


1 Identification of the substance / preparation and of the company
1.1 Product identifier

Buehler EpoxiCure Hardener
Article number 20-8132-xxx

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

Mounting material for metallographic specimens

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet
Company

Buehler GmbH

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 D-40599 Düsseldorf / GERMANY
 Phone 0800 707 6273
 Fax 0800 707 6274
 Homepage www.buehler-met.de/en/
 E-mail sales@buehler.co.uk

Address enquiries to
Technical information

sales@buehler.co.uk

Safety Data Sheet

sdb@chemiebuero.de

1.4 Emergency phone
Company

0800 707 6273 (Only valid if dialled within the UK) +49 (0) 211 974100

2 Hazards identification
2.1 Classification of the substance or mixture
2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]
Hazard pictograms

Signal word

DANGER

Acute Tox. 4 - H302 H312 Harmful if swallowed or in contact with skin.
 Skin Corr. 1B - H314 Causes severe skin burns and eye damage.
 Skin Sens. 1 - H317 May cause an allergic skin reaction.
 Aquatic Chronic 3 - H412 Harmful to aquatic life with long lasting effects.
 Classification according to conversion table Annex VII 1272/2008/EC

2.1.2 Classification according to Regulation 67/548/EEC or 1999/45/EC
Hazard symbols


Corrosive

R-phrases

R 21/22: Harmful in contact with skin and if swallowed.
 R 34: Causes burns.
 R 43: May cause sensitisation by skin contact.
 R 52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.



2.2 Label elements

Labelling according to Regulation 67/548/EEC or 1999/45/EC

Hazard symbols



Corrosive

Contains:

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with diethylenetriamine

Propylidynetrimethanol, propoxylated, reaction products with ammonia

2,2'-Iminodiethylamine

Triethylenetetramine

R-phrases

R 21/22: Harmful in contact with skin and if swallowed.

R 34: Causes burns.

R 43: May cause sensitisation by skin contact.

R 52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrases

S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 36/37/39: Wear suitable protective clothing, gloves and eye/face protection.

S 45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Special labelling

none

2.3 Other hazards

Physico-chemical hazards

No particular hazards known.

Environmental hazards

Does not contain any PBT or vPvB substances.

Other hazards

none

3 Composition / Information on ingredients

3.1 Product-type:

The product in question is a mixture.

Range [%]	Substance
25 - < 40	Propylidynetrimethanol, propoxylated, reaction products with ammonia CAS: 39423-51-3, EINECS/ELINCS: 500-105-6 GHS/CLP: Skin Corr. 1B - H314 - Acute Tox. 4 - H302 H312 EEC: C, R 21/22-34
25 - < 40	4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with diethylenetriamine CAS: 31326-29-1, EINECS/ELINCS: 500-072-8 GHS/CLP: Acute Tox. 4 - H302 H312 - Skin Corr. 1B - H314 - Skin Sens. 1 - H317 - Aquatic Chronic 3 - H412 EEC: C, R 21/22-34-43-52/53
25 - < 40	Triethylenetetramine CAS: 112-24-3, EINECS/ELINCS: 203-950-6, EU-INDEX: 612-059-00-5 GHS/CLP: Aquatic Chronic 3 - H412 - Skin Sens. 1 - H317 - Skin Corr. 1B - H314 EEC: C, R 52/53-43-34-21
20 - 30	2,2'-Iminodiethylamine CAS: 111-40-0, EINECS/ELINCS: 203-865-4, EU-INDEX: 612-058-00-x GHS/CLP: Acute Tox. 4 - H302 H312 - Skin Corr. 1B - H314 - Skin Sens. 1 - H317 EEC: C, R 43-34-21/22

Comment on component parts

Substances of Very High Concern - SVHC: substances are not contained or are below 0,1%. For the wording of the listed risk phrases refer to section 16.



4 First aid measures

4.1 Description of first aid measures

General information	Remove contaminated soaked clothing immediately and dispose of safely.
Inhalation	Ensure supply of fresh air. In the event of symptoms seek for medical treatment.
Skin contact	In case of contact with skin wash off immediately with soap and water. Consult a doctor if skin irritation persists.
Eye contact	In case of contact with eyes rinse thoroughly with plenty of water and seek medical advice.
Ingestion	Consult a doctor immediately. Do not induce vomiting. Rinse out mouth and give plenty of water to drink.

4.2 Most important symptoms and effects, both acute and delayed

Headache

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5 Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media Foam.
Dry powder.
Water spray jet.
Carbon dioxide.

Extinguishing media that must not be used Full water jet.

5.2 Special hazards arising from the substance or mixture

Unknown risk of formation of toxic pyrolysis products.
Carbon monoxide (CO)
Nitrogen oxides (NOx).

