|---|

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers concentrations up to 100 %

Amount used, frequency and duration of use/exposure**Amounts used:**

Daily amount per site = 5000 kg

Duration:

Exposure duration = 8 h/day

Frequency:

Use frequency = 365 days per year

Technical and organisational conditions and measures**Technical and organisational measures**

Ensure control measures are regularly inspected and maintained.

Carry out in a vented booth or extracted enclosure.

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

Wear a respirator conforming to EN140.

Other conditions affecting worker exposure

Covers indoor and outdoor use

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

1.3 Exposure estimation and reference to its source

1.3. CS1: Environment Contributing Scenario (ERC8a, ERC8d)

| protection target | Exposure level | Calculation method | Risk Characterization Ratio (RCR) |
|---------------------|------------------|---------------------------|-----------------------------------|
| freshwater | = 0.003 mg/L | ECETOC TRA environment v3 | = 0.004 |
| freshwater sediment | = 0.014 mg/kg KW | ECETOC TRA environment v3 | = 0.004 |
| marine water | = 0.0004 mg/L | ECETOC TRA environment v3 | = 0.007 |
| marine sediment | = 0.002 mg/kg KW | ECETOC TRA environment v3 | = 0.007 |
| soil | = 0.001 mg/kg KW | ECETOC TRA environment v3 | = 0.004 |

1.3. CS2: Worker Contributing Scenario: Large surfaces - Rolling, Brushing (PROC10)

| Exposure route, Health effect, Exposure indicator | Exposure level | Calculation method | Risk Characterization Ratio (RCR) |
|---|----------------------------|----------------------|-----------------------------------|
| inhalative, systemic, long-term | = 137.71 mg/m ³ | ECETOC TRA worker v3 | = 0.5 |
| dermal, systemic, long-term | = 13.71 mg/kg bw/day | ECETOC TRA worker v3 | 0.18 |

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

Guidance to check compliance with the exposure scenario:

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



Exposure Scenario

Hexamethylene diisocyanate, oligomers

Exposure Scenario, 08/06/2021

| Substance identity | |
|---------------------|---------------------------------------|
| | Hexamethylene diisocyanate, oligomers |
| CAS No. | 28182-81-2 |
| EINECS No. | 500-060-2 |
| Registration number | 01-2119485796-17 |

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1. **ES 1** Widespread use by professional workers; Coatings and paints, thinners, paint removers (PC9a)

| | | | |
|--|---|--|--|
| 1. ES 1 | | Widespread use by professional workers; Coatings and paints, thinners, paint removers (PC9a) | |
| 1.1 TITLE SECTION | | | |
| Exposure Scenario name | Dye - Professional application of coatings and inks by brush or roller - Professional application of coatings and inks | | |
| Date - Version | 08/06/2021 - 1.0 | | |
| Life Cycle Stage | Widespread use by professional workers | | |
| Main user group | Professional uses | | |
| Sector(s) of use | Professional uses (SU22) | | |
| Product Categories | Coatings and paints, thinners, paint removers (PC9a) | | |
| Article Category(ies) | Stone, plaster, cement, glass and ceramic articles: Large surface area articles (AC4a) - Other articles made of stone, plaster, cement, glass or ceramic (AC4g) | | |
| Environment Contributing Scenario | | | |
| CS1 | ERC8c - ERC8f | | |
| Worker Contributing Scenario | | | |
| CS2 Mixing operations - Material transfers | PROC8a | | |
| CS3 Surfaces - Rolling, Brushing | PROC10 | | |
| CS4 Surfaces - Roller, spreader, flow application | PROC11 | | |
| 1.2 Conditions of use affecting exposure | | | |
| 1.2. CS1: Environment Contributing Scenario (ERC8c, ERC8f) | | | |
| Environmental release categories | Widespread use leading to inclusion into/onto article (indoor) - Widespread use leading to inclusion into/onto article (outdoor) (ERC8c, ERC8f) | | |
| <i>Product (article) characteristics</i> | | | |
| Physical form of product: Liquid, vapour pressure < 0,5 kPa at STP | | | |
| Vapour pressure: = 0.00246 Pa | | | |
| <i>Amount used, frequency and duration of use (or from service life)</i> | | | |
| Amounts used: Daily amount per site 50 tonnes/day | | | |
| Release type: Intermittent release | | | |
| <i>Technical and organisational conditions and measures</i> | | | |
| Control measures to prevent releases No discharge of substance into waste water | | | |
| <i>Conditions and measures related to sewage treatment plant</i> | | | |
| STP type: Municipal Sewage Treatment Plant Water - minimum efficiency of: = 100 % STP effluent (m³/day): 2000 | | | |
| <i>Conditions and measures related to treatment of waste (including article waste)</i> | | | |
| Waste treatment External treatment and disposal of waste should comply with applicable local and/or national regulations. | | | |
| <i>Other conditions affecting environmental exposure</i> | | | |
| Receiving surface water flow: 18000 m³/day | | | |

1.2. CS2: Worker Contributing Scenario: Mixing operations - Material transfers (PROC8a)

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

Product (article) characteristics

Physical form of product:

Liquid, vapour pressure < 0,5 kPa at STP

Vapour pressure:

Vapour pressure < 0.01 Pa at standard temperature and pressure = 0.00246 Pa

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures

Ensure operatives are trained to minimise exposures.

Use of an integrated local exhaust ventilation is required.

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

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

Personal protection

Wear suitable gloves tested to EN374.

Wear suitable respiratory protection.

Inhalation - minimum efficiency of: = 90 %

Other conditions affecting worker exposure

Indoor use

Professional use

Room size: = 300 m³

Temperature: Covers use at ambient temperatures. 40°C

1.2. CS3: Worker Contributing Scenario: Surfaces - Rolling, Brushing (PROC10)

| | |
|--------------------|---|
| Process Categories | Roller application or brushing (PROC10) |
|--------------------|---|

Product (article) characteristics

Physical form of product:

Liquid, vapour pressure < 0,5 kPa at STP

Vapour pressure:

Vapour pressure < 0.01 Pa at standard temperature and pressure = 0.00246 Pa

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures

Ensure operatives are trained to minimise exposures.

Use of an integrated local exhaust ventilation is required.

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

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

Personal protection

Wear suitable gloves tested to EN374.
Wear suitable respiratory protection.

Inhalation - minimum efficiency of: = 90 %

Other conditions affecting worker exposure

Indoor use

Professional use

Room size: = 300 m³

Temperature: Covers use at ambient temperatures. 40°C

1.2. CS4: Worker Contributing Scenario: Surfaces - Roller, spreader, flow application (PROC11)

Process Categories

Non industrial spraying (PROC11)

Product (article) characteristics

Physical form of product:

Liquid, vapour pressure < 0,5 kPa at STP

Vapour pressure:

Vapour pressure < 0.01 Pa at standard temperature and pressure = 0.00246 Pa

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures

Ensure operatives are trained to minimise exposures.

Use of an integrated local exhaust ventilation is required.

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

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

Personal protection

Wear suitable gloves tested to EN374.
Wear suitable respiratory protection.
Wear a full face respirator conforming to EN136.

Inhalation - minimum efficiency of: = 98 %

Other conditions affecting worker exposure

Covers indoor and outdoor use

Professional use

Room size: < 300 m³

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

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

Additional Good Practice Advice:

Ensure that direction of application is only horizontal or downward.

1.3 Exposure estimation and reference to its source

1.3. CS2: Worker Contributing Scenario: Mixing operations - Material transfers (PROC8a)

| Exposure route, Health effect, Exposure indicator | Exposure level | Calculation method | Risk Characterization Ratio (RCR) |
|---|--------------------------|----------------------|-----------------------------------|
| inhalative, local, short-term | = 0.07 mg/m ³ | ECETOC TRA worker v3 | = 0.07 |

1.3. CS3: Worker Contributing Scenario: Surfaces - Rolling, Brushing (PROC10)

| Exposure route, Health effect, Exposure indicator | Exposure level | Calculation method | Risk Characterization Ratio (RCR) |
|---|--------------------------|----------------------|-----------------------------------|
| inhalative, local, short-term | = 0.18 mg/m ³ | ECETOC TRA worker v3 | = 0.18 |

1.3. CS4: Worker Contributing Scenario: Surfaces - Roller, spreader, flow application (PROC11)

| Exposure route, Health effect, Exposure indicator | Exposure level | Calculation method | Risk Characterization Ratio (RCR) |
|---|-------------------------|----------------------|-----------------------------------|
| inhalative, local, short-term | = 0.4 mg/m ³ | ECETOC TRA worker v3 | = 0.4 |

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

Guidance to check compliance with the exposure scenario:

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