

Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH)
according to Regulation (EU) 2020/878



Article No.: 40-3-9010
Print date: 09.02.2026
Version: 1.2

Markier-Spray R40
Revision date: 19.12.2025
Issue date: 19.12.2025

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

1.1. Product identifier

Article No. (manufacturer/supplier): 40-3-9010
Trade name/designation: Markier-Spray R40
weiß RAL 9010
seidenglänzend
UFI: SY3P-0JRV-6G0Q-U87P

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

1.3. Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor)

P.A. Jansen GmbH u. Co., KG
Hochstadenstraße 22
D-53474 Bad Neuenahr-Ahrweiler
Telephone: +49 2641 3897-0
Homepage: www.jansen.de

Department responsible for information:

laboratory
E-mail (competent person): sicherheitsdatenblatt@jansen.de

1.4. Emergency telephone number

Emergency telephone number: +49 2641 3897-51
Only available during office hours.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP]

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

Aerosol 1 / H222	Aerosol	Extremely flammable aerosol.
Aerosol 1 / H229	Aerosol	Pressurised container: May burst if heated.
Acute Tox. 1 / H300	Acute toxicity (oral)	Fatal if swallowed.
STOT SE 3 / H336	STOT-single exposure	May cause drowsiness or dizziness.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms



Danger

Hazard statements

H222 Extremely flammable aerosol.
H229 Pressurised container: May burst if heated.
H336 May cause drowsiness or dizziness.

Precautionary statements

P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211 Do not spray on an open flame or other ignition source.
P251 Do not pierce or burn, even after use.
P271 Use only outdoors or in a well-ventilated area.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard components for labelling

Ethyl acetate

Supplemental hazard information

EUH066 Repeated exposure may cause skin dryness or cracking.
EUH208 Contains Fatty acids, C-18, unsatd. trimers, compd. with 9-octadecen-1-amine, (Z)-; Fatty acids, tall-oil, compds. with oleylamine. May produce an allergic reaction.

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EUH018 In use may form flammable/explosive vapour-air mixture.

2.3. Other hazards

Do not use in confined spaces. Only use the product for the intended purpose.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Description Mixture with the substances listed below with additions

Classification according to Regulation (EC) No 1272/2008 [CLP]

EC No. CAS No. Index No.	REACH No. Designation classification: // Remark	weight-%
203-448-7 106-97-8 601-004-00-0	01-2119474691-32 butane Flam. Gas 1 H220 / Compressed gas H280 / EUH018	20 - 25
200-827-9 74-98-6 601-003-00-5	01-2119486944-21 propane Flam. Gas 1 H220 / Compressed gas H280 / EUH018	15 - 20
205-500-4 141-78-6 607-022-00-5	01-2119475103-46 Ethyl acetate Flam. Liq. 2 H225 / Eye Irrit. 2 H319 / STOT SE 3 H336 / EUH066	8 - 10
919-857-5	01-2119463258-33 Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2 % aromatics Flam. Liq. 3 H226 / Asp. Tox. 1 H304 / STOT SE 3 H336 / EUH066	8 - 10
927-241-2	01-2119471843-32 hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2 % aromatics STOT SE 3 H336 / Asp. Tox. 1 H304 / Aquatic Chronic 3 H412 / Flam. Liq. 3 H226 / EUH066	8 - 10
200-857-2 75-28-5 601-004-01-8	01-2119485395-27 Isobutane Flam. Gas 1 H220 / Compressed gas H280	3 - 5
203-603-9 108-65-6 607-195-00-7	01-2119475791-29 2-methoxy-1-methylethyl acetate Flam. Liq. 3 H226	2,5 - 3
604-612-4 147900-93-4	01-2119971821-33 Fatty acids, C-18, unsatd. trimers, compd. with 9-octadecen-1-amine, (Z)- Acute Tox. 4 H302 / Skin Sens. 1 H317 / STOT RE 2 H373 / Aquatic Chronic 2 H411 Acute toxicity estimate (ATE): ATE (oral): 1570 mg/kg bw	0,1 - 0,15
288-315-1 85711-55-3	01-2119974148-28-0000 Fatty acids, tall-oil, compds. with oleylamine Eye Dam. 1 H318 / Skin Sens. 1A H317 / STOT RE 2 H373	0,05 - 0,1

Additional information

Full text of classification: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness give nothing by mouth, place in recovery position and seek medical advice.

