

HEALTH AND SAFETY INFORMATION Ronabond EP/EP Thixo Resin

1. COMPOSITION

Chemical characterisation
Description: Epoxy resin

Dangerous components: CAS NO.

Designation	%	Index	R-phrases
Epoxy derivatives mw 700> 25068-38-6 bisphenol A-(epichlorhydrin); epoxy resin	50	Xi N 25-50 Xi N	36/38-43-51/53 36/38-43-51/53

2. HAZARDS IDENTIFICATION

Hazard designation:

Xi Irritant
N Dangerous for the environment

Information pertaining to particular dangers for man and environment

R 36/38

Irritating to eyes and skin.

R 43

May cause sensitisation by skin contact.

R 51/53

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Contains epoxy constituents. See information supplied by the manufacturer.

Additional information:

The residue of epichlorohydrine corresponds to the recommendations of APME: < 10 ppm (0,001%)

3. FIRST AID MEASURES

After inhalation:

Supply fresh air and call for doctor for safety reasons.
In case of unconsciousness bring patient into stable side position for transport.

After skin contact:

Instantly wash with water and soap and rinse thoroughly.

After eye contact:

Rinse opened eye for several minutes under running water.

Seek immediate medical advice.

After swallowing:

Rinse out mouth and then drink plenty of water.

Seek medical treatment.

4. FIRE FIGHTING MEASURES

Suitable extinguishing agents

CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

For safety reasons unsuitable extinguishing agents

Water with a full water jet.

Special hazards caused by the material, its products of combustion or resulting gases:

Can be released in case of fire

Carbon monoxide (CO)

Under certain fire conditions, traces of other toxic gases cannot be excluded, eg:

Hydrogen chloride (HCl)

Protective equipment:

Wear full protective suit.

Wear self-contained breathing apparatus.

Additional information:

Collect contaminated fire fighting water separately. It must not enter drains.

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

5. ACCIDENTAL RELEASE MEASURES

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Measures for environmental protection:

Do not allow product to reach sewage system or water bodies.

Do not allow to enter the ground/soil.

Measures for cleaning/collecting:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

6. HANDLING AND STORAGE

Handling:

Information for safe handling:

Store in cool, dry place in tightly closed containers.

Information about protection against explosions and fires:

No special measures required.

Storage:

Requirements to be met by storerooms and containers:

Prevent any penetration into the ground.

Information about storage in one common storage facility: Not required.

Keep container tightly sealed.

7. EXPOSURE CONTROLS/PERSONAL PROTECTION

Additional information about design of technical systems:

No further data; see item 7.

Personal protective equipment

General protection and hygienic measures:

Take off immediately all contaminated clothing.

Wash hands during breaks and at the end of the work.

Avoid contact with the eyes and skin.

Breathing equipment: Not necessary if room is well-ventilated.

Protection of hands: Plastic gloves

Butylcaoutchouc, nitrillatex

Eye protection: Tightly sealed safety glasses.

Body protection: Protective work clothing.

8. PHYSICAL AND CHEMICAL PROPERTIES

Form: viscous

Colour: light yellow

Odour: weak, characteristic

Value/Range Unit Method

Change in condition

Melting point/Melting range: Not determined

Boiling point/Boiling range: > 200°C DIN 53171
Flash point: > 250°C DIN 51758

Ignition temperature: 460°C DIN 51794
Decomposition temperature:> 200°C
Vapour pressure: at 20°C< 0.1 hPa
Density: at 20°C 1.16-1.18g/cm³ DIN 51757
Solubility in/Miscibility with Water: Insoluble

Viscosity:
dynamic: at 25°C 3700 - 4700mPa*s DIN 51562

9. STABILITY AND REACTIVITY

Thermal decomposition/conditions to be avoided:
No decomposition if used according to specifications.
Dangerous reactions:
May produce violent reactions with bases and numerous organic substances including alcohols and amines.
Exothermic polymerisation.
Dangerous products of decomposition: Irritant gases/vapours.

10. TOXICOLOGICAL INFORMATION

Acute toxicity:
LD/LC50 values that are relevant for classification:

Components	Type	Value	Species
bisphenol A-(epichlorhydrin);	epoxy resin		
	oral	>10000mg/kg	rat
	dermal	> 2000mg/kg	rat

Primary irritant effect:
on the skin: Irritant to skin and mucous membranes.
On the eye: Irritant effect.
Sensitisation: possible by skin contact.
Additional toxicological information:
When used harmful effects according to our experience and the information provided to us.

11. ECOLOGICAL INFORMATION

Information about elimination (persistence and degradability):
Other information: The product is slightly biodegradable.
Ecotoxicological effects:
Aquatic toxicity:
Type of test Effective concentration Method Assessment
Rainbow trout LC50/96h= 1.5 - 7.7mg/l
Daphnia magna EC50/24h= 1.1 - 3.6mg/l
(Bisphenol -A-Epichlorhydrinharze MG ≤ 700)

General notes:
Do not allow product to reach underground or surface water or sewage system.

