

## Section 1. Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

**Product name** PERMACRON MIXING COLOUR SERIES 293  
MB 549  
SPARKLE SILVER

**Product code** 4025331015499

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

#### Identified uses

based on use descriptor system given by guideline of the European Chemical Agency

Sector of use SU 3, SU 22

Product category PC9a, PC9b

Further information see chapter Exposure scenario

The product is only for industrial and/or professional use, not for any private consumer use.

### 1.3. Details of the supplier of the safety data sheet

#### Company/Undertaking Identification

Producer/Supplier SPIES HECKER GMBH  
Street/Box Postfach 40 02 07  
Nat.-Code/Postal code/City DE 50832 Köln  
Telephone +49 (0)2234/60 19-06

#### Information on SDS

Responsible Department Regulatory Affairs  
Telephone +49 (0)202 529-2385  
Telefax +49 (0)202 529-2804  
E-mail address sds-service@deu.spieshecker.com

### 1.4. Emergency telephone

Emergency telephone number of manufacturer +44 (0)845 600-6640

**For further information, please also consult our Internet site**

<http://www.spieshecker.com>

## Section 2. Hazards identification

The mixture is classified as dangerous in accordance with Directive 1999/45/EC.

### 2.1. Classification of the substance or mixture

#### Classification of the mixture

According to European Directive 1999/45/EC as amended.

Classification : Irritant; dangerous for the environment; Flammable;

[R10] Flammable. [R41] Risk of serious damage to eyes. [R66] Repeated exposure may cause skin dryness or cracking. [R67] Vapours may cause drowsiness and dizziness. [R52/53] Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

### 2.2. Label elements

#### Symbol and indication of hazard.



Xi Irritant

#### R-phrases

R10 | Flammable.

|        |   |
|--------|---|
| R41    | Risk of serious damage to eyes.   |
| R52/53 | Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |
| R66    | Repeated exposure may cause skin dryness or cracking.   |
| R67    | Vapours may cause drowsiness and dizziness.   |

### S-phrases(s)

|     |   |
|-----|---|
| S23 | Do not breathe vapour/spray.  |
| S26 | In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. |
| S39 | Wear eye/face protection.   |
| S38 | In case of insufficient ventilation, wear suitable respiratory equipment.                     |

### 2.3. Other hazards

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

## Section 3. Composition/information on ingredients

### 3.1. Substances

This product is a mixture. Health hazard information is based on its components.

### 3.2. Mixtures

#### Chemical characterization

Mixture of synthetic resins, pigments, and solvents

#### Hazardous components

Substances presenting a health or environmental hazard within the meaning of the DSD 67/548/EEC and/or (EC) 1272/ 2008 title II and annex VI as amended by (EC) 790/2009

|                |   |                   |
|----------------|---|-------------------|
| CAS 123-86-4   | n-butyl acetate   |                   |
| EC 204-658-1   | REACH 01-2119485493-29  | 35.00 - < 45.00 % |
| Classification | R10; R66; R67<br>EUH066; Flam. Liq. 3, H226; STOT SE 3, H336;   |                   |
| CAS 71-36-3    | n-butanol   |                   |
| EC 200-751-6   | REACH 01-2119484630-38  | 7.00 - < 10.00 %  |
| Classification | R10; Xi: R37/38; Xn: R22; R67; Xi: R41<br>[VI*] Flam. Liq. 3, H226; Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Dam. 1, H318;<br>STOT SE 3, H335; STOT SE 3, H336; |                   |
| CAS 1569-02-4  | 1-ethoxypropan-2-ol   |                   |
| EC 216-374-5   | REACH 01-2119462792-32  | 7.00 - < 10.00 %  |
| Classification | R10; R67<br>[VI*] Flam. Liq. 3, H226; STOT SE 3, H336;  |                   |
| CAS 5131-66-8  | 3-butoxypropan-2-ol   |                   |
| EC 225-878-4   | REACH 01-2119475527-28  | 3.00 - < 5.00 %   |
| Classification | Xi: R36/38<br>[VI*] Skin Irrit. 2, H315; Eye Irrit. 2, H319;  |                   |
| CAS 1330-20-7  | xylene  |                   |
| EC 215-535-7   | REACH 01-2119486136-34  | 3.00 - < 5.00 %   |
| Classification | R10; Xn: R20/21; Xi: R38; NotaC<br>[VI*] Flam. Liq. 3, H226; Acute Tox. 4, H312; Skin Irrit. 2, H315; Acute Tox. 4, H332;<br>Notes: C;                              |                   |
| CAS 64742-82-1 | naphtha, (petroleum), hydrodesulfurized heavy (white spirit) (<0,1% benzene)  |                   |
| EC 265-185-4   | REACH 01-2119484809-19  | 2.00 - < 2.50 %   |
| Classification | R10; N: R51/53; Xn: R65; R66; R67<br>EUH066; Flam. Liq. 3, H226; Asp. Tox. 1, H304; STOT SE 3, H336; Aquatic Chronic 2, H411; Notes: H P;                           |                   |

|                |  |                 |
|----------------|--|-----------------|
| CAS 34590-94-8 | (2-methoxymethylethoxy)propanol  |                 |
| EC 252-104-2   | REACH 01-2119450011-60   | 1.00 - < 2.00 % |
| Classification | Substances for which there are Community workplace exposure limits.  |                 |
| CAS 78-83-1    | iso-butanol  |                 |
| EC 201-148-0   | REACH 01-2119484609-23   | 1.00 - < 2.00 % |
| Classification | R10; Xi: R37/38; Xi: R41; R67  |                 |
| [VI*]          | Flam. Liq. 3, H226; Skin Irrit. 2, H315; Eye Dam. 1, H318; STOT SE 3, H335; STOT SE 3, H336;                               |                 |
| CAS 95-63-6    | 1,2,4-trimethylbenzene   |                 |
| EC 202-436-9   | REACH no registration number available   | 0.50 - < 1.00 % |
| Classification | R10; Xn: R20; Xi: R36/37/38; N: R51/53   |                 |
| [VI*]          | Flam. Liq. 3, H226; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Acute Tox. 4, H332; STOT SE 3, H335; Aquatic Chronic 2, H411; |                 |
| CAS 64742-95-6 | solvent naphtha (petroleum), light arom. (<0,1% benzene)   |                 |
| EC 265-199-0   | REACH 01-2119455851-35   | 0.50 - < 1.00 % |
| Classification | R10; Xi: R37; N: R51/53; Xn: R65; R66; R67; NotaH; NotaP   |                 |
|                | EUH066; Flam. Liq. 3, H226; Asp. Tox. 1, H304; STOT SE 3, H335; STOT SE 3, H336; Aquatic Chronic 2, H411; Notes: H P;      |                 |
| CAS 108-67-8   | mesitylene   |                 |
| EC 203-604-4   | REACH no registration number available   | 0.10 - < 0.20 % |
| Classification | R10; Xi: R37; N: R51/53  |                 |
| [VI*]          | Flam. Liq. 3, H226; STOT SE 3, H335; Aquatic Chronic 2, H411;  |                 |

Up to the given revision date of this safety data sheet only the above mentioned REACH registration numbers are assigned to the chemical substances used in this mixture.