In case of inhalation

Remove casualty to fresh air and keep warm and at rest. In case of irregular breathing or respiratory arrest provide artificial respiration.

Following skin contact

Take off immediately all contaminated clothing. After contact with skin, wash immediately with plenty of water and soap. Do not use solvents or thinners.

After eye contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek

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medical advice immediately.

Following ingestion

If swallowed, rinse mouth with water (only if the person is conscious). Seek medical advice immediately. Keep victim calm. Do NOT induce vomiting.

4.2. **Most important symptoms and effects, both acute and delayed**

In all cases of doubt, or when symptoms persist, seek medical advice.

4.3. **Indication of any immediate medical attention and special treatment needed**

First Aid, decontamination, treatment of symptoms.

SECTION 5: Firefighting measures

5.1. **Extinguishing media**

Suitable extinguishing media

alcohol resistant foam, carbon dioxide, Powder, spray mist, (water)

Unsuitable extinguishing media

strong water jet

5.2. **Special hazards arising from the substance or mixture**

Dense black smoke occurs during fire. Inhaling hazardous decomposing products can cause serious health damage.

5.3. **Advice for firefighters**

Provide a conveniently located respiratory protective device. Do not allow water used to extinguish fire to enter drains, ground or waterways. Cool closed containers that are near the source of the fire.

SECTION 6: Accidental release measures

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

Keep away from sources of ignition. Ventilate affected area. Do not breathe vapours.

6.2. **Environmental precautions**

Do not allow to enter into surface water or drains. If the product contaminates lakes, rivers or sewages, inform competent authorities in accordance with local regulations.

6.3. **Methods and material for containment and cleaning up**

Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see section 13). Clean using cleansing agents. Do not use solvents.

6.4. **Reference to other sections**

Observe protective provisions (see section 7 and 8).

SECTION 7: Handling and storage

7.1. **Precautions for safe handling**

Advices on safe handling

Protect from heat and direct sunlight. Ensure good ventilation / exhaust at the workplace. Observe the exposure limits. Use only in well-ventilated areas. Ensure good interior ventilation, especially at floor level (vapors are heavier than air).

Further information

Do not spray on a naked flame or any incandescent material. Keep away from sources of ignition - No smoking. Container under pressure. Protect from direct exposure to sunlight and temperatures exceeding 50 °C. Do not open with force, even when empty.

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

Requirements for storage rooms and vessels

Storage in accordance with the Ordinance on Industrial Safety and Health (BetrSiVO). Keep container tightly closed. Do not empty containers with pressure - no pressure vessel! Smoking is forbidden. Access only for authorised persons. Store carefully closed containers upright to prevent any leaks. Soils have to conform to the "Guidelines for avoidance of ignition hazards due to electrostatic charges (TRGS 727)".

Hints on joint storage

Keep away from strongly acidic and alkaline materials as well as oxidizers.

Further information on storage conditions

Protect from heat and direct sunlight. Take care of instructions on label.