12. DISPOSAL CONSIDERATIONS

Product:
Recommendation:
Remove according to local authority recommendations, eg convey to a licensed incinerator.

Uncleaned packagings:
Recommendation:

Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning.
Disposal must be made according to official regulations.

13. TRANSPORT INFORMATION

Land transport ADR/RID (cross-border)
ADR/RID Class: 9 various dangerous materials and objects
Number/Letter: 11c)
Hazard Index Number: 90
Substance Index Number: 3082
Label: 90
Designation of goods: 3082 Umweltgefährdender Stoff, flüssig, n.a.g.
(Epoxidderivat)

Maritime transport IMDG:
IMDG Class: 9
Page: 9028
UN Number: 3082
Packaging group: III
EMS Number: ---
MFAG: ---
Marine pollutant: yes
Correct technical name: Environmentally hazardous substances, liquid, n.o.s.
(epoxide derivative)

Air transport ICAO-TI and IATA-DGR:
ICAO/IATA Class: 9
UN/ID Number: 3082
Packaging group: III
Correct technical name: Environmentally hazardous substances, liquid, n.o.s.
(epoxide derivative)

14. REGULATORY INFORMATION

Designation according to EC guidelines:
The product has been classified and labelled in accordance with EC Directives/Ordinance on Hazardous Materials (GefStoffV)
Symbol N:
Recommendation of "Association of Plastics Manufacturers in Europe (APME) - Epoxy Resins Committee.
Code letter and hazard designation of product:
Xi Irritant
N Dangerous for the environment

Hazard-determining components of labelling:
Epoxide derivatives $mw \leq 700$
bisphenol A-(epichlorhydrin); epoxy resin
Risk phrases:
36/38 Irritating to eyes and skin.
43 May cause sensitisation by skin contact.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases:
37/39 Wear suitable gloves and eye/face protection.
28 After contact with skin, wash immediately with plenty of

61

soap and water.
Avoid release to the environment. Refer to special
instructions/Safety data sheets.

Special designation of certain preparations:

Contains epoxy constituents. See information supplied by the manufacturer.

National regulations - Other regulations, limitations and prohibitive regulations.

15. OTHER INFORMATION

This data is based on our present knowledge. However, it shall not constitute a
guarantee for any specific produce features and shall not establish a legally valid
contractual relationship.

Department issuing data specification sheet:

HEALTH AND SAFETY INFORMATION Ronabond EP/EP Thixo Hardener

1. COMPOSITION

Chemical properties (component substances)

Name of substance 3-Aminomethyl-3,5,5-trimethylcyclohexylamine

Chemical formula C₁₀ H₂₂ N₂

CAS N° 2 855-12-2

Index N° 612-067-00-9

Einecs N° 220-666-8

Index letter R-phrases

C R 21/22-34-43

Limiting concentration for danger symbol:

C R 21/22-34-43 >= 25%

C R 34-43 >= 10%

Xi R 36/38-43 >= 5%

Xi R 43 >= 1%

2. HAZARDS IDENTIFICATION

Description of dangers

Harmful in contact with skin and if swallowed.

Causes burns.

May cause sensitisation by skin contact.

3. FIRST AID MEASURES

General information

Remove contaminated or saturated clothing immediately.

Following inhalation

If aerosol or mists are formed:

Possible discomfort: Irritation of mucous lining (nose, throat, eyes), cough, sneezing, flow of tears.

Take affected person out into the fresh air.

If breathing difficulties occur (severe continual coughing):

Keep patient half sitting with upper body raised.

Consult doctor immediately.

Following contact with skin:

On skin contact, immediately rinse with plenty of water.

With continuous skin irritation, consult doctor.

Following eye contact:

Rinse thoroughly immediately with plenty of water for at least 10 minutes keeping eyelid open.

Protect uninjured eye.

Call ambulance.

(Cue: Caustic burn of the eyes) Immediate further treatment in eye clinic/by eye doctor.

If substance has been swallowed

Have patient rinse out mouth with water. Have patient drink plenty of water in small

sips (for dilution). Supply with medical care.

Instructions for the doctor
Therapy as for chemical burn.
See also section 11.

Following inhalation
Formation of a toxic lung adema is conceivable if product continues to be inhaled despite acute irritative effect (e.g. if it is not possible to leave the danger area).
Prophylaxis of a toxic lung oedema with inhalative steroids (Dexamethasone aerosol dosing spray, f.ex. auxilosone).
Alleviation of throat irritation with antitussive cough mixture (hydrocodon hydrogen artrate, e.g. dicodide).

If substance has been swallowed
Stomach pumping under gastroscopic view

4. FIRE FIGHTING MEASURES

Suitable extinguishing substances
Water, quenching foam, quenching powder, mist.
Carbon dioxide

Unsuitable extinguishing substances
None known

Particular danger caused by material, its combustion products or gases produced
Danger of decomposition when exposed to heat.
In case of combustion or decomposition of the product, the fumes produced lead to irritations or inflammation of the respiratory tract.
In the case of fire, the following hazardous smoke fumes may be produced: ammonia, nitric oxides, carbon monoxide, carbon dioxide.

Special protective equipment
In the case of fire, wear respiratory protective equipment independent of surrounding air and chemical protective suit.

Additional guidelines
Water used to extinguish fire should not enter drainage systems, soil or stretches of water.
Contaminated fire-extinguishing water must be disposed of in accordance with the regulations issued by the appropriate local authorities.

Fire residues should be disposed of in accordance with the regulations.

5. ACCIDENTAL RELEASE MEASURES

Density gases/fumes produced with water
Personal precautionary measures
Respiratory protective equipment
Do not inhale vapour
Avoid contact with skin and eyes
Wear protective suit.

Measures for environmental protection
Avoid penetration into drainage system or in rooms situated at a lower level because of danger of explosion.

Procedure for cleaning/absorption
Absorb with liquid-binding material (e.g. sand diatomaceous earth universal binder).

Dispose of absorbed material in accordance with the regulations.

Additional information

Keep away from sources of ignition. Do not smoke.

6. HANDLING AND STORAGE

Handling:

Handle under inert gas (nitrogen)

Directions for safe handling

Do not inhale vapour

Container may only be opened by means of suction

Keep away from sources of ignition - No Smoking

Take precautionary measures against static discharges

Directions on fire and explosion safety

Formation of flammable or explosive vapour/air mixtures possible.

Caution - electrostatic charge may occur.

Keep away from sources of ignition. Do not smoke.

Danger of explosion.

Ensure there are sufficient retaining facilities for water used to extinguish fire.

Storage:

Requirements for storage rooms

Well ventilated, dry, cool

Maximum storage temperature: 60°C

Requirements for containers

Suitable material for storage containers: Steel

Keep container tightly closed.

Further information on storage conditions

Keep away from moisture.

Keep under nitrogen-atmosphere.

See also section 10

Storage class

Observe National regulations

7. EXPOSURE CONTROLS/PERSONAL PROTECTION

Additional directions on design of technical systems:

see also section 7.

Ensure suitable suction/aeration at the work place and with operational machinery.

Components with work-place related limits to be monitored

Name of substance

3-Aminomethyl-3,5,5-trimethylcyclohexylamine

CAS N° 2 855-13-2

Index N° 612-067-009

Personal protective equipment

Measures for general protection and hygiene

The usual precautionary measures for dealing with chemicals should be observed.

No eating, drinking, smoking or sniffing tobacco at work.

Wash face and/or hands before break and end of work.

If the limits at the workplace are exceeded and/or larger amounts are released (leakage, spilling, etc) the indicated respiratory protection should be used.

If there is the possibility of skin/eye contact the indicated hand/eye/body protection should be used.

Avoid contact with skin, eyes and clothing.

Do not breathe vapour.
After contact with skin, wash immediately with plenty of water.
Use suitable skin protective agents before handling product.

Cleanse and apply cream to skin after work. Preventative skin protection recommended.

Respiratory protective equipment

If gas/fumes occur for short periods: Respirator with brown A-type filter.

Hand protection

Protective gloves: Rubber

Eye protection

Eye protectors or basked shaped glasses

Body protection

Protective clothing (alkali-resistant)

Remove contaminated or saturated clothing immediately.

8. PHYSICAL AND CHEMICAL PROPERTIES

Shape	Liquid
Colour	Colourless
Odour	amine, ammonia
Alteration in conditions	
Melting point/range	<10°C
Boiling point/range	247°C (1 013 hPa)
Method	
DIN 53 171	
Flashpoint	112°C
Method	DIN 51 758
Ignition temperature	380°C
Method	DIN 51 794
Lower explosion limits	1.2 Vol-%
Upper explosion limits	
Dust explosion class	omitted
Vapour pressure	approximately 0.02 hPa (at 20°C)
Density	0.920 - 0.925g/cm ³ (at 20°C)
Method	DIN 53 217
Apparent bulk density	omitted
Solubility	miscible with water
pH value	11.6
Medium	water (8.5g/l)
Viscosity	15mPa 51 562
Method	DIN 51 562

9. STABILITY AND REACTIVITY

Conditions to be avoided: >260°C

Substances to be avoided: acid, strong oxidant

Dangerous products of decomposition ammonia

Additional guidelines

Under normal conditions: stable

Under storage < 10°C some crystallisation (mainly cis isomer).

Product that has become hard can be reused if heated and mixed thoroughly.