#### Additional advice

To avoid misinterpretation in any case of risk assessment it is not allowed to accumulate the above mentioned percentages. See full text of R-phrases in chapter 16.  
See full text of H-phrases in chapter 16.

[VI\*]: Harmonised classification given by Annex VI of Regulation (EC) No 1272/2008 in its latest amended form

## Section 4. First aid measures

### 4.1. Description of first aid measures

#### General advice

When symptoms persist or in all cases of doubt seek medical advice. Never give anything by mouth to an unconscious person.

#### Inhalation

Avoid inhalation of vapour or mist. Move to fresh air in case of accidental inhalation of vapours. If breathing is irregular or stopped, administer artificial respiration. If unconscious place in recovery position and seek medical advice. If symptoms persist, call a physician.

#### Skin contact

Do NOT use solvents or thinners. Take off all contaminated clothing immediately. Wash skin thoroughly with soap and water or use recognized skin cleanser. If skin irritation persists, call a physician.

#### Eye contact

Remove contact lenses. Irrigate copiously with clean, fresh water for at least 15 minutes, holding the eyelids apart. Seek medical advice.

#### Ingestion

If swallowed, seek medical advice immediately and show this container or label. Do NOT induce vomiting. Keep at rest.

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

Please see practical experience in section 11.

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

If unconscious place in recovery position and seek medical advice.

### Section 5. Firefighting measures

#### 5.1. Extinguishing media

##### Suitable extinguishing media

Universal aqueous film-forming foam, Carbon dioxide (CO<sub>2</sub>), Dry chemical, Water spray.

##### Extinguishing media which shall not be used for safety reasons

High volume water jet Water spray

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

##### Hazardous combustion products

Fire will produce dense black smoke containing hazardous combustion products. Exposure to decomposition products may be a hazard to health.

##### Hazardous decomposition products

When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide and dioxide, smoke, oxides of nitrogen.

#### 5.3. Advice for firefighters

##### Fire and Explosion Hazards

Flammable liquid. Vapours may form explosive mixtures with air. Remove all sources of ignition. Solvent vapours are heavier than air and may spread along floors.

##### Special Protective Equipment and Fire Fighting Procedures

Wear as appropriate: Full protective flameproof clothing. Wear self contained breathing apparatus for fire fighting if necessary. In the event of fire, cool tanks with water spray. Do not allow run-off from fire fighting to enter drains or water courses.

### Section 6. Accidental release measures

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

Keep in a well-ventilated place. Keep away from sources of ignition. Do not inhale vapours.

#### 6.2. Environmental precautions

Do not let product enter drains. Notify the respective authorities in accordance with local law in the case of contamination of rivers, lakes or waste water systems. Please avoid any emission of volatile organic compounds as possible.

#### 6.3. Methods and materials for containment and cleaning up

Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local regulations. Clean preferably with a detergent; avoid use of solvents.

#### 6.4. Reference to other sections

Comply with safety directives (see chapters 7 and 8).

### Section 7. Handling and storage

#### 7.1. Precautions for safe handling

##### Safe handling advice

Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentration higher than the occupational exposure limits. The product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Preparation may charge electrostatically: always use grounded leads when transferring from one container to another. Operators should wear antistatic footwear and clothing. No sparking tools should be used. Avoid skin and eye contact. Do not breathe vapours or spray mist. Smoking, eating and drinking should be prohibited in the application area. For

personal protection see section 8. Comply with the health and safety at work laws. If material is a coating, do not sand, flame cut, braze or weld dry coating without an appropriate respirator or appropriate ventilation, and gloves.

### Advice on protection against fire and explosion

Solvent vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. Never use pressure to empty container: container is not a pressure vessel. Always keep in containers of same material as the original one. The accumulation of contaminated rags may result in spontaneous combustion. Good housekeeping standards and regular safe removal of waste materials will minimize the risks of spontaneous combustion and other fire hazards.

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

### Requirements for storage areas and containers

Observe label precautions. Store between 5 and 25 °C in a dry, well ventilated place away from sources of heat, ignition and direct sunlight. No smoking. Prevent unauthorized access. Containers which are opened must be carefully resealed and kept upright to prevent leakage. The storage and use of this product is subject to the requirements of the Dangerous Substances and Explosive Atmospheres Regulations (DSEAR). Up to 50 litres of such highly flammable liquids may be stored in a work area provided they are kept in a fire-proof cupboard or bin. Larger quantities must be kept in a separate storeroom conforming to the structural requirements of the regulations. Further guidance is contained in the HSE ACOP L135, "Storage of Dangerous Substances."

### Advice on common storage

Store separately from oxidizing agents and strongly alkaline and strongly acidic materials.

Do not store together with explosives, gases, oxidizing solids, products which form flammable gases in contact with water, oxidizing products, infectious products and radioactive products.

## 7.3. Specific end use(s)

Please see exposure scenarios as given in the annex.

## Section 8. Exposure controls/personal protection

### 8.1. Control parameters

#### DNEL

| CAS-No.    | Chemical Name  | End Use | Exposure routes | Frequency of exposure | Type             | Value           |
|------------|--|---------|-----------------|-----------------------|------------------|-----------------|
| 123-86-4   | n-butyl acetate  | Workers | Inhalative      | Long term             | Systemic effects | 100 mg/kg liq   |
| 71-36-3    | n-butanol  | Workers | Dermal          | Long term             | Systemic effects | 3,125 mg/kg/day |
|            |  | Workers | Inhalative      | Long term             | Systemic effects | 100 mg/kg liq   |
| 1569-02-4  | 1-ethoxypropan-2-ol  | Workers | Oral            | Long term             | Systemic effects | 310 mg/kg/day   |
|            |  | Workers | Dermal          | Long term             | Systemic effects | 74 mg/kg/day    |
|            |  | Workers | Inhalative      | Long term             | Systemic effects | 50 mg/kg liq    |
| 5131-66-8  | 3-butoxypropan-2-ol  | Workers | Dermal          | Long term             | Systemic effects | 44 mg/kg        |
|            |  | Workers | Inhalative      | Long term             | Systemic effects | 50 mg/kg liq    |
| 64742-82-1 | naphtha, (petroleum), hydrodesulfurized heavy (white spirit) (<0,1% benzene) | Workers | Dermal          | Long term             | Systemic effects | 44 mg/kg        |
|            |  | Workers | Inhalative      | Long term             | Systemic effects | 59.8 mg/kg liq  |
| 34590-94-8 | (2-methoxymethylethoxy)propanol  | Workers | Dermal          | Long term             | Systemic effects | 65 mg/kg/day    |
|            |  | Workers | Inhalative      | Long term             | Systemic effects | 50.4 mg/kg liq  |
| 78-83-1    | iso-butanol  | Workers | Inhalative      | Long term             | Systemic effects | 100 mg/kg liq   |
| 64742-95-6 | solvent naphtha (petroleum), light arom. (<0,1% benzene)                     | Workers | Dermal          | Long term             | Systemic effects | 25 mg/kg/day    |
|            |  | Workers | Inhalative      | Long term             | Systemic effects | 30.1 mg/kg liq  |

**PNEC**

| CAS-No.    | Chemical Name                   | Compartment | Type        | Value       |
|------------|---------------------------------|-------------|-------------|-------------|
| 71-36-3    | n-butanol                       | Aquatic     | Sediment    | 0.015 mg/kg |
|            |                                 | Aquatic     | Fresh water | 0.178 mg/l  |
|            |                                 | Aquatic     | Sea-water   | 0.0178 mg/l |
| 5131-66-8  | 3-butoxypropan-2-ol             | Aquatic     | Sediment    | 0.236 mg/l  |
|            |                                 | Aquatic     | Sea-water   | 0.0525 mg/l |
|            |                                 | Aquatic     | Sediment    | 70.2 mg/l   |
| 34590-94-8 | (2-methoxymethylethoxy)propanol | Aquatic     | Fresh water | 19 mg/l     |
|            |                                 | Aquatic     | Sea-water   | 1.9 mg/l    |
|            |                                 | Aquatic     | Sediment    | 1.52 mg/l   |
| 78-83-1    | iso-butanol                     | Aquatic     | Fresh water | 0.4 mg/l    |
|            |                                 | Aquatic     | Sea-water   | 0.04 mg/l   |
|            |                                 | Aquatic     | Sediment    | 0.04 mg/l   |

**Community / national occupational exposure limits**

| CAS-No.    | Chemical Name                   | Time   | Type    | Value      | Note |
|------------|---------------------------------|--------|---------|------------|------|
|            |                                 | Source |         |            |      |
| 123-86-4   | n-butyl acetate                 |        | STEL    | 966 mg/m3  |      |
|            |                                 |        | STEL    | 200 ppm    |      |
|            |                                 |        | TWA     | 724 mg/m3  |      |
|            |                                 |        | TWA     | 150 ppm    |      |
| 71-36-3    | n-butanol                       |        | STEL    | 154 mg/m3  |      |
|            |                                 |        | STEL    | 50 ppm     |      |
| 1330-20-7  | xylene                          | 15 min | IOELV15 | 442 mg/cm3 | Skin |
|            |                                 | 15 min | IOELV15 | 100 ppm    | Skin |
|            |                                 | 8 hr   | IOELV8  | 221 mg/cm3 | Skin |
|            |                                 | 8 hr   | IOELV8  | 50 ppm     | Skin |
|            |                                 |        | STEL    | 441 mg/m3  |      |
|            |                                 |        | STEL    | 100 ppm    |      |
|            |                                 |        | TWA     | 220 mg/m3  |      |
|            |                                 |        | TWA     | 50 ppm     |      |
| 34590-94-8 | (2-methoxymethylethoxy)propanol | 8 hr   | IOELV8  | 308 mg/cm3 | Skin |
|            |                                 | 8 hr   | IOELV8  | 50 ppm     | Skin |
|            |                                 | 8 hr   | TWA     | 308 mg/m3  |      |
|            |                                 | 8 hr   | TWA     | 50 ppm     |      |
| 78-83-1    | iso-butanol                     |        | STEL    | 231 mg/m3  |      |
|            |                                 |        | STEL    | 75 ppm     |      |
|            |                                 |        | TWA     | 154 mg/m3  |      |
|            |                                 |        | TWA     | 50 ppm     |      |
| 95-63-6    | 1,2,4-trimethylbenzene          | 8 hr   | IOELV8  | 100 mg/cm3 |      |
|            |                                 | 8 hr   | IOELV8  | 20 ppm     |      |
|            |                                 |        | TWA     | 125 mg/m3  |      |
|            |                                 |        | TWA     | 25 ppm     |      |

| CAS-No.  | Chemical Name | Time<br>Source | Type   | Value      | Note |
|----------|---------------|----------------|--------|------------|------|
| 108-67-8 | mesitylene    | 8 hr           | IOELV8 | 100 mg/cm3 |      |
|          |               | 8 hr           | IOELV8 | 20 ppm     |      |
|          |               |                | TWA    | 125 mg/m3  |      |
|          |               |                | TWA    | 25 ppm     |      |

## 8.2. Exposure controls

### Additional technical information on the plant

Provide adequate ventilation. This should be achieved by a good general extraction and -if practically feasible- by the use of a local exhaust ventilation. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL, suitable respiratory protection must be worn. Mask with gas filter, type A (EN 141)

### Protective equipment

Personal protective equipment should be worn to prevent contact with eyes, skin or clothing.

### Respiratory protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

### Hand protection

The breakthrough time of gloves is unknown for the product itself. The glove material given is recommended on basis of the substances in the preparation.

| Chemical Name  | Glove material | Glove thickness | Break through time |
|--|----------------|-----------------|--------------------|
| n-butyl acetate  | Viton (R) ®    | 0.7 mm          | 10 min             |
|  | Nitrile rubber | 0.33 mm         | 30 min             |
| n-butanol  | Viton (R) ®    | 0.7 mm          | 480 min            |
|  | Nitrile rubber | 0.33 mm         | 480 min            |
| xylene   | Nitrile rubber | 0.33 mm         | 30 min             |
|  | Viton (R) ®    | 0.7 mm          | 480 min            |
| solvent naphtha (petroleum), light arom. (<0,1% benzene) | Viton (R) ®    | 0.7 mm          | 30 min             |

The protective glove should be checked in each case for their work specific suitability (e.g. mechanical stability, product compatibility, and anti-static properties). When the intended use is for spray application a nitrile glove of the chemical resistance group 3 (e.g. Dermatrill® glove) is to be used. After contamination, the glove has to be changed. If immersing the hands into the product is not avoidable (e.g. maintenance work) a butyl or fluorocarbon rubber glove should be used. When skin exposure may occur to materials specified in section 3 of this SDS, advice should be sought from the glove supplier as to appropriate type to use with this product and the permeation breakthrough times. Care should be taken when working with sharp edged articles as these can easily damage the gloves and make them ineffective. The instructions and information provided by the glove supplier on use, storage, maintenance and replacement must be followed. Damaged gloves or those showing signs of wear should be replaced immediately.

### Eye protection

Wear protective eyewear for protection against solvent spatter.

### Skin and body protection

Wear suitable protective clothing. Personnel should wear antistatic clothings made of natural fiber or of high temperature resistant synthetic fiber.

### Hygiene measures

Wash skin thoroughly with soap and water or use recognized skin cleanser. Do not use organic solvents!

## Environmental exposure controls

Do not let product enter drains. For ecological information refer to section 12.