7.3. **Specific end use(s)**

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Observe technical data sheet. Observe instructions for use.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limit values

butane

Index No. 601-004-00-0 / EC No. 203-448-7 / CAS No. 106-97-8

WEL, TWA: 1450 mg/m³; 600 ppm

WEL, STEL: 1810 mg/m³; 750 ppm

Ethyl acetate

Index No. 607-022-00-5 / EC No. 205-500-4 / CAS No. 141-78-6

WEL, TWA: 734 mg/m³; 200 ppm

WEL, STEL: 1468 mg/m³; 400 ppm

2-methoxy-1-methylethyl acetate

Index No. 607-195-00-7 / EC No. 203-603-9 / CAS No. 108-65-6

WEL, TWA: 274 mg/m³; 50 ppm

WEL, STEL: 548 mg/m³; 100 ppm

Remark: (may be absorbed through the skin)

Additional information

TWA : Long-term occupational exposure limit value

STEL : short-term occupational exposure limit value

Ceiling : peak limitation

DNEL:

Ethyl acetate

Index No. 607-022-00-5 / EC No. 205-500-4 / CAS No. 141-78-6

DNEL long-term dermal (systemic), Workers: 63 mg/kg

DNEL acute inhalative (local), Workers: 1468 mg/m³

DNEL acute inhalative (systemic), Workers: 1468 mg/m³

DNEL long-term inhalative (local), Workers: 734 mg/m³

DNEL long-term inhalative (systemic), Workers: 734 mg/m³

DNEL long-term oral (repeated), Consumer: 4,5 mg/kg

DNEL long-term dermal (systemic), Consumer: 37 mg/kg

DNEL acute inhalative (local), Consumer: 734 mg/m³

DNEL acute inhalative (systemic), Consumer: 734 mg/m³

DNEL long-term inhalative (local), Consumer: 367 mg/m³

DNEL long-term inhalative (systemic), Consumer: 367 mg/m³

Fatty acids, C-18, unsatd. trimers, compd. with 9-octadecen-1-amine, (Z)-

EC No. 604-612-4 / CAS No. 147900-93-4

DNEL long-term dermal (systemic), Workers: 0,024 mg/kg

DNEL long-term oral (repeated), Consumer: 0,012 mg/kg

DNEL long-term dermal (systemic), Consumer: 0,012 mg/kg

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2 % aromatics

EC No. 919-857-5

DNEL long-term dermal (systemic), Workers: 300 mg/kg

DNEL long-term inhalative (systemic), Workers: 1500 mg/m³

DNEL long-term oral (repeated), Consumer: 300 mg/kg

DNEL long-term dermal (systemic), Consumer: 300 mg/kg

DNEL long-term inhalative (systemic), Consumer: 900 mg/m³

hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2 % aromatics

EC No. 927-241-2

DNEL long-term dermal (systemic), Workers: 300 mg/kg

DNEL long-term inhalative (systemic), Workers: 1500 mg/m³

DNEL long-term oral (repeated), Consumer: 300 mg/kg

DNEL long-term dermal (systemic), Consumer: 300 mg/kg

DNEL long-term inhalative (systemic), Consumer: 900 mg/m³

titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]

Index No. 022-006-00-2 / EC No. 236-675-5 / CAS No. 13463-67-7

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DNEL long-term inhalative (local), Workers: 10 mg/m³
DNEL long-term oral (repeated), Consumer: 700 mg/kg

2-methoxy-1-methylethyl acetate

Index No. 607-195-00-7 / EC No. 203-603-9 / CAS No. 108-65-6

DNEL acute dermal, short-term (systemic), Workers: 153,5 mg/kg

DNEL long-term dermal (systemic), Workers: 796 mg/kg

DNEL acute inhalative (local), Workers: 550 mg/m³

DNEL long-term inhalative (systemic), Workers: 275 mg/m³

DNEL long-term oral (repeated), Consumer: 36 mg/kg

DNEL long-term dermal (systemic), Consumer: 320 mg/kg

DNEL acute inhalative (systemic), Consumer: 33 mg/m³

DNEL long-term inhalative (systemic), Consumer: 33 mg/m³

PNEC:

Ethyl acetate

Index No. 607-022-00-5 / EC No. 205-500-4 / CAS No. 141-78-6

PNEC aquatic, freshwater: 0,24 mg/L

PNEC aquatic, marine water: 0,024 mg/L

PNEC aquatic, intermittent release: 1,65 mg/L

PNEC sediment, freshwater: 1,15 mg/kg

PNEC sediment, marine water: 0,115 mg/kg

PNEC, soil: 0,148 mg/kg

PNEC sewage treatment plant (STP): 650 mg/L

PNEC Secondary Poisoning: 200 mg/kg

Fatty acids, C-18, unsatd. trimers, compd. with 9-octadecen-1-amine, (Z)-

EC No. 604-612-4 / CAS No. 147900-93-4

PNEC aquatic, freshwater: 0,006 mg/L

PNEC aquatic, marine water: 0,0006 mg/L

PNEC sediment, freshwater: 2,46 mg/kg

PNEC sediment, marine water: 0,25 mg/kg

PNEC, soil: 0,28 mg/kg

PNEC Secondary Poisoning: 0,47 mg/kg

titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]

Index No. 022-006-00-2 / EC No. 236-675-5 / CAS No. 13463-67-7

PNEC aquatic, freshwater: 0,184 mg/L

PNEC aquatic, marine water: 0,0184 mg/L

PNEC aquatic, intermittent release: 0,193 mg/L

PNEC sediment, freshwater: 1000 mg/kg

PNEC sediment, marine water: 100 mg/kg

PNEC, soil: 100 mg/kg

PNEC sewage treatment plant (STP): 100 mg/L

2-methoxy-1-methylethyl acetate

Index No. 607-195-00-7 / EC No. 203-603-9 / CAS No. 108-65-6

PNEC aquatic, freshwater: 0,635 mg/L

PNEC aquatic, marine water: 0,0635 mg/L

PNEC aquatic, intermittent release: 6,35 mg/L

PNEC sediment, freshwater: 3,29 mg/kg

PNEC sediment, marine water: 0,329 mg/kg

PNEC, soil: 0,29 mg/kg

PNEC sewage treatment plant (STP): 100 mg/L

8.2. Exposure controls

Provide good ventilation. This can be achieved with local or room suction. If this should not be sufficient to keep aerosol and solvent vapour concentration below the exposure limit values, a suitable respiratory protection must be used.

Personal protection equipment

Respiratory protection

If concentration of solvents is beyond the occupational exposure limit values, approved and suitable respiratory protection must be used. Observe the wear-time limits as specified by the manufacturer. Recommended respiratory protection articles: Inadequately ventilated workplaces and spraying procedures are necessary. Fresh air mask or short-time work combination filter A2-P2 are recommended.

Hand protection

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For prolonged or repeated handling the following glove material must be used: NBR (Nitrile rubber)

Thickness of the glove material > 0,4 mm ; Breakthrough time: > 480 min.

Observe the instructions and details for use, storage, maintenance and replacement provided by the protective glove manufacturer. Penetration time of glove material depending on intensity and duration of exposure to skin. Recommended glove articles EN ISO 374

Barrier creams can help protecting exposed skin areas. In no case should they be used after contact.

Eye/face protection

Wear closely fitting protective glasses in case of splashes.

Body protection

Wear antistatic clothing of natural fibers (cotton) or heat resistant synthetic fibers.

Protective measures

After contact clean skin thoroughly with water and soap or use appropriate cleanser.

Environmental exposure controls

Do not allow to enter into surface water or drains. See section 7. No additional measures necessary.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

*

Physical state:	Liquid
Colour:	white
Odour:	characteristic
Odour threshold:	No data available
Melting point/freezing point:	-84 °C Source: Ethyl acetate
Initial boiling point and boiling range:	-42 °C Source: propane
Flammability:	Extremely flammable aerosol.
Lower and upper explosion limit:	
Lower explosion limit:	0,6 Vol-% Method: literature value Source: Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2 % aromatics
Upper explosion limit:	11,5 Vol-% Method: literature value Source: Ethyl acetate
Flash point:	< 1 °C Method: EN ISO 1523
Ignition temperature in °C:	237 °C Source: Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2 % aromatics
Decomposition temperature:	No data available
pH at 20 °C:	No data available
Viscosity at °C:	Aerosol
Solubility(ies):	
Water solubility at 20 °C:	insoluble
Partition coefficient: n-octanol/water:	see section 12
Vapour pressure at 20 °C:	8327 mbar Source: propane
Density and/or relative density:	
Density at 20 °C:	No data available
Relative vapour density:	No data available
particle characteristics:	not applicable

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9.2. **Other information**

SECTION 10: Stability and reactivity

10.1. **Reactivity**

No information available.

10.2. **Chemical stability**

Stable when applying the recommended regulations for storage and handling. Further information on correct storage: refer to section 7.

10.3. **Possibility of hazardous reactions**

Keep away from strong acids, strong bases and strong oxidizing agents to avoid exothermic reactions.

10.4. **Conditions to avoid**

Hazardous decomposition byproducts may form with exposure to high temperatures.

10.5. **Incompatible materials**

not applicable

10.6. **Hazardous decomposition products**

Hazardous decomposition byproducts may form with exposure to high temperatures, e.g.: carbon dioxide, carbon monoxide, smoke, nitrogen oxides.

SECTION 11: Toxicological information

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

Acute toxicity

Fatal if swallowed.

Ethyl acetate

dermal, LD50, Rabbit: > 2000 mg/kg

inhalative (vapours), LC50, Rat: 29,3 mg/L (4 h)

inhalative (vapours), LC50, Rat: 22,5 mg/L (6 h)

oral, LD50, Rabbit: 4934 mg/kg

Method: OECD 401

Fatty acids, C-18, unsatd. trimers, compd. with 9-octadecen-1-amine, (Z)-

oral, LD50, Rat: > 1570 mg/kg

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2 % aromatics

oral, LD50, Rat: > 5000 mg/kg

Method: OECD 401

dermal, LD50, Rabbit: > 5000 mg/kg

Method: OECD 402

inhalative (vapours), LC50, Rat: > 18,5 mg/L (4 h)

hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2 % aromatics

oral, LD50, Rat: > 5000 mg/kg

dermal, LD50, Rabbit: > 5000 mg/kg

inhalative (vapours), LC50, Rat: > 4951 mg/L (4 h)

titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter $\leq 10 \mu\text{m}$]

oral, LD50, Rat: > 5000 mg/kg

Method: OECD 425

dermal, LD50, Rabbit: > 2000 mg/kg

inhalative (dust and mist), LC50, Rat: 3,43 - 5,09 mg/L (4 h)

Method: OECD 403

2-methoxy-1-methylethyl acetate

oral, LD50, Rat: > 5000 mg/kg

dermal, LD50, Rabbit: > 5000 mg/kg

inhalative (vapours), LC50, Rat: 35,7 mg/L (4 h)

Skin corrosion/irritation; Serious eye damage/eye irritation

Ethyl acetate

eyes

irritant.

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2 % aromatics

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Skin (4 h)
mild irritant.
eyes
mild irritant.

Respiratory or skin sensitisation

Fatty acids, C-18, unsatd. trimers, compd. with 9-octadecen-1-amine, (Z)-
Skin, Mouse:
Method: OECD 429
May cause sensitization by skin contact.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Based on available data, the classification criteria are not met.

STOT-single exposure; STOT-repeated exposure

May cause drowsiness or dizziness.

Ethyl acetate

Specific target organ toxicity (single exposure), drowsiness

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2 % aromatics

Specific target organ toxicity (single exposure), drowsiness

Narcotic effects

2-methoxy-1-methylethyl acetate

Specific target organ toxicity (single exposure), drowsiness

Aspiration hazard

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2 % aromatics
Aspiration hazard

Practical experience/human evidence

Inhaling of solvent components above the MWC-value can lead to health damage, e.g. irritation of the mucous membrane and respiratory organs, as well as damage to the liver, kidneys and the central nerve system. Indications for this are: headache, dizziness, fatigue, amyosthenia, drowsiness, in serious cases: unconsciousness. Solvents may cause some of the aforementioned effects through skin resorption. Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in non-allergic contact dermatitis and/or absorption through skin. Splashing may cause eye irritation and reversible damage.

Overall assessment on CMR properties

The ingredients in this mixture do not meet the criteria for classification as CMR category 1A or 1B according to CLP.

11.2. Information on other hazards

Endocrine disrupting properties

No information available.

SECTION 12: Ecological information

Classification according to Regulation (EC) No 1272/2008 [CLP]

There is no information available on the preparation itself .

Do not allow to enter into surface water or drains.

12.1. Toxicity

Ethyl acetate

Fish toxicity, LC50, Pimephales promelas (fathead minnow): 230 mg/L (96 h)

Daphnia toxicity, EC50, Daphnia magna: 610 mg/L (48 h)

Bacteria toxicity, EC10, Pseudomonas putida: 2900 mg/L (16 h)

Algae toxicity, EC50, Desmodesmus subspicatus: 5600 mg/L (72 h)

Fatty acids, C-18, unsatd. trimers, compd. with 9-octadecen-1-amine, (Z)-

Fish toxicity, LC50, Oncorhynchus mykiss (Rainbow trout): > 100 mg/L (96 h)

Method: OECD 203

Daphnia toxicity, EC50, Daphnia magna (Big water flea): > 100 mg/L (48 h)

Method: OECD 202

Algae toxicity, ErC50, Pseudokirchneriella subcapitata: 7,89 mg/L (72 h)

Method: OECD 201

Bacteria toxicity, EC50, Activated sludge: > 1000 mg/L (3 h)

Method: OECD 209

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Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2 % aromatics
Fish toxicity, LC50, Oncorhynchus mykiss (Rainbow trout): > 1000 mg/L (96 h)
Method: OECD 203
Daphnia toxicity, EC50, Daphnia magna: > 1000 mg/L (48 h)
Method: OECD 202
Algae toxicity, EC50, Pseudokirchneriella subcapitata: > 1000 mg/L (72 h)
Method: OECD 201

hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2 % aromatics
Fish toxicity, NOELR, Oncorhynchus mykiss (Rainbow trout) 10 - 30 mg/L (96 h)
Daphnia toxicity, NOELR, Daphnia magna (Big water flea) 22 - 46 mg/L (48 h)
Algae toxicity, NOELR, Pseudokirchneriella subcapitata: > 1000 mg/L (72 h)

titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]
Fish toxicity, LC50, Oncorhynchus mykiss (Rainbow trout): > 100 mg/L (96 h)
Daphnia toxicity, LC50, Daphnia magna: > 100 mg/L (48 h)
Algae toxicity, EC50, Pseudokirchneriella subcapitata: 16 mg/L (72 h)

2-methoxy-1-methylethyl acetate
Fish toxicity, LC50, Oncorhynchus mykiss (Rainbow trout): > 100 mg/L (96 h)
Method: OECD 201
Daphnia toxicity, EC50, Daphnia magna: 408 mg/L (48 h)
Algae toxicity, ErC50, Pseudokirchneriella subcapitata: > 1000 mg/L (72 h)
Bacteria toxicity, EC20:, Activated sludge: > 1000 mg/L (1 h)
Method: OECD 209

Long-term Ecotoxicity

Ethyl acetate
Fish toxicity, NOEC, Pimephales promelas (fathead minnow): > 9,65 mg/L (32 d)
Daphnia toxicity, NOEC, Daphnia magna (Big water flea): 2,4 mg/L (21 d)
Method: OECD 211
Algae toxicity, NOEC, Desmodesmus subspicatus: > 100 mg/L (72 h)
Method: OECD 201
Bacteria toxicity, NOEC, Pseudomonas putida: 650 mg/L (16 h)

Fatty acids, C-18, unsatd. trimers, compd. with 9-octadecen-1-amine, (Z)-
Daphnia toxicity, NOELR, Daphnia magna (Big water flea): > 100 mg/L (21 d)
Method: OECD 211

2-methoxy-1-methylethyl acetate
Fish toxicity, NOEC, Oryzias latipes: 47,5 mg/L (14 d)
Daphnia toxicity, NOEC: > 100 mg/L (21 d)
Method: OECD 211
Algae toxicity, NOEC, Pseudokirchneriella subcapitata: 1000 mg/L (72 h)

12.2. Persistence and degradability

Ethyl acetate
Biodegradation: > 70 % (20 d); Evaluation Readily biodegradable (according to OECD criteria)
Method: OECD 301D / EEC 92/69 annex V, C.4-E

Fatty acids, C-18, unsatd. trimers, compd. with 9-octadecen-1-amine, (Z)-
Biodegradation: Evaluation Not readily biodegradable (according to OECD criteria)
Method: OECD 301F

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2 % aromatics
Biodegradation: 80 % (28 d); Evaluation Readily biodegradable (according to OECD criteria)

hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2 % aromatics
Biodegradation, Degree of elimination:: 89 % (28 d); Evaluation Readily biodegradable (according to OECD criteria)

2-methoxy-1-methylethyl acetate
Biodegradation: 83 % (28 d); Evaluation Readily biodegradable (according to OECD criteria)
Method: OECD 301F

12.3. Bioaccumulative potential

Ethyl acetate
Partition coefficient: n-octanol/water: 0,68

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2 % aromatics
Partition coefficient n-octanol /water (log P O/W):: 5 - 6,7

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2-methoxy-1-methylethyl acetate
Partition coefficient n-octanol /water (log P O/W):: 1,2
Method: OECD 117

Bioconcentration factor (BCF)

Ethyl acetate

Bioconcentration factor (BCF): 30

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2 % aromatics

Bioconcentration factor (BCF): 10 - 2500

titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]

Bioconcentration factor (BCF), Oncorhynchus mykiss (Rainbow trout): 19 - 352

12.4. Mobility in soil

Toxicological data are not available.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Endocrine disrupting properties

No information available.

12.7. Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Appropriate disposal / Product

Recommendation

Do not allow to enter into surface water or drains. This material and its container must be disposed of in a safe way. Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste. Dispose of waste according to applicable legislation.

List of proposed waste codes/waste designations in accordance with EWC

150110* packaging containing residues of or contaminated by dangerous substances

*Hazardous waste according to Directive 2008/98/EC (waste framework directive).

Appropriate disposal / Package

Recommendation

Non-contaminated packages may be recycled. Vessels not properly emptied are special waste.

SECTION 14: Transport information

14.1. UN number or ID number

UN 1950

14.2. UN proper shipping name

Land transport (ADR/RID):

Aerosols, flammable

Sea transport (IMDG):

AEROSOLS

Air transport (ICAO-TI / IATA-DGR):

Aerosols, flammable

14.3. Transport hazard class(es)

2.1

14.4. Packing group

No data available

14.5. Environmental hazards

Land transport (ADR/RID)

No data available

Marine pollutant

No data available

14.6. Special precautions for user

Transport always in closed, upright and safe containers. Make sure that persons transporting the product know what to do in case of an accident or leakage.

Advices on safe handling: see parts 6 - 8

Further information

Land transport (ADR/RID)

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Tunnel restriction code D

Sea transport (IMDG)

EmS-No. F-D, S-U

14.7. Maritime transport in bulk according to IMO instruments

No transport as bulk according IBC - Code.

SECTION 15: Regulatory information

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

EU legislation

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances [Seveso-III-Directive]

Category: P3a FLAMMABLE AEROSOLS

Quantity 1: 150 t / Quantity 2: 500 t

National regulations

Restrictions of occupation

Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).

15.2. Chemical Safety Assessment

For the following substances of this mixture a chemical safety assessment has been carried out:

EC No. CAS No.	Designation	REACH No.
203-448-7 106-97-8	butane	01-2119474691-32
200-827-9 74-98-6	propane	01-2119486944-21
205-500-4 141-78-6	Ethyl acetate	01-2119475103-46
919-857-5	Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2 % aromatics	01-2119463258-33
927-241-2	hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2 % aromatics	01-2119471843-32
200-857-2 75-28-5	Isobutane	01-2119485395-27
203-603-9 108-65-6	2-methoxy-1-methylethyl acetate	01-2119475791-29
604-612-4 147900-93-4	Fatty acids, C-18, unsatd. trimers, compd. with 9-octadecen-1-amine, (Z)-	01-2119971821-33
288-315-1 85711-55-3	Fatty acids, tall-oil, compds. with oleylamine	01-2119974148-28-0000

SECTION 16: Other information

Full text of classification in section 3:

Flam. Gas 1 / H220
Compressed gas / H280

flammable gases
Gases under pressure

Extremely flammable gas.
Contains gas under pressure; may explode if heated.

Flam. Liq. 2 / H225
Eye Irrit. 2 / H319
STOT SE 3 / H336
Flam. Liq. 3 / H226
Asp. Tox. 1 / H304
Aquatic Chronic 3 / H412
Acute Tox. 4 / H302
Skin Sens. 1 / H317
STOT RE 2 / H373

Flammable liquids
Serious eye damage/eye irritation
STOT-single exposure
Flammable liquids
Aspiration hazard
Hazardous to the aquatic environment
Acute toxicity (oral)
Respiratory or skin sensitisation
STOT-repeated exposure

Highly flammable liquid and vapour.
Causes serious eye irritation.
May cause drowsiness or dizziness.
Flammable liquid and vapour.
May be fatal if swallowed and enters airways.
Harmful to aquatic life with long lasting effects.
Harmful if swallowed.
May cause an allergic skin reaction.
May cause damage to organs (or state all organs affected, if known) through prolonged or repeated exposure (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).
Toxic to aquatic life with long lasting effects.

Aquatic Chronic 2 / H411

Hazardous to the aquatic environment

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Eye Dam. 1 / H318	Serious eye damage/eye irritation	Causes serious eye damage.
Skin Sens. 1A / H317	Respiratory or skin sensitisation	May cause an allergic skin reaction.

Classification procedure

Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Aerosol 1	Aerosol	On basis of test data.
Aerosol 1	Aerosol	On basis of test data.
Acute Tox. 1	Acute toxicity (oral)	Calculation method.
STOT SE 3	STOT-single exposure	Calculation method.

Abbreviations and acronyms

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
OEL	Occupational Exposure Limit Value
BLV	Biological Limit Value
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging
CMR	Carcinogenic, Mutagenic and Reprotoxic
DIN	German Institute for Standardization / German industrial standard
DNEL	Derived No-Effect Level
EAKV	European Waste Catalogue Directive
EC	Effective Concentration
EC	European Community
EN	European Standard
IATA-DGR	International Air Transport Association – Dangerous Goods Regulations
IBC Code	International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
ICAO-TI	International Civil Aviation Organization Technical Instructions for the Safe Transport of Dangerous Goods by Air
IMDG Code	International Maritime Code for Dangerous Goods
ISO	International Organization for Standardization
LC	Lethal Concentration
LD	Lethal Dose
MAK	Maximum workplace concentration
MARPOL	Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
OECD	Organisation for Economic Cooperation and Development
PBT	persistent, bioaccumulative, toxic
PNEC	Predicted No Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
UN	United Nations
VOC	Volatile Organic Compounds
vPvB	very persistent and very bioaccumulative

Data sources

Data arise from reference works and literature.

Further information

Classification according to Regulation (EC) No 1272/2008 [CLP]

The information supplied on this safety data sheet complies with our current level of knowledge as well as with national and EU regulations. Without written approval, the product must not be used for purposes different from those mentioned in section 1. It is always the user's duty to take any necessary measures for meeting the requirements laid down by local rules and regulations. The details in this safety data sheet describe the safety requirements of our product and are not to be regarded as guaranteed attributes of the product.

* Data changed compared with the previous version