

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Epoxy Resin HT 2

Revision date: 01.04.2021

Product code: 105104

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

Epoxy Resin HT 2

UFI: WA2D-39FV-N00C-83PU

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

Epoxy binder

1.3. Details of the supplier of the safety data sheet

| | | |
|-------------------------|---------------------------------|--------------------------------|
| Company name: | R&G Faserverbundwerkstoffe GmbH | |
| | Composite Technology | |
| Street: | Im Meißel 7 - 13 | |
| Place: | D-71111 Waldenbuch | |
| Post-office box: | 1145 | |
| | D-71107 Waldenbuch | |
| Telephone: | +49 (0)7157 5304-60 | Telefax: +49 (0)7157 5304-70 |
| e-mail: | info@r-g.de | |
| Contact person: | Michael Groß | Telephone: +49 (0)7157 5304-60 |
| e-mail: | urlaubmg@r-g.de | |
| Internet: | www.r-g.de | |
| Responsible Department: | Management | |

1.4. Emergency telephone number: Vergiftungs-Informations-Zentrale Freiburg
Tel: +49 (0)761 19240

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Regulation (EC) No. 1272/2008**

Hazard categories:

Skin corrosion/irritation: Skin Irrit. 2

Serious eye damage/eye irritation: Eye Irrit. 2

Respiratory or skin sensitisation: Skin Sens. 1

Hazardous to the aquatic environment: Aquatic Chronic 2

Hazard Statements:

Causes skin irritation.

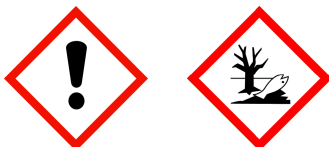
May cause an allergic skin reaction.

Causes serious eye irritation.

Toxic to aquatic life with long lasting effects.

2.2. Label elements**Regulation (EC) No. 1272/2008****Hazard components for labelling**

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane Reaction mass of 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]dioxirane and [2-({ 2-[4-(oxiran-2ylmethoxy)benzyl]phenoxy} methyl)oxirane and [2,2'-[methylenebis(2,1-phenyleneoxymethylene)]dioxirane Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane (1:2)

Signal word: Warning**Pictograms:**

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Hazard statements

| | |
|------|--|
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H411 | Toxic to aquatic life with long lasting effects. |

Precautionary statements

| | |
|----------------|--|
| P501 | Entsorgung des Inhalts / des Behälters gemäß den örtlichen / regionalen / nationalen/ internationalen Vorschriften. |
| P333+P313 | If skin irritation or rash occurs: Get medical advice/attention. |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P280 | Wear protective gloves and eye/face protection. |
| P273 | Avoid release to the environment. |
| P261 | Avoid breathing dust/fume/gas/mist/vapours/spray. |

Special labelling of certain mixtures

| | |
|--------|--|
| EUH205 | Contains epoxy constituents. May produce an allergic reaction. |
|--------|--|

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients**3.2. Mixtures****Hazardous components**

| CAS No | Chemical name | Quantity |
|-------------|--|------------------|
| | EC No | Index No |
| | | REACH No |
| | GHS Classification | |
| 9003-36-5 | epoxy resin (number average molecular weight <= 700), reaction product: bisphenol-F-(epichlorhydrin) | 20 -25 % |
| | 500-006-8 | 603-074-00-8 |
| | | 01-2119454392-40 |
| | Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1, Aquatic Chronic 2; H315 H319 H317 H411 | |
| 1675-54-3 | 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane | 25-50 % |
| | | 01-2119456619-26 |
| | Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1, Aquatic Chronic 2; H315 H319 H317 H411 | |
| 933999-84-9 | Reaction products of hexane-1,6-diol with 2-(chloromethyl) oxirane (1:2) | 10-<25 % |
| | 618-939-5 | 01-2119463471-41 |
| | Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1, Aquatic Chronic 3; H315 H319 H317 H412 | |

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

| CAS No | EC No | Chemical name | Quantity |
|-------------|-----------|---|------------|
| | | Specific Conc. Limits, M-factors and ATE | |
| 9003-36-5 | 500-006-8 | epoxy resin (number average molecular weight <= 700), reaction product: bisphenol-F-(epichlorhydrin) | 20 -25 % % |
| | | dermal: LD50 = > 2000 mg/kg; oral: LD50 = > 2000 mg/kg Skin Irrit. 2; H315: >= 5 - 100 Eye Irrit. 2; H319: >= 5 - 100 | |
| 1675-54-3 | | 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane | 25-50 % % |
| | | dermal: LD50 = 23000 mg/kg; oral: LD50 = 15000 mg/kg | |
| 933999-84-9 | 618-939-5 | Reaction products of hexane-1,6-diol with 2-(chloromethyl) oxirane (1:2) | 10-<25 % % |
| | | dermal: LD50 = 2000 mg/kg; oral: LD50 = 2190 mg/kg | |

SECTION 4: First aid measures

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4.1. Description of first aid measures

General information

Immediately remove any clothing contaminated with product.

After inhalation

Supply plenty of fresh air and seek medical attention for safety reasons. In case of unconsciousness, position and transport in stable lateral position.

After contact with skin

Immediately with water and soap and rinse thoroughly. Consult a doctor if skin irritation persists.

After contact with eyes

Rinse opened eye for several minutes with running water. Consult a doctor if symptoms persist.

After ingestion

Rinse mouth immediately and drink plenty of water.

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

No information available.

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

No information available.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

CO₂, extinguishing powder or water spray. Fight larger fires with water spray. Adapt fire extinguishing measures to the surroundings.

5.2. Special hazards arising from the substance or mixture

Carbon monoxide (CO) Under certain fire conditions, traces of toxic substances cannot be excluded, such as: Hydrogen chloride (HCl)

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

Additional information

Fire residues and contaminated extinguishing water must be disposed of in accordance with official regulations. Contaminated extinguishing water must be collected separately and must not be allowed to enter the sewage system.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures

Wear protective equipment. Keep unprotected persons away.

6.2. Environmental precautions

Do not discharge into drains/surface waters/groundwater. Do not discharge into the subsoil/soil.

6.3. Methods and material for containment and cleaning up

For containment

Absorb with liquid-binding material (sand, diatomaceous earth, acid binders, universal binders, sawdust). Ensure adequate ventilation.

Other information

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

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Disposal: see section 13

SECTION 7: Handling and storage**7.1. Precautions for safe handling****Advice on safe handling**

Ensure good ventilation/exhaustion at the workplace. Avoid formation of aerosols.

Advice on protection against fire and explosion

No special fire protection measures are necessary.

7.2. Conditions for safe storage, including any incompatibilities**Requirements for storage rooms and vessels**

Employ reliable measures to prevent the product from entering the soil. Keep only in the original container.

Hints on joint storage

Store separately from foodstuffs.

Further information on storage conditions

Store container in a well-ventilated place.

7.3. Specific end use(s)

No further relevant information available.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****DNEL/DMEL values**

| CAS No | Substance | | |
|------------------------|--|----------|-------------------------|
| DNEL type | Exposure route | Effect | Value |
| 1675-54-3 | 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane | | |
| Worker DNEL, | dermal | | 0,75 mg/kg bw/day |
| Worker DNEL, | inhalation | | 4,93 mg/m ³ |
| 933999-84-9 | Reaction products of hexane-1,6-diol with 2-(chloromethyl) oxirane (1:2) | | |
| Worker DNEL, acute | dermal | local | 22,6 mg/cm ² |
| Worker DNEL, long-term | dermal | local | 22,6 mg/cm ² |
| Worker DNEL, long-term | dermal | systemic | 2,8 mg/kg bw/day |
| Worker DNEL, acute | inhalation | systemic | 4,9 mg/m ³ |
| Worker DNEL, long-term | inhalation | systemic | 4,9 mg/m ³ |
| Worker DNEL, long-term | inhalation | local | 0,44 mg/m ³ |

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PNEC values

| CAS No | Substance | | Value |
|--|--|--|--------------|
| Environmental compartment | | | |
| 1675-54-3 | 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane | | |
| Freshwater | | | 0,006 mg/l |
| Marine water | | | 0,001 mg/l |
| Freshwater sediment | | | 0,341 mg/kg |
| Marine sediment | | | 0,034 mg/kg |
| Secondary poisoning | | | 11 mg/kg |
| Micro-organisms in sewage treatment plants (STP) | | | 10 mg/l |
| Soil | | | 0,065 mg/kg |
| 933999-84-9 | Reaction products of hexane-1,6-diol with 2-(chloromethyl) oxirane (1:2) | | |
| Freshwater | | | 0,0115 mg/l |
| Marine water | | | 0,00115 mg/l |
| Marine water (intermittent releases) | | | 0,0283 mg/kg |
| Freshwater sediment | | | 0,283 mg/kg |
| Micro-organisms in sewage treatment plants (STP) | | | 1 mg/l |
| Soil | | | 0,223 mg/kg |

Additional advice on limit values

The product does not contain any relevant quantities of substances with workplace-related limit values to be monitored.

8.2. Exposure controls**Protective and hygiene measures**

Keep away from food, drink and animal feeding stuffs. Immediately remove contaminated, soaked clothing. Wash hands before breaks and at the end of work. Avoid contact with eyes and skin.

Eye/face protection

Protective goggles

Hand protection

The glove material must be impermeable and resistant to the product / substance / preparation. Selection of the glove material considering the breakthrough times, permeation rates and degradation. Before each new use of the glove, the tightness must be tested. Preventive skin protection by using skin protectant is recommended. Glove material: Butyl rubber Nitrile rubber Recommended material thickness: = 0.4 mm The selection of a suitable glove depends not only on the material, but also on other quality characteristics and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of glove materials cannot be calculated in advance and must therefore be checked before use. Penetration time of the glove material The exact penetration time must be obtained from the protective glove manufacturer and must be observed.

Skin protection

Wear suitable protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

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SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

| | |
|-----------------|----------------|
| Physical state: | liquid |
| Colour: | light yellow |
| Odour: | characteristic |

Test method

pH-Value: not determined

Changes in the physical state

Melting point: not determined

Boiling point or initial boiling point and boiling range: > 200 °C

Flash point: > 100 °C

Flammability

Solid/liquid: not applicable

Gas: not applicable

Explosive properties

The product is not explosive.

Lower explosion limits: not determined

Upper explosion limits: not determined

Auto-ignition temperature: 300 °C

Oxidizing properties

Not oxidising.

Vapour pressure: 1 hPa
(at 20 °C)Density (at 20 °C): 1,13 g/cm³**Solubility in other solvents**

Not miscible or only slightly miscible.

Viscosity / dynamic: 380 mPa·s ISO 3219

9.2. Other information

Solid content: not determined

SECTION 10: Stability and reactivity**10.1. Reactivity**

No further relevant information available.

10.2. Chemical stability

Thermal decomposition / conditions to be avoided: No decomposition if used as directed.

10.3. Possibility of hazardous reactions

Partially very violent reactions with bases as well as numerous organic substance classes such as alcohols and amines. Polymerization under heat generation.

10.4. Conditions to avoid

No further relevant information available.

10.5. Incompatible materials

No further relevant information available.

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10.6. Hazardous decomposition products

Irritant gases / vapors

SECTION 11: Toxicological information**11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity**

| CAS No | Chemical name | | | | |
|-------------|--|-------------------|---------|--------|--------|
| | Exposure route | Dose | Species | Source | Method |
| 9003-36-5 | epoxy resin (number average molecular weight <= 700), reaction product: bisphenol-F-(epichlorhydrin) | | | | |
| | oral | LD50 > 2000 mg/kg | Rat | | |
| | dermal | LD50 > 2000 mg/kg | Rabbit | | |
| 1675-54-3 | 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane | | | | |
| | oral | LD50 15000 mg/kg | rat | | |
| | dermal | LD50 23000 mg/kg | rabbit | | |
| 933999-84-9 | Reaction products of hexane-1,6-diol with 2-(chloromethyl) oxirane (1:2) | | | | |
| | oral | LD50 2190 mg/kg | rat | | |
| | dermal | LD50 2000 mg/kg | rabbit | | |

Irritation and corrosivity

On the skin: Causes skin irritation. Serious eye damage/irritation: Causes severe eye irritation.

Sensitising effects

May cause an allergic skin reaction.