## Section 9. Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

#### Appearance

Form: liquid Colour: silver Odour: Odour is not perceptible.

#### Important health, safety and environmental information

| Property                               | Value  | Method                                     |
|--|--|--|
| pH                                     | no data available  |  |
| Melting point/freezing point           | Not applicable.  |  |
| Boiling point/boiling range            | 117 °C   |  |
| Flash point                            | 25 °C  | DIN 53213/ISO 1523                         |
| Evaporation rate                       | Slower than Ether  |  |
| Flammability (solid, gas)              | not relevant as product is liquid  |  |
| Lower explosion limit                  | 1.2 vol-% based on organic solvent content   |  |
| Upper explosion limit                  | 12 vol-% based on organic solvent content  |  |
| Vapour pressure                        | 7.5 hPa  |  |
| Vapour density                         | no data available  |  |
| Relative density                       | 0.94 g/cm <sup>3</sup>   | 20 °C - DIN 53217/ISO 2811                 |
| Solubility(ies)                        |  |  |
| Water solubility                       | appreciable  |  |
| Solubility in other solvents           | miscible with most organic solvents Listed in: Section 3. Composition/information on ingredients |  |
| Partition coefficient: n-octanol/water | This product is a mixture. For ingredient details see section 12                                 |  |
| Auto-ignition temperature              | 201 °C   | DIN 51794 based on organic solvent content |
| Decomposition temperature              | This product is a mixture. For further information see section 10.                               |  |
| Viscosity (23 °C)                      | 60 s   | ISO 2431 - 1993 6 mm                       |
| Explosive properties                   | Not explosive  |  |
| Oxidizing properties                   | not oxidizing  |  |

### 9.2. Other data

|  |        |                                   |
|--|--------|-----------------------------------|
| Solvent separation test                          | < 3%   | ADR/RID                           |
| Content of volatile components (including water) | 77.0 % | Basis Vapour pressure >= 0.01 kPa |
| organic solvent content                          | 76.8 % | Basis Vapour pressure >= 0.01 kPa |

## Section 10. Stability and reactivity

### 10.1. Reactivity

Keep away from oxidising agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

### 10.2. Chemical stability

The product is chemically stable.

### 10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

### 10.4. Conditions to avoid

Stable under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials to avoid

not required under normal use



## 10.6. Hazardous decomposition products

The product contains ingredients which, under certain conditions, also may release formaldehyde. If necessary, the precise concentration has to be determined.

## Section 11. Toxicological information

### 11.1. Information on toxicological effects

#### General observations

There is no data available on the product. The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and classified for toxicological hazards accordingly. See sections 2 and 3 for details.

#### Practical experience

Swallowing may cause nausea, diarrhoea, vomiting, gastro-intestinal irritation and chemical pneumonia. Exposure to component solvents vapours concentration in excess of the stated occupational exposure limit may result in adverse health effect such as mucous membrane and respiratory system irritation and adverse effect on kidney, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in non-allergic contact dermatitis and absorption through the skin.

#### Acute toxicity

##### Acute inhalation toxicity

| EINECS-No. | Chemical Name          | Species | Type | Exposure time | Value                    | Method |
|------------|------------------------|---------|------|---------------|--------------------------|--------|
| 215-535-7  | xylene                 | rat     | LC50 | 4 h           | 5,000 ppm                |        |
| 202-436-9  | 1,2,4-trimethylbenzene | rat     | LC50 | 4 h           | 18,000 mg/m <sup>3</sup> |        |

##### Acute dermal toxicity

| EINECS-No. | Chemical Name | Species | Type | Exposure time | Value         | Method |
|------------|---------------|---------|------|---------------|---------------|--------|
| 215-535-7  | xylene        | rabbit  | LD50 |               | > 1,700 mg/kg |        |

##### Acute oral toxicity

| EINECS-No. | Chemical Name | Species | Type | Exposure time | Value     | Method |
|------------|---------------|---------|------|---------------|-----------|--------|
| 200-751-6  | n-butanol     | rat     | LD50 | 8 h           | 790 mg/kg |        |

#### irritant effects

The liquid splashed in the eyes may cause irritation and reversible damage.

## Section 12. Ecological information

There are no data available on the product itself. The product should not be allowed to enter drains or watercourses. The data in this section is consistent with data from chemical safety reports available at the date of revision.

### 12.1. Toxicity

#### Aquatic toxicity

##### Acute toxicity aquatic invertebrates

| EINECS-No. | Chemical Name  | Species | Type | Exposure time | Value    | Method |
|------------|--|---------|------|---------------|----------|--------|
| 202-436-9  | 1,2,4-trimethylbenzene                                   | Daphnia | LC50 | 48 h          | 6 mg/l   |        |
| 265-199-0  | solvent naphtha (petroleum), light arom. (<0,1% benzene) | Daphnia | EC50 | 24 h          | 170 mg/l |        |
| 203-604-4  | mesitylene   | Daphnia | EC50 | 48 h          | 6 mg/l   |        |

#### Acute and extended toxicity of fishes

| EINECS-No. | Chemical Name  | Species                                   | Type | Exposure time | Value     | Method |
|------------|--|---|------|---------------|-----------|--------|
| 265-185-4  | naphtha, (petroleum), hydrodesulfurized heavy (white spirit) (<0,1% benzene) | Cyprinodon variegatus (sheepshead minnow) | LC50 | 96 h          | 10 mg/l   |        |
| 202-436-9  | 1,2,4-trimethylbenzene   | Oncorhynchus mykiss (rainbow trout)       | EC50 | 96 h          | 9.22 mg/l |        |
| 265-199-0  | solvent naphtha (petroleum), light arom. (<0,1% benzene)                     | Danio rerio (zebra fish)                  | LC50 | 96 h          | 10 mg/l   |        |
| 203-604-4  | mesitylene   | Carassius auratus (goldfish)              | LC50 | 96 h          | 12.5 mg/l |        |

#### Toxicity with aquatic plants

| EINECS-No. | Chemical Name  | Species | Type | Exposure time | Value   | Method |
|------------|--|---------|------|---------------|---------|--------|
| 265-185-4  | naphtha, (petroleum), hydrodesulfurized heavy (white spirit) (<0,1% benzene) | Algae   | EC50 | 72 h          | 10 mg/l |        |
| 265-199-0  | solvent naphtha (petroleum), light arom. (<0,1% benzene)                     | Algae   | EC50 | 72 h          | 10 mg/l |        |

## 12.2. Persistence and degradability

No information available.

## 12.3. Bioaccumulative potential

No information available.

## 12.4. Mobility in soil

No information available.

## 12.5. Results of PBT and vPvB assessment

Based on available data no ingredient is classified for this hazard property (please see section 3).

## 12.6. Other adverse effects

The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and is classified for eco-toxicological properties accordingly. See sections 2 and 3 for details.

### Adsorbed organic bound halogens (AOX)

Product does not contain organic linked halogens contributing to AOX.

# Section 13. Disposal considerations

## 13.1. Waste treatment methods

Dispose of in accordance with local regulations.

### Product

Recommendation:

A disposal process that converts the waste into energy is recommended. If this is not possible the hazardous waste must be disposed of by incineration.

| Waste Key Number | Description   |
|------------------|---|
| 08 01 11         | waste paint and varnish containing organic solvents or other dangerous substances |

### Uncleaned packaging

#### Recommendation:

Properly emptied containers are to be scrap processed or reconditioned. Improperly emptied containers are considered hazardous waste (waste key number 150110). Waste, including emptied containers, is controlled waste. Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. If fully drained containers are compacted they can be regarded as Controlled Waste and disposed of in accordance with the requirements of the Control of Pollution Act 1974 and the Environmental Protection Act 1990 (GB), the Pollution Control and Local Government (NI) Order 1978 (NI) or of the EC (Waste) Regulations 1979 and the EC (Toxic & Dangerous Waste) Regulations 1982 (IRL).

## Section 14. Transport information

Transport only in accordance with the requirements of the Carriage of Dangerous Goods by Road and Rail (Classification, Packaging and Labeling), ADR for road, RID for rail, IMDG for sea and ICAO/IATA for air transport.

### 14.1. UN number

ADR/RID; IMDG; ICAO/IATA: 1263

### 14.2. UN proper shipping name

ADR/RID; IMDG; ICAO/IATA: PAINT

### 14.3. Transport hazard class(es)

#### Hazard class

ADR/RID; IMDG; ICAO/IATA: 3

#### Subsidiary hazard class

ADR/RID; IMDG; ICAO/IATA: Not applicable.

#### Labels



#### Tunnel restriction code

ADR/RID: D/E

#### Special Provisions

ADR/RID: 640E

#### Kemler Code

ADR/RID: 30

#### Hazchem Code

ADR/RID: 3Y

#### EmS

IMDG: F-E,S-E

#### 14.4. Packaging group

ADR/RID; IMDG; ICAO/IATA: III

#### 14.5. Environmental hazards

ADR/RID; IMDG; ICAO/IATA: none

##### Marine pollutant

IMDG: no

#### 14.6. Special precautions for user

please see section 6 - 8

#### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Deliveries shall only be made based on appropriate packaging and in compliance with traffic laws.

### Section 15. Regulatory information

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

##### National legislation

This safety datasheet has been prepared according to British legislation.

The product is labeled according to the Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 as amended (CHIP Regulations). The risk associated with the use of this product must be assessed in accordance with the Control of Substances Hazardous to Health (COSHH) Regulations and the Dangerous Substances and Explosive Atmospheres Regulations.

#### 15.2. Chemical Safety Assessment

No safety checks were carried out on the mixture.

### Section 16. Other information

Full text of R phrases with no. appearing in section 3

|           |   |
|-----------|---|
| R10       | Flammable.  |
| R20       | Harmful by inhalation.  |
| R20/21    | Harmful by inhalation and in contact with skin.   |
| R22       | Harmful if swallowed.   |
| R36/37/38 | Irritating to eyes, respiratory system and skin.  |
| R36/38    | Irritating to eyes and skin.  |
| R37       | Irritating to respiratory system.   |
| R37/38    | Irritating to respiratory system and skin.  |
| R38       | Irritating to skin.   |
| R41       | Risk of serious damage to eyes.   |
| R51/53    | Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.   |
| R52/53    | Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |
| R65       | Harmful: may cause lung damage if swallowed.  |
| R66       | Repeated exposure may cause skin dryness or cracking.   |
| R67       | Vapours may cause drowsiness and dizziness.   |

Full text of H phrases with no. appearing in section 3

|      |  |
|------|--|
| H226 | Flammable liquid and vapour.                     |
| H302 | Harmful if swallowed.                            |
| H304 | May be fatal if swallowed and enters airways.    |
| H312 | Harmful in contact with skin.                    |
| H315 | Causes skin irritation.                          |
| H318 | Causes serious eye damage.                       |
| H319 | Causes serious eye irritation.                   |
| H332 | Harmful if inhaled.                              |
| H335 | May cause respiratory irritation.                |
| H336 | May cause drowsiness or dizziness.               |
| H411 | Toxic to aquatic life with long lasting effects. |

### Information taken from reference works and the literature.

|  |  |
|--|--|
| Substance No.  | CAS no: <a href="http://www.cas.org/EO/regsys.html">www.cas.org/EO/regsys.html</a><br>EC no: <a href="http://ecb.jrc.it/esis/index.php?PGM=ein">http://ecb.jrc.it/esis/index.php?PGM=ein</a>   |
| Substances presenting a health or environmental hazard within the meaning of Directive 67/548/EEC. | <a href="http://ecb.jrc.it/existing-chemicals/">http://ecb.jrc.it/existing-chemicals/</a><br><a href="http://ecb.jrc.it/classification-labelling/">http://ecb.jrc.it/classification-labelling/</a><br><a href="http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB">http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB</a><br><a href="http://www.cdc.gov/niosh/ipcs/icstart.html">http://www.cdc.gov/niosh/ipcs/icstart.html</a> |
| Other directives, limitations and prohibitory regulations  | Directive 76/769/EC<br>Directive 98/24/EC<br>Directive 90/394/EC<br>Directive 793/93/EC<br>Directive 1999/45/EC<br>Directive 2006/8/EC<br>EUR-LEX: <a href="http://europa.eu.int/eur-lex/lex">http://europa.eu.int/eur-lex/lex</a>   |
| Exposure limit for the pure substance  | <a href="http://osha.europa.eu/OSHA">http://osha.europa.eu/OSHA</a>  |

### Training advice

Directive 76/769/EC  
 Directive 98/24/EC

### Further information

The information of this SDS is based on the present state of our knowledge and meets the requirements of EU and national laws. The user's working conditions however, are beyond our knowledge and control. The product is not to be used for purposes other than those specified under section 1 without a written permission. It remains the responsibility of the user to ensure that the necessary steps are taken to meet the laws and regulations. Handling of the product may only be done by people above 18 years of age, who are satisfactorily informed of how to do the work, the hazardous properties and necessary safety precautions. The information given in this SDS is to describe the product only in terms of health and safety requirements and should not, therefore, be construed as guaranteeing specific properties.

### Report version

| Version | Changes       |
|---------|---------------|
| 15.3    | 0, 3, 7, 8, 9 |

Revision Date: 2013-05-02

## Annex - Exposure scenarios

### Consolidated exposure assessment for industrial and professional use of coating material

The consolidated exposure assessment provides specific information on how a hazardous substance (in a mixture) is to be managed and controlled. It considers specific conditions of use, in order to ensure that a use is safe to humans and the environment. Compliance with operational conditions and risk management measures is required if the exposure assessment is annexed to a mandatory safety data sheet. In this case, identified risk management measures are to be implemented unless the downstream user is able to ensure safe use in a diverging way.

#### 1. Consolidated exposure assessment (type 1) for application of coatings by spraying

##### Free short title:

Industrial or professional application of coatings by spraying (professional use in close to industrial setting)

##### Systematic title based on use descriptors:

|                                |  |
|--------------------------------|--|
| Sector of use                  | SU 22, SU 3  |
| Product category               | PC9a, PC9b   |
| Process category               | PROC4 (covering PROC2), PROC5 (covering PROC3),<br>PROC8a (covering PROC8b), PROC7 or PROC11 |
| Environmental release category | ERC4, ERC5, ERC6d  |

##### Activities covered:

Preparing (mixing, adding activator, adjusting viscosity), transferring/loading, application by spraying, drying and curing of coating material

##### Contributing scenarios:

|                          |   |
|--------------------------|---|
| spERC x1                 | Spray coating including purge loss  |
| PROC4 (covering PROC2)   | Applicable for: Drying and curing of coatings                                 |
| PROC5 (covering PROC3)   | Applicable for: Mixing of tints, adding of activator, adjustment of viscosity |
| PROC8a (covering PROC8b) | Transfer of substance or preparation (charging/discharging)                   |
| PROC7                    | Industrial spraying   |
| PROC11                   | Non industrial spraying   |

### 2. Operational conditions and risk management measures

#### 2.1. Contributing environmental scenario

Preparing, transferring/loading, application by spraying, drying and curing of coating material

##### Process conditions:

Potential transfer to process waste water stream when using Venturi wet scrubber for collecting overspray

|          | M(sperc)           | Transfer to process<br>waste water | Release<br>after on-site<br>WWTP | Municipal<br>STP |
|----------|--------------------|------------------------------------|----------------------------------|------------------|
| spERC x1 | Solids in paint    | 70%                                | 10%                              | yes              |
| spERC x1 | Volatiles in paint | 100%                               | 100%                             | yes              |

Potential transfer to process waste water stream when treating sludge from equipment cleaning

|          | M(sperc)           | Transfer to process<br>waste water | Release<br>after on-site<br>WWTP | Municipal<br>STP |
|----------|--------------------|------------------------------------|----------------------------------|------------------|
| spERC x3 | Solids in paint    | 10%                                | n.a.                             | yes              |
| spERC x3 | Volatiles in paint | 10%                                | n.a.                             | yes              |

#### 2.2. Contributing worker scenarios

Preparing, transferring/loading, application by spraying, drying and curing of coating material

|                         | PROC             | DOA   | LEV/TRV | RPE                | DPE         |
|-------------------------|------------------|-------|---------|--------------------|-------------|
| Mixing                  | 5 (covering 3)   | > 4 h | TRV     | no                 | yes level 2 |
| Transferring            | 8a (covering 8b) | > 4 h | TRV     | no                 | yes level 2 |
| Non-industrial spraying | 11               | > 4 h | LEV     | yes due to aerosol | yes level 2 |
| Industrial spraying     | 7                | > 4 h | LEV     | yes due to aerosol | yes level 2 |
| Curing                  | 4 (covering 2)   | > 4 h | TRV     | no                 | yes level 2 |

### Further specification:

Above parameters represent standard (default) assumptions according to CEPE mapping of operational conditions Valid information on risk management measures for specific formulation is provided in part 3. Deviation options are explained in part 4 (scaling).

### 3. Exposure estimation and reference to its source

Exposure assessment bases on initial scenarios for the used chemicals in this preparation as provided by manufacturers and importers. Identification of a lead substance indicator per route is based on the DPD+ methodology, taking into account content, dustiness and hazard characteristics. Use of the mixture is considered safe when conditions for safe use of the lead substance indicator are respected. Risk assessment is not applicable as long as no initial exposure scenarios are available.

#### 3.1. Environmental assessment

##### Assessment method:

ACEA spERC concept

Potential transfer to process waste water stream when using Venturi wet scrubber for collecting overspray

|                       | LSI (aquatic)  | LSI % range | M(sperc) | Transfer to process waste water | Release after on-site WWTP | Release after municipal STP | Dilution factor | Receiving body           | PNEC surface water |
|-----------------------|--|-------------|----------|---------------------------------|----------------------------|-----------------------------|-----------------|--------------------------|--------------------|
| spERC x1b (volatiles) | naphtha, (petroleum), hydrodesulfurized heavy (white spirit) (<0,1% benzene) | >1-5        | —        | 100%                            | 100%                       | 10%                         | 1               | 18,000 m <sup>3</sup> /d | —                  |

#### 3.2. Worker assessment

##### Assessment method:

ECETOC TRA version 3.0

Advice on respiratory protection equipment for PROC 7, 11 and on dermal protection equipment is based on DuPont expert judgement Reactive diluant (styrene) is released in range 1 to 5 % only.

Preparing, transferring/loading, application by spraying, drying and curing of coating material - professional setting

|                         | PROC             | Route      | LSI             | LSI % range | DOA   | LEV / TRV                  | RPE                         | DPE                        | DNEL  | RCR   |
|-------------------------|------------------|------------|-----------------|-------------|-------|----------------------------|-----------------------------|----------------------------|-------|-------|
| Mixing                  | 5 (covering 3)   | Inhalation | n-butyl acetate | >25         | > 4hr | Technical room ventilation | none                        | —                          | 100   | 0.30  |
|                         |                  | Skin       | n-butanol       | >5-25       | > 4hr | —                          | —                           | Resistant gloves, training | 3,125 | <0.01 |
| Transferring            | 8a (covering 8b) | Inhalation | n-butyl acetate | >25         | > 4hr | Technical room ventilation | none                        | —                          | 100   | 0.30  |
|                         |                  | Skin       | n-butanol       | >5-25       | > 4hr | —                          | —                           | Resistant gloves, training | 3,125 | <0.01 |
| Non-industrial spraying | 11               | Inhalation | n-butyl acetate | >25         | > 4hr | Local exhaust ventilation  | Filter mask (90% efficient) | —                          | 100   | 0.10  |

|        | PROC           | Route      | LSI             | LSI %<br>range | DOA   | LEV<br>TRV                 | / | RPE  | DPE                        | DNEL  | RCR   |
|--------|----------------|------------|-----------------|----------------|-------|----------------------------|---|------|----------------------------|-------|-------|
| Curing | 4 (covering 2) | Skin       | n-butanol       | >5-25          | > 4hr | –                          | – | –    | Resistant gloves, training | 3,125 | <0.01 |
|        |                | Inhalation | n-butyl acetate | >25            | > 4hr | Technical room ventilation | – | none | –                          | 100   | 0.15  |
|        |                | Skin       | n-butanol       | >5-25          | > 4hr | –                          | – | –    | Resistant gloves, training | 3,125 | <0.01 |