5.3 Advice for firefighters

Use self-contained breathing apparatus.
Wear full protective suit.
Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.
High risk of slipping due to leakage/spillage of product.
Keep away from all sources of ignition.

6.2 Environmental precautions

Prevent spread over a wide area (e.g. by containment or oil barriers).
Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up

Take up with absorbent material (e.g. general-purpose binder).
Dispose of absorbed material in accordance within the regulations.

6.4 Reference to other sections

See section 8+13



7 Handling and storage

7.1 Precautions for safe handling

Use only in well-ventilated areas.
No special measures necessary if used correctly.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.
Do not store together with oxidizing agents.
Keep container tightly closed.
Keep container in a well-ventilated place.

7.3 Specific end use(s)

See product use, section 1.2

8 Exposure controls / personal protection

8.1 Control parameters

Ingredients with occupational exposure limits to be monitored (GB)

Range [%]	Substance
10 - <25	2,2'-Iminodiethylamine
	CAS: 111-40-0, EINECS/ELINCS: 203-865-4, EU-INDEX: 612-058-00-x
	Long-term exposure: 1 ppm, 4,3 mg/m ³ , Sk

8.2 Exposure controls

Additional advice on system design	Ensure adequate ventilation on workstation.
Eye protection	Safety glasses.
Hand protection	Nitrile rubber, >480 min (EN 374). The details concerned are recommendations. Please contact the glove supplier for further information.
Skin protection	Light protective clothing of plastic material.
Other	Avoid contact with eyes and skin. Do not inhale vapours. Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of these equipments to chemicals should be ascertained with the respective supplier. Do not eat, drink, smoke or take drugs at work. Remove soiled or soaked clothing immediately. Use barrier skin cream. After worktime and before work breaks the affected skin areas must be thoroughly cleaned.
Respiratory protection	not applicable
Thermal hazards	No informations available.
Delimitation and monitoring of the environmental exposition	not determined



9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid
Color	clear
Odor	ammoniac-like
Odour threshold	not determined
pH-value	alkaline
pH-value [1%]	not determined
Boiling point [°C]	137-205
Flash point [°C]	102
Flammability [°C]	not determined
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Oxidizing properties	no
Vapour pressure/gas pressure [kPa]	not determined
Density [g/ml]	1,04 (20°C / 68,0°F)
Bulk density [kg/m³]	not applicable
Solubility in water	partially miscible
Partition coefficient [n-octanol/water]	not determined
Viscosity	not applicable
Relative vapour density determined in air	not determined
Evaporation speed	not determined
Melting point [°C]	not determined
Autoignition temperature [°C]	not determined
Decomposition temperature	not determined

9.2 Other information

none

10 Stability and reactivity

10.1 Reactivity

No dangerous reactions known if used as directed.

10.2 Chemical stability

Stable under normal ambient conditions (ambient temperature).

10.3 Possibility of hazardous reactions

Reactions with strong alkalis and oxidizing agents.
Reactions with acids.

10.4 Conditions to avoid

See section 7

10.5 Incompatible materials

See section 10.3.

10.6 Hazardous decomposition products

No hazardous decomposition products known.



11 Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Range [%]	Substance
20 - 30	2,2'-Iminodiethylamine, CAS: 111-40-0
	LC50, inhalative, Rat: 1,8 mg/L (IUCLID).
	LD50, dermal, Rabbit: 950 - 1240 mg/kg bw (IUCLID).
	LD50, oral, Rat: 819 - 1430 mg/kg bw (IUCLID).
25 - < 40	Triethylenetetramine, CAS: 112-24-3
	LD50, oral, Rat: 2780 mg/kg (IUCLID).
	LD50, dermal, Rabbit: 550 mg/kg (IUCLID).

Serious eye damage/irritation	not determined
Skin corrosion/irritation	not determined
Respiratory or skin sensitisation	not determined
Specific target organ toxicity — single exposure	not determined
Specific target organ toxicity — repeated exposure	not determined
Mutagenicity	not determined
Reproduction toxicity	not determined
Carcinogenicity	not determined
General remarks	

Toxicological data of complete product are not available.

The product was classified on the basis of the calculation procedure of the preparation directive.

The toxicity data listed pertaining to the ingredients are intended for those working in the medicinal professions, experts for occupational health and safety and toxicologists. The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

12 Ecological information

12.1 Toxicity

Range [%]	Substance
20 - 30	2,2'-Iminodiethylamine, CAS: 111-40-0
	LC50, (96h), Leuciscus idus: 430 mg/L (IUCLID).
	EC50, (48h), Daphnia magna: 17 mg/L (IUCLID).
	EC50, (96h), Scenedesmus subspicatus: 592 mg/L (IUCLID).
25 - < 40	Triethylenetetramine, CAS: