

Article No.: 113-402 REDOCRYL  
Print date: 17.09.2014 Revision date: 20.02.2014  
Version: 1.3 Issue date: 20.02.2014999998 EN  
Page 1 / 8**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifiers**Article No. (manufacturer/supplier) 113-402  
Identification of the substance or mixture REDOCRYL  
Härter 400  
normal**1.2. Relevant identified uses of the substance or mixture and uses advised against****Relevant identified uses**

Hardener for 2 component polyurethane resins or coatings

**1.3. Details to the supplier providing the material safety data sheet****Producer:****FEYCOLOR GmbH**Maxhuettenstraße 6,  
93055 Regensburg,  
GermanyTel.: +49 (0) 941/ 60497-0  
Fax.: +49 (0) 941/ 60497-30  
info@feycolor.com

www.feycolor.com

**Office hours:**Monday - Thursday: 08:00 - 12:00 and 13:00 - 16:00  
Friday: 08:00 - 12:00**Department responsible for information:**

Hazardous material management: sd@feycolor.com

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****Classification according to Directive 67/548/EEC or 1999/45/EC**

This mixture is classified as hazardous according to 1999/45/EC.

R10

Xn; R20

Xi; R37

R43

R66

Harmful

Irritant

Flammable

Harmful by inhalation.

Irritating to respiratory system.

May cause sensitization by skin contact.

Repeated exposure may cause skin dryness or cracking.

**2.2. Label elements****Labelling (67/548/EEC or 1999/45/EC)**

Xn Harmful

**Hazard statements**

10

Flammable

20

Harmful by inhalation.

37

Irritating to respiratory system.

43

May cause sensitization by skin contact.

66

Repeated exposure may cause skin dryness or cracking.

**Precautionary statements**

24

Avoid contact with skin.

26

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

37

Wear suitable gloves.

38

In case of insufficient ventilation, wear suitable respiratory equipment.

51

Use only in well-ventilated areas.

23

Do not breathe vapour.

**contains:**

Hexamethylen-1,6-diisocyanat Homopolymer Aliphatisches Polyisocyanat

**Special provisions concerning the labelling of certain mixtures**

91 Contains isocyanates. May produce an allergic reaction.

2.3. **Other hazards**

**SECTION 3: Composition / information on ingredients**

3.2. **Mixtures**

**Product description / chemical characterization**

**Description** Preparation out of polyisocyanate in solvents

**Hazardous ingredients**

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

EC No. CAS No. INDEX No.	REACH No. Chemical name classification:	Wt % Remark
500-060-2 28182-81-2	01-2119488934-20-0000 1,6-Hexamethylene diisocyanate homopolymer Acute Tox. 4 H332 / STOT SE 3 H335 / Skin Sens. 1 H317	25 - 50
204-658-1 123-86-4 607-025-00-1	01-2119485493-29 n-butyl acetate Flam. Liq. 3 H226 / STOT SE 3 H336	25 - 50
203-603-9 108-65-6 607-195-00-7	01-2119475791-29 2-methoxy-1-methylethyl acetate Flam. Liq. 3 H226	20 - 25
265-199-0 64742-95-6 649-356-00-4	01-2119455851-35 Solvent naphtha (petroleum), light arom. Flam. Liq. 3 H226 / STOT SE 3 H335 / Aquatic Chronic 2 H411 / Asp. Tox. 1 H304 / STOT SE 3 H336	1 - 2,5

**Classification according to Directive 67/548/EEC or 1999/45/EC**

EC No. CAS No. INDEX No.	REACH No. Chemical name classification:	Wt % Remark
500-060-2 28182-81-2	01-2119488934-20-0000 Hexamethylen-1,6-diisocyanat Homopolymer Aliphatisches Polyisocyanat Xn; R20 / Xi; R37 / R43	25 - 50
204-658-1 123-86-4 607-025-00-1	01-2119485493-29 n-butyl acetate R10 / R66 / R67	25 - 50
203-603-9 108-65-6 607-195-00-7	01-2119475791-29 2-methoxy-1-methylethyl acetate R10	20 - 25 *
265-199-0 64742-95-6 649-356-00-4	01-2119455851-35 Solvent naphtha (petroleum), light arom.; Low boiling point naphtha - unspecified R10 / Xi; R37 / N; R51-53 / Xn; R65 / R66 / R67	1 - 2,5

**Additional information**

\* Substance with a common (EC) occupational exposure limit value.  
 Full text of R-phrases: see section 16.  
 Full text of H-phrases: 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.

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Page 3 / 8**After 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**

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

**After eye contact**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical advice immediately.

**After 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****SECTION 5: Firefighting measures****5.1. Extinguishing media****Suitable extinguishing media**

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

**Extinguishing media which must not be used for safety reasons:**

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. Special protective equipment for firefighters:**

Provide a conveniently located respiratory protective device.

**Additional information**

Cool closed containers that are near the source of the fire. Do not allow water used to extinguish fire to enter drains, ground or waterways. Treat runoff as hazardous.

**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. See protective measures under point 7 and 8.

**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 chapter 13). Use appropriate container to avoid environmental contamination. Fouled surfaces must be immediately cleaned with suitable solvents, Useable as such (flammable): water 45 vol.% ethanol or i-propanol 50 vol. % ammonia solution (density= 0.88) 5 vol.%

Alternative (non-flammable): sodium carbonate 5 vol.% water 95 vol.%.

Take up spilled residuals with the same agent and leave them for a few days in unclosed containers until there is no further reaction. Then, close the containers and dispose of them in accordance with the regulations for waste removal (refer to Chapter 13)

**6.4. Reference to other sections**

Observe protective provisions (see chapter 7 and 8).

**SECTION 7: Handling and storage**

People who suffer from skin sensitization problems, asthma, allergies, chronic or recurring respiratory illnesses should not be deployed in any process using this preparation.

People who spray this preparation should have regular pulmonary function tests.

**7.1. Precautions for safe handling****Advices on safe handling**

Avoid formation of flammable and explosive vapour concentrations in the air and exceeding the exposure limit values. Only use the material in places where open light, fire and other flammable sources can be kept away. Electrical equipment must be protected meeting the accepted standard. Product may become electrostatically charged. Provide earthing of containers, equipment, pumps and ventilation facilities. Anti-static clothing including shoes are recommended. Floors must be electrically conductive. Be careful when opening used containers (excess pressure). Precautionary measures should be taken in order to reduce strain from humidity or water: CO<sub>2</sub> is formed which may produce excess pressure in closed containers. Keep away from heat sources, sparks and open flames. Use only spark proof tools. Avoid contact with skin, eyes and clothes. Do not inhale dusts, particulates and spray mist when using this preparation. Avoid respiration of swarf. When using do not eat, drink or smoke. Personal protection equipment: refer to chapter 8. Do not empty containers with pressure - no pressure vessel! Always keep in containers that correspond to the material of the original container. Follow the legal protection and safety regulations.

**Precautions against fire and explosion:**

Vapours are heavier than air. Vapours form explosive mixtures with air.

**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 (BGR 132)".

**Hints on joint storage**

Keep away from strongly acidic and alkaline materials as well as oxidizers. Keep away from amines, alcohols and water.

**Further information on storage conditions**

Take care of instructions on label. Store in a well-ventilated and dry room at temperatures between 15 °C and 30 °C. Protect from heat and direct sunlight. Keep container tightly closed. Remove all sources of ignition. Smoking is forbidden. Access only for authorised persons. Store carefully closed containers upright to prevent any leaks.

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

Observe technical data sheet.

**SECTION 8: Exposure controls/personal protection**

People who suffer from skin sensitization problems, asthma, allergies, chronic or recurring respiratory illnesses should not be deployed in any process using this preparation.

People who spray this preparation should have regular pulmonary function tests.

**8.1. Control parameters****Occupational exposure limit values:**

n-butyl acetate

INDEX No. 607-025-00-1 / EC No. 204-658-1 / CAS No. 123-86-4

EN, TWA: 724 mg/m<sup>3</sup>; 150 ppm

EN, STEL: 966 mg/m<sup>3</sup>; 200 ppm

2-methoxy-1-methylethyl acetate

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

EN, TWA: 274 mg/m<sup>3</sup>; 50 ppm

EN, STEL: 548 mg/m<sup>3</sup>; 100 ppm

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha - unspecified

INDEX No. 649-356-00-4 / EC No. 265-199-0 / CAS No. 64742-95-6

EG, TWA: 200 mg/m<sup>3</sup>; 50 ppm

**Additional information**

TWA : long-term occupational exposure limit value

STEL : short-term occupational exposure limit value

Ceiling : peak limitation

**8.2. Exposure controls**

Provide good ventilation. This can be achieved with local or room suction. When spraying, wear self-contained breathing apparatus. For other tasks a suitable respiratory system must be used, if local and room suction is not sufficient for keeping aerosol and solvent vapour concentration below the exposure limit values. (refer to Personal protection equipment.)

**Occupational exposure controls****Respiratory protection**

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If concentration of solvents is beyond the occupational exposure limit values, approved and suitable respiratory protection must be used. Observe the wear time limits according GefStoffV in combination with the rules for using respiratory protection apparatus (BGR 190). Use only respiratory protection equipment with CE-symbol including four digit test number.

**Dand protection**

For prolonged or repeated handling the following glove material must be used: solventresistant Latex gloves  
 Thickness of the glove material > 0,4 mm ; Breakthrough time (maximum wearing 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 DIN EN 374  
 Barrier creams can help protecting exposed skin areas. In no case should they be used after contact.

**Eye protection**

Wear closely fitting protective glasses in case of splashes.

**Protective clothing**

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 chapter 7. No additional measures necessary.

**SECTION 9: Physical and chemical properties**

9.1. Information on basic physical and chemical properties

**Appearance:**

**Physical state** liquid  
**Colour** see productname  
**Odour** typical

Safety relevant basis data	Unit	Method	Remark
Flash point (°C):	26 °C		
Ignition temperature in °C:	180 °C		
lower explosion limit:	1,3 Vol-%		
Upper explosion limit:	10,8 Vol-%		
Vapour pressure at 20 °C: 20	6,20 hPa		
Density at 20 °C: 20	0,99 g/cm³		
Water solubility (g/L):	partly soluble		
pH value at 20 °C: 20	n.a.		
Viscosity at 20 °C: 20	> 16 s 4 mm	DIN 53211	
Solvent separation test (%):	< 3 %		
Solid content (%):	37 Wt %		
solvent content:			
Organic solvents:	62,86 Wt %		

9.2. Other information

**SECTION 10: Stability and reactivity**

10.1. Reactivity

10.2. Chemical stability

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

Stable when applying the recommended regulations for storage and handling. Further information on correct storage: refer to chapter 7. Hazardous decomposition byproducts may form with exposure to high temperatures.

10.5. Incompatible materials

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**

No data on preparation itself available.

**11.1. Information on toxicological effects****Acute toxicity**

Toxicological data are not available.

**Irritant and corrosive effects**

Toxicological data are not available.

**Sensitisation**

Toxicological data are not available.

**Specific target organ toxicity**

Toxicological data are not available.

**Aspiration hazard**

Toxicological data are not available.

**CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

Toxicological data are not available.

**Practical experience/human evidence**

Other observations:

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, dizziness, 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. Because of the isocyanate components" properties of this and with consideration of similar preparations the following applies: Preparation may cause acute irritation and/or sensitization of airways which lead to tightness in thorax, short-breath and asthmatic complaints. After sensitization even concentrations below the exposure limit values may cause asthma. Repeated inhaling can lead to permanent illness of the respiratory tract. 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.

**Overall Assessment on CMR properties**

The ingredients in this preparation do not meet the criteria for classification as CMR category 1 or 2. according to 67/548/EEC.

There is no information available on the preparation itself . The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and classified according to the toxicological dangers. See chapters 2 and 15 for details.

**SECTION 12: Ecological information****overall evaluation**

There is no information available on the preparation itself .

Do not allow to enter into surface water or drains.

**12.1. Toxicity**

No information available.

**Long-term Ecotoxicity**

Toxicological data are not available.

**12.2. Persistence and degradability**

Toxicological data are not available.

**12.3. Bioaccumulative potential**

Toxicological data are not available.

**Bioconcentration factor (BCF)**

Toxicological data are not available.

**12.4. Mobility in soil**

Toxicological data are not available.

**12.5. Results of PBT assessment**



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

**12.6. Other adverse effects****SECTION 13: Disposal considerations****13.1. Waste treatment methods****Appropriate disposal / Product Recommendation**

Do not allow to enter into surface water or drains. Handle contaminated packages in the same way as the substance itself. This material and its container must be disposed of in a safe way. Waste disposal according to EC directives 75/442/EEC and 91/689/EEC in the corresponding versions, covering waste and dangerous waste.

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

080111 waste paint and varnish containing organic solvents or other dangerous substances

**packaging****Recommendation**

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

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

1263

**14.2. UN proper shipping name**

Land transport (ADR/RID): Paint  
Sea transport (IMDG): PAINT  
Air transport (ICAO-TI / IATA-DGR): Paint

**14.3. Transport hazard class(es)**

3

**14.4. Packing group**

III

**14.5. Environmental hazards**

Land transport (ADR/RID) n.a.  
Marine pollutant n.a.

**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

**Additional information****Land transport (ADR/RID)**

tunnel restriction code D/E  
SONDERVORSCHRIFT 640E

**Sea transport (IMDG)**

EmS-No. F-E, S-E

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

not applicable

**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU legislation****Information according to 1999/13/EC about limitation of emissions of volatile organic compounds (VOC-guideline).**

VOC-value (in g/L) ISO 11890-2: 623  
VOC-value (in g/L) ASTM D 2369: 623

**according to EU-regulation 2004/42/EC (appendix II)**

EU limit value for this product (cat. nicht anwendbar): 0 g/l (2007)/0 g/l (2010).  
 This product contains max 623 g/l VOC.

**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 juvenils according to the "juvenile work protection guideline" (94/33/EC).

**Other regulations, restrictions and prohibition regulations**

15.2. **Chemical Safety Assessment**

Chemical safety assessments for substances in this preparation were not carried out.

**SECTION 16: Other information**

**Relevant R-and H-phrases (Number and full text):**

Acute Tox. 4 / H332	Acute toxicity (inhalative)	Harmful if inhaled.
STOT SE 3 / H335	Specific target organ toxicity (single exposure)	May cause respiratory irritation.
Skin Sens. 1 / H317	respiratory or skin sensitisation	May cause an allergic skin reaction.
Flam. Liq. 3 / H226	flammable liquids	Flammable liquid and vapour.
STOT SE 3 / H336	Specific target organ toxicity (single exposure)	May cause drowsiness or dizziness.
Aquatic Chronic 2 / H411	Hazardous to the aquatic environment	Toxic to aquatic life with long lasting effects.
Asp. Tox. 1 / H304	Aspiration hazard	May be fatal if swallowed and enters airways.
R10		Flammable
R66		Repeated exposure may cause skin dryness or cracking.
R67		Vapours may cause drowsiness and dizziness.
Xn; R20	Harmful	Harmful by inhalation.
Xi; R37	Irritant	Irritating to respiratory system.
R43		May cause sensitization by skin contact.
N; R51-53	Dangerous for the environment	Toxic to aquatic life. May cause long-term adverse effects in the aquatic environment.
Xn; R65	Harmful	Harmful: may cause lung damage if swallowed.

**Additional information**

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 chapter 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.