Preparing, transferring/loading, application by spraying, drying and curing of coating material - industrial setting

|                     | PROC             | Route      | LSI             | LSI %<br>range | DOA   | LEV<br>TRV                 | / | RPE                          | DPE                        | DNEL  | RCR   |
|---------------------|------------------|------------|-----------------|----------------|-------|----------------------------|---|------------------------------|----------------------------|-------|-------|
| Mixing              | 5 (covering 3)   | Inhalation | n-butyl acetate | >25            | > 4hr | Technical room ventilation | – | none                         | –                          | 100   | 0.30  |
|                     |                  | Skin       | n-butanol       | >5-25          | > 4hr | –                          | – | –                            | Resistant gloves, training | 3,125 | <0.01 |
| Transferring        | 8a (covering 8b) | Inhalation | n-butyl acetate | >25            | > 4hr | Technical room ventilation | – | none                         | –                          | 100   | 0.30  |
|                     |                  | Skin       | n-butanol       | >5-25          | > 4hr | –                          | – | –                            | Resistant gloves, training | 3,125 | <0.01 |
| Industrial spraying | 7                | Inhalation | n-butyl acetate | >25            | > 4hr | Local exhaust ventilation  | – | Air-fed mask (95% efficient) | –                          | 100   | –     |
|                     |                  | Skin       | n-butanol       | >5-25          | > 4hr | –                          | – | –                            | Resistant gloves, training | 3,125 | <0.01 |
| Curing              | 4 (covering 2)   | Inhalation | n-butyl acetate | >25            | > 4hr | Technical room ventilation | – | none                         | –                          | 100   | 0.15  |
|                     |                  | Skin       | n-butanol       | >5-25          | > 4hr | –                          | – | –                            | Resistant gloves, training | 3,125 | <0.01 |

#### Further specification:

Above exposure assessment is performed for coating material as supplied. Exposure assessment requires adaptation to ready for use mixture (review hardener and/or diluant)

#### 4. Guidance to downstream user to evaluate whether he works inside the boundaries set by the exposure scenario

Part 4 is common and is available at the end of the Annex.

#### 1. Consolidated exposure assessment (type 3) for sanding

##### Free short title:

Industrial or professional sanding of cured coating (professional use in close to industrial setting)

##### Systematic title based on use descriptors:

Sector of use

| SU 22, SU 3



|                                |            |
|--------------------------------|------------|
| Product category               | PC9a, PC9b |
| Process category               | PROC24     |
| Environmental release category | ERC12a     |

**Activities covered:**

Sanding of cured coating

**Contributing scenarios:**

|          |  |
|----------|--|
| spERC x4 | Wet sanding/wet dust collection in serial production                           |
| spERC x5 | Wet sanding/wet dust collection in refinishing process                         |
| PROC24   | Applicable for: Sanding, grinding, chipping or polishing of cured coating film |

**2. Operational conditions and risk management measures**
**2.1. Contributing environmental scenario**

Sanding of cured coating

**Process conditions:**

Potential transfer to process waste water stream when applying wet sanding techniques or wet dust collection

|                   | M(sperc)           | Transfer to process waste water | Release after on-site WWTP | Municipal STP |
|-------------------|--------------------|---------------------------------|----------------------------|---------------|
| spERC x4 (solids) | Solids in dry film | 2%                              | 10%                        | yes           |
| spERC x5 (solids) | Solids in dry film | 2%                              | 100%                       | yes           |

**2.2. Contributing worker scenarios**

Sanding of cured coating

|         | PROC | DOA   | LEV/TRV | RPE | DPE         |
|---------|------|-------|---------|-----|-------------|
| Sanding | 24   | > 4 h | LEV     | no  | yes level 2 |

**Further specification:**

Above parameters represent standard (default) assumptions according to CEPE templates for operational conditions. Valid information on risk management measures for specific formulation is provided in part 3. Deviation options are explained in part 4 (scaling).

**3. Exposure estimation and reference to its source**

Exposure assessment bases on initial scenarios for the used chemicals in this preparation as provided by manufacturers and importers. Identification of a lead substance indicator per route is based on the DPD+ methodology, taking into account content, dustiness and hazard characteristics. Use of the mixture is considered safe when conditions for safe use of the lead substance indicator are respected. Risk assessment is not applicable as long as no initial exposure scenarios are available.

**3.1. Environmental assessment**

No relevant ecotoxicological impact expected; specific description and assessment of environmental exposure obsolete;

**3.2. Worker assessment**

No relevant toxicological impact expected; specific description and assessment of worker exposure obsolete;

**Further specification:**

Above exposure assessment is performed for dry content of coating material as supplied. Exposure assessment requires adaptation to ready for use mixture (including reacted compounds where appropriate)

#### 4. Guidance to downstream user to evaluate whether he works inside the boundaries set by the exposure scenario

By variation of operational conditions and risk management measures (scaling), a downstream user can check whether he works inside the exposure scenario boundaries.

Standard scaling can be based on exposure modifying factors as used by ECETOC TRA which are listed below.

$RCR(s) = RCR(o) * EMF(s)/EMF(o)$

$RCR(s)$  shall be  $< 1$

$RCR(s)$  = scaled risk characterisation ratio;  $RCR(o)$  = original risk characterisation ratio (in part 3)

$EMF(s)$  = exposure modifying factor selected for scaling;  $EMF(o)$  = original exposure modifying factor (in part 3)

Scaling may be used consecutively for multiple determinants.

Example: No technical room ventilation for mixing of tints ( $EMF(o) = 0.3$ ), duration of activity restricted to 1 h/d ( $EMF(s) = 0.2$ )

**Specific scaling may be based on measured values at the individual site.**

| Content % range | Content Factor | DOA h  | DOA Factor | Respiratory protection equipment | Factor |         |
|-----------------|----------------|--------|------------|----------------------------------|--------|---------|
| > 25            | 1              | > 4    | 1          |                                  |        |         |
| 5 - 25          | 0.6            | 1 - 4  | 0.6        | No RPE                           | 1      |         |
| 1 - 5           | 0.2            | 0.25-1 | 0.2        | Filter mask                      | 0.1    | Level 1 |
| < 1             | 0.1            | <0.25  | 0.1        | Air-fed mask                     | 0.05   | Level 2 |

| Skin protection equipment           | Factor |         |
|-------------------------------------|--------|---------|
| No gloves                           | 1      |         |
| Suitable gloves                     | 0.2    | Level 1 |
| Resistant gloves, training          | 0.1    | Level 2 |
| Resistant gloves, specific training | 0.05   | Level 3 |

| PROC | Factor for TRV | Factor for LEV Industrial setting | Factor for LEV Professional setting | Factor for LEV Dermal impact |
|------|----------------|-----------------------------------|-------------------------------------|------------------------------|
| 2    | 0.3            | 0.1                               | 0.2                                 | 0.1                          |
| 3    | 0.3            | 0.1                               | 0.2                                 | 0.1                          |
| 4    | 0.3            | 0.1                               | 0.2                                 | 0.1                          |
| 5    | 0.3            | 0.1                               | 0.2                                 | 0.005                        |
| 7    |                | 0.05                              | n.a.                                | 0.05                         |
| 8a   | 0.3            | 0.1                               | 0.2                                 | 0.01                         |
| 8b   | 0.3            | Sol 0.05                          | Sol 0.2                             | 0.1                          |
| 8b   | 0.3            | Vol 0.03                          | Vol 0.1                             | 0.1                          |
| 11   |                | n.a.                              | 0.2                                 | 0.02                         |
| 24   |                | 0.2                               | 0.25                                | 0.1                          |

| PROC                   | Factor | PROC                   | Adjusted factor Professional | Adjusted factor Industrial |
|------------------------|--------|------------------------|------------------------------|----------------------------|
| 4 (high volatility)    | 1      | 2 (high volatility)    | 0.2                          | 0.5                        |
| 5 (high volatility)    | 1      | 3 (high volatility)    | 0.2                          | 0.4                        |
| 8a (high volatility)   | 1      | 8b (high volatility)   | 0.5                          | 0.6                        |
| 4 (medium volatility)  | 1      | 2 (medium volatility)  | 0.4                          | 0.5                        |
| 5 (medium volatility)  | 1      | 3 (medium volatility)  | 0.25                         | 0.5                        |
| 8a (medium volatility) | 1      | 8b (medium volatility) | 0.5                          | 1                          |
| 4 (low volatility)     | 1      | 2 (low volatility)     | 0.5                          | 0.2                        |
| 5 (low volatility)     | 1      | 3 (low volatility)     | 0.3                          | 0.6                        |
| 8a (low volatility)    | 1      | 8b (low volatility)    | 0.4                          | 0.5                        |

#### Additional explanation

Use by private end consumers (SU 21) not considered as product is assigned for professional use only

Wide dispersive use (ERC 8a-8f) not assessed as professional use in paintshops is considered as non dispersive (point source)

No relevant substance transfer expected to marine water, sediment, or soil due to use in dedicated installations.

Environmental assessment only relevant in case of substance transfer into a waste water stream

Environmental assessment based on ACEA sector specific ERC approach (spERC factors for solids and volatiles)

The spERC approach is only applicable to demonstrate safe use of a substance for environmental aspects under REACH.

It is not suitable to demonstrate compliance with applicable local waste water regulations.

Ingestion (oral route) not assessed as not considered to occur in case of industrial / professional use

Hazards due to particle shape negligible due to inclusion into polymer matrix (silicogenic or similar compounds)

Worker exposure assessment based on DNELs is only applicable to demonstrate safe use of substances under REACH.

It is not suitable to demonstrate compliance with applicable occupational exposure limits (as displayed in section 8 of SDS).

Occupational exposure limits may apply for residual monomers (e.g. formaldehyde, monomeric isocyanates) which are not assessed under REACH.

Exposure assessment is performed for coating material as supplied.

Adaptation may be required for ready for use mixture depending on selection of specific hardener and diluant  
Exposure assessment is performed for application of coating material at ambient temperature.  
Adaptation may be required for application at elevated temperature (e.g. hot spraying).  
Loss during service life negligible, in any case less than 1 %  
Waste stage not assessed as incineration / biological treatment of waste and safe deposition of inert residues is assumed  
Use for coating of toys, articles designed for prolonged skin contact or indirect food contact needs further assessment  
No SVHC above declaration threshold contained unless disclosed in section 3 of SDS

### Good practice advice

### Following advice shall be pursued as long as exposure assessment in part 3 does not contain sufficient information

Recommendation to use technical room ventilation.  
Advice to wear skin/eye protection as standard RMM due to risk of splashes/droplets.  
Advice on respiratory protection equipment for PROC 7, 11 is based on DuPont expert judgement  
Advice to use spray-booth or efficient exhaust ventilation.  
Advice to wear respiratory protection equipment as standard RMM due to aerosol formation, even in ventilated booth.  
Advice to use integrated dust evacuation, in case of air recirculation in accordance to EN 60335.  
Recommendation to use respiratory protection equipment when sanding, even in combination with integrated dust evacuation.  
Advice to use local exhaust ventilation according to EN 15012 for welding of coated substrates.  
Advice to provide spill retention system according to applicable regulation.  
Recommendation to avoid contact with water.

### Standardised use descriptors according European Chemical Agency (ECHA) Guidance on information requirements and chemical safety assessment, chapter R.12

|        |  |
|--------|--|
| SU 3   | Industrial uses: Uses of substances as such or in preparations at industrial sites   |
| SU 22  | Professional uses: Public domain (administration, education, entertainment, services, craftsmen)                             |
| PC9a   | Coatings and paints, thinners, paint removers  |
| PC9b   | Fillers, putties, plasters, modelling clay   |
| PROC2  | Use in closed, continuous process with occasional controlled exposure  |
| PROC3  | Use in closed batch process (synthesis or formulation)   |
| PROC4  | Use in batch and other process (synthesis) where opportunity for exposure arises   |
| PROC5  | Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/ or significant contact) |
| PROC7  | Industrial spraying  |
| PROC8a | Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities  |
| PROC8b | Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities      |
| PROC11 | Non industrial spraying  |
| PROC24 | High (mechanical) energy work-up of substances bound in materials and/ or articles   |
| ERC4   | Industrial use of processing aids in processes and products, not becoming part of articles                                   |
| ERC5   | Industrial use resulting in inclusion into or onto a matrix  |
| ERC12a | Industrial processing of articles with abrasive techniques (low release)   |
| ERC6d  | Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers                 |

### Glossary

|       |   |
|-------|---|
| SU    | Sector of use   |
| PC    | Product category  |
| PROC  | Process category  |
| ERC   | Environmental release category  |
| AC    | Article category  |
| spERC | Sector specific environmental release category (for ACEA uses)                            |
| ACEA  | European automobile manufacturers association   |
| AIRC  | Federation of vehicle repair organisations  |
| CEPE  | European council of producers and importers of paints, printing inks and artists' colours |
| OC    | Operational condition   |
| DOA   | Duration of activity  |
| LEV   | Local exhaust ventilation   |
| TRV   | Technical room ventilation  |
| RMM   | Risk Management Measures  |
| RPE   | Respiratory protection equipment  |
| DPE   | Dermal protection equipment   |
| WWTP  | Waste water treatment plant (on-site)   |
| STP   | Sewage treatment plant (municipal)  |
| SVHC  | Substance of very high concern  |

|            |   |
|------------|---|
| LSI        | Lead substance indicator  |
| M(sperc)   | Maximum volume of lead substance which can be used safely under conditions described by CEPE spERC    |
| DNEL       | Derived No Effect Level   |
| DMEL       | Derived minimum effect level  |
| PNEC       | Predicted No Effect Concentration   |
| ECETOC TRA | Targeted risk assessment as proposed by European center for ecotoxicology and toxicology of chemicals |
| RCR        | Risk characterisation ratio   |