10. TOXICOLOGICAL INFORMATION

LD/LC 50 values relevant for classification

Acute oral toxicity: LD 50 = 1 030mg/kg, rat, literature
Acute dermal toxicity: LD 50 = 1.84mg/kg, rabbit, literature
Primary irritative effect to the eyes: caustic, rabbit, OECD 405

Sensitisation

Maximisation test, guinea pig, sensitising, OECD 406.

Other information

Genotoxicity: in vitro (Ames test, cytogenetic test): negative

Micronucleus test, mouse, oral, negative.

Subacute to chronic toxicity

Rat, oral (drinking water study), duration: 13 weeks, follow-up (recovery): None;

No effect level (NOEL): = 60mg/kg ; OECD 408

Experience with Human Beings

Irritation and on occasion caustic effects to the skin and mucous membranes (eyes, respiratory channels, in the stomach/intestinal tracts after swallowing) are to be expected from local contact.

Skin sensitisation quite often occurs.

11. ECOLOGICAL INFORMATION

Information about elimination (persistence and degradability):

Biodegradability:

Degradation (28 days) = 8%, not easily biodegradable, OECD 301 A.

Abiotic degradability:

Photochemical degradation to 50% within approximately 5 hours, calculated

Behaviour in environmental fields

Mobility and bioaccumulation potential

log Pow = 0.79, OECD 107

Bioaccumulation: Low

Eco-toxic effects

Aquatic toxicity

Acute fish toxicity: LC 50 (96 h) - 110mg/l, leuciscus idus melanotus, EEC 84/449

Acute fish toxicity: LC 0 (96 h) = 70mg/l, leuciscus idus melanotus, EEC 84/449

Acute toxicity to crustaceans (reproduction): NOEC (21 days) - 3mg/l, Daphnia magna, OECD 202

Toxicity to crustaceans (reproduction): EC 10 (21 days) - 10mg/l. Daphnia magna, OECD 202.

Chronic algae toxicity: IC 50 (72 days) - 37mg/l,

Scenedesmus subspicatus. EEC 87/302

Chronic algae toxicity: IC 0 (72 days) = 1.5mg/l,

Scenedesmus subspicatus. EEC 87/302

Behaviour in water treatment plants

Bacterial toxicity:

Pseudomonas putida, beginning obstruction of cell multiplication with = 1 120mg/l, DEV, DIN 38412, T. 8. (18 hours)

12. DISPOSAL CONSIDERATIONS

Product:

Recommended

Must be subjected to special treatment in accordance with the regulations issued by the appropriate local authorities e.g. incineration plant.

Observe national regulations.

13. TRANSPORT INFORMATION

Dangerous according to the transport regulations
GGVS /GGVE/ RID/ ADR/ IMDG code / ICAO-IT Yes

Surface transport ADR / RID / GGVS / GGVE

Classification

Class: 8 Number: 53 Letter: C)

Danger labels

N° 8 (2) N° (3) N° (4) N°

Orange warning plate 80/2289

Listed good according to art. 7 GGVS No

Listed good according to art. 7a GGVS No

Accident data sheet Rail

Name of product (proper shipping name for surface transport) 2289

Isophoronadiazine

Loading instructions/comments

Road (National)

Road (International)

Rail (National)

Rail (National)

Transport by vessel IMDG code/GGVSee

Classification

Class 8

UN N° 2289

Packaging group 3

Danger labels

Label 8

Label (2)

Label (3)

Label (4)

Danger of water pollution

Emergency action

EmS 8-05

EmS (2)

MFAG 320

MFAG (2)

Proper shipping name Isophorone Diamine

Air transport ICAO-TI/IATA-DGR

Classification

Class 8

UN N° 2289

Packaging group 3

Danger Labels

Label 8

Label (2)

Label (3)

Label(4)

Proper shipping name Isophorone Diamine

Drill 8I

Inland navigation AND / ADN

The transport classification for inland navigation has not yet been determined; please consult us before shipment is necessary.

Transport/Further information

Keep separate from foodstuffs, Luxury foods, feedstuffs.

14. REGULATORY INFORMATION

Labelling in accordance with EC directive

Index letter and indication of danger posed by product

C Corrosive

Hazardous component(s)

S Aminomethyl-3,5,5-triethylcyclohexylamine

R-phases

R 21/22-34-43

Harmful in contact with skin contact.

S-phases

S 26-36/37/39-45

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

Wear suitable protective clothing, gloves and eye/face protection.

In case of accident (show the label where possible).

1/2= Keep locked up and out of reach of children

RRC N° 220-666-8

EC Labelling

National regulations

Observe National regulations

15. OTHER INFORMATION

The data presented here correspond to the present state of our knowledge and experience and are intended to describe our product with respect to possible safety demands. We imply with this however no guarantee of properties or description of qualities.