

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifiers**

Article No. (manufacturer/supplier) 113-200-2
Identification of the substance or mixture REDOCRYL
Härter 200
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,
Germany

Tel.: +49 (0) 941/ 60497-0
Fax.: +49 (0) 941/ 60497-30
info@feycolor.com

[<www.feycolor.com>](http://www.feycolor.com)

Office hours:
Monday - Thursday: 08:00 - 12:00 and 13:00 - 16:00
Friday: 08:00 - 12:00

Email: sd@feycolor.com
www.feycolor.com <<http://www.feycolor.com>>

1.4. Emergency telephone number: +49 (0) 700 24 11 21 12 (FCM)**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****Classification according to Regulation (EC) No. 1272/2008 [CLP]**

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

Flam. Liq. 3 / H226	flammable liquids	Flammable liquid and vapour.
Acute Tox. 4 / H332	Acute toxicity (inhalative)	Harmful if inhaled.
Skin Sens. 1 / H317	respiratory or skin sensitisation	May cause an allergic skin reaction.
STOT SE 3 / H335	Specific target organ toxicity (single exposure)	May cause respiratory irritation.
STOT SE 3 / H336	Specific target organ toxicity (single exposure)	May cause drowsiness or dizziness.

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

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

R10		Flammable
Xn; R20	Harmful	Harmful by inhalation.
Xi; R37	Irritant	Irritating to respiratory system.
R43		May cause sensitization by skin contact.
R66		Repeated exposure may cause skin dryness or cracking.

2.2. Label elements**Labelling according to Regulation (EC) No. 1272/2008 [CLP]****Hazard pictograms****Warning**

Hazard statements

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

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P241 Use explosion-proof electrical equipment.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P308 + P313 IF exposed or concerned: Get medical advice/attention.
 P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
 P501 Dispose of contents/container to industrial incineration plant.

contains:

1,6-Hexamethylene diisocyanate homopolymer
 n-butyl acetate

Supplemental Hazard information (EU)

EUH066 Repeated exposure may cause skin dryness or cracking.

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

n.a.

2.3. Other hazards

SECTION 3: Composition / information on ingredients

3.2. Mixtures

Product description / chemical characterization

Description Ohne

Hazardous ingredients

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

EC No.	REACH No.	Wt %
CAS No.	Chemical name	Remark
INDEX No.	classification:	
500-060-2	01-2119485796-17	
28182-81-2	1,6-Hexamethylene diisocyanate homopolymer Acute Tox. 4 H332 / Skin Sens. 1 H317 / STOT SE 3 H335	50 - 100
204-658-1	01-2119485493-29	
123-86-4	n-butyl acetate	20 - 25
607-025-00-1	Flam. Liq. 3 H226 / STOT SE 3 H336	

203-603-9	01-2119475791-29	
108-65-6	2-methoxy-1-methylethyl acetate	12,5 - 20
607-195-00-7	Flam. Liq. 3 H226	
203-933-3	01-211975112-47	
112-07-2	2-butoxyethyl acetate	5 - 10
607-038-00-2	Acute Tox. 4 H332 / Acute Tox. 4 H312 / Acute Tox. 4 H302	

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	01-2119485796-17 Hexamethylen-1,6-diisocyanat Homopolymer Aliphatisches Polyisocyanat Xn; R20 / Xi; R37 / R43	50 - 100
204-658-1 123-86-4 607-025-00-1	01-2119485493-29 n-butyl acetate R10 / R66 / R67	20 - 25
203-603-9 108-65-6 607-195-00-7	01-2119475791-29 2-methoxy-1-methylethyl acetate R10	12,5 - 20 *
203-933-3 112-07-2 607-038-00-2	01-211975112-47 2-butoxyethyl acetate Xn; R20/21/22	5 - 10

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.

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

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: CO₂ 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 (TRBS 2153)".

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

MEL/OES, TWA: 724 mg/m³; 150 ppm
 MEL/OES, STEL: 966 mg/m³; 200 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

2-butoxyethyl acetate
 INDEX No. 607-038-00-2 / EC No. 203-933-3 / CAS No. 112-07-2

WEL, TWA: 133 mg/m³; 20 ppm
 WEL, STEL: 332 mg/m³; 50 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

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

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.

Hand 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):	30 °C		
Ignition temperature in °C:	280 °C		
Lower explosion limit:	1,2 Vol-%		
Upper explosion limit:	10,8 Vol-%		
Vapour pressure at 20 °C: 20	10,70 hPa		

Density at 20 °C: 20	1,04 g/cm ³
Water solubility (g/L):	insoluble
pH at 20 °C: 20	n.a.
Viscosity at 20 °C: 20	13 mm ² /s
Solvent separation test (%):	< 3 %
Solid content (%):	54 Wt %
solvent content:	
Organic solvents:	46,20 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

2-methoxy-1-methylethyl acetate
 oral, LD50, Rat:

n-butyl acetate
 oral, LD50, Rat:

2-butoxyethyl acetate
 oral, LD50, Rat:

Irritant and corrosive effects

Toxicological data are not available.

Sensitisation

2-methoxy-1-methylethyl acetate
 Skin:

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Toxicological data are not available.

Specific target organ toxicity

Toxicological data are not available.

Aspiration hazard

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, 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. 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 and vPvB 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 directive 2008/98/EC, 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: 476
 VOC-value (in g/L) ASTM D 2369: 476

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 476 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

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

EC No. CAS No.	Chemical name	REACH No.
204-658-1 123-86-4	n-butyl acetate	01-2119485493-29
203-603-9 108-65-6	2-methoxy-1-methylethyl acetate	01-2119475791-29
500-060-2 28182-81-2	Hexamethylen-1,6-diisocyanat Polyisocyanat	Homopolymer Aliphatisches 01-2119485796-17
203-933-3 112-07-2	2-butoxyethyl acetate	01-211975112-47

SECTION 16: Other information

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

Acute Tox. 4 / H332	Acute toxicity (inhalative)	Harmful if inhaled.
Skin Sens. 1 / H317	respiratory or skin sensitisation	May cause an allergic skin reaction.
STOT SE 3 / H335	Specific target organ toxicity (single exposure)	May cause respiratory irritation.
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.
Acute Tox. 4 / H312	Acute toxicity (dermal)	Harmful in contact with skin.
Acute Tox. 4 / H302	Acute toxicity (oral)	Harmful if swallowed.
R10		Flammable
R66		Repeated exposure may cause skin dryness or cracking.
R67		Vapours may cause drowsiness and dizziness.

Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH)
according to Regulation (EU) No 453/2010Article No.: 113-200-2
Print date: 08.06.2015
Version: 1.0REDOCRYL
Revision date: 01.06.2015
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Xn; R20	Harmful	Harmful by inhalation.
Xi; R37	Irritant	Irritating to respiratory system.
R43		May cause sensitization by skin contact.
Xn; R20/21/22	Harmful	Harmful by inhalation, in contact with skin and 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.