Carcinogenic/mutagenic/toxic effects for reproduction

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

STOT-single exposure

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

STOT-repeated exposure

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

Aspiration hazard

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

Additional information on tests

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

SECTION 12: Ecological information**12.1. Toxicity**

Aquatic toxicity

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| CAS No | Chemical name | | | | | |
|-------------|--|--------------|-----------|---------|--|--------|
| | Aquatic toxicity | Dose | [h] [d] | Species | Source | Method |
| 9003-36-5 | epoxy resin (number average molecular weight <= 700), reaction product: bisphenol-F-(epichlorhydrin) | | | | | |
| | Acute fish toxicity | LC50 mg/l | 2,54 | 96 h | | |
| 1675-54-3 | 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane | | | | | |
| | Acute fish toxicity | LC50 | 2 mg/l | 96 h | Oncorhynchus mykiss (Rainbow trout) | |
| | Acute algae toxicity | ErC50 | 11 mg/l | 72 h | algae | |
| | Acute crustacea toxicity | EC50 | 1,8 mg/l | 48 h | Daphnia magna | |
| 933999-84-9 | Reaction products of hexane-1,6-diol with 2-(chloromethyl) oxirane (1:2) | | | | | |
| | Acute fish toxicity | LC50 | 30 mg/l | 96 h | fish | |
| | Acute algae toxicity | ErC50 | 11 mg/l | 72 h | algae | |
| | Acute crustacea toxicity | EC50 | 1,8 mg/l | 48 h | Daphnia magna | |

12.2. Persistence and degradability

Product is biodegradable with difficulty.

| CAS No | Chemical name | | | | |
|-----------|--|-------|----|--------------|--|
| | Method | Value | d | Source | |
| | Evaluation | | | | |
| 9003-36-5 | epoxy resin (number average molecular weight <= 700), reaction product: bisphenol-F-(epichlorhydrin) | | | | |
| | OECD 301B | 16% | 28 | Manufacturer | |
| | Not readily biodegradable (according to OECD criteria) | | | | |

12.3. Bioaccumulative potential

No further relevant information available.

12.4. Mobility in soil

No further relevant information available.

12.5. Results of PBT and vPvB assessment

PBT: Not applicable. vPvB: Not applicable.

12.7. Other adverse effects

No further relevant information available.

Further information

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

SECTION 13: Disposal considerations**13.1. Waste treatment methods****Disposal recommendations**

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.

Contaminated packaging

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information**Land transport (ADR/RID)****14.1. UN number:**

UN 3082

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14.2. UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Epoxidharz)

14.3. Transport hazard class(es): 9

14.4. Packing group: III

Hazard label: 9



Classification code: M6

Limited quantity: 5 L

Excepted quantity: E1

Transport category: 3

Hazard No: 90

Marine transport (IMDG)

14.1. UN number: UN 3082

14.2. UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Epoxide resin) MARINE POLLUTANT

14.3. Transport hazard class(es): 9

14.4. Packing group: III

Hazard label: 9



Marine pollutant: Ja

Limited quantity: 5 L

Excepted quantity: E1

EmS: F-A, S-F

Air transport (ICAO-TI/IATA-DGR)

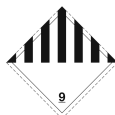
14.1. UN number: UN 3082

14.2. UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(epoxyd resin)

14.3. Transport hazard class(es): 9

14.4. Packing group: III

Hazard label: 9



Special Provisions: A97 A158

Limited quantity Passenger: 30 kg G

IATA-packing instructions - Passenger: 964

IATA-max. quantity - Passenger: 450 L

IATA-packing instructions - Cargo: 964

IATA-max. quantity - Cargo: 450 L

Other applicable information (air transport)

E1

Passenger-LQ: Y964

14.5. Environmental hazards

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ENVIRONMENTALLY HAZARDOUS: Yes



Danger releasing substance: The product contains environmentally hazardous substances:
bis[4(2,3-epoxypropoxy)phenyl]propane

14.6. Special precautions for user

Attention: Various hazardous substances and objects

14.7. Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information**

Restrictions on use (REACH, annex XVII):

Entry 3

National regulatory information

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

Water hazard class (D): 2 - obviously hazardous to water

Skin resorption/Sensitization: Causes allergic hypersensitivity reactions.

15.2. Chemical safety assessment

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

SECTION 16: Other information**Changes**

This data sheet contains changes from the previous version in section(s): 2.

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route
(European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service

LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

Relevant H and EUH statements (number and full text)

H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.
EUH205 Contains epoxy constituents. May produce an allergic reaction.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be

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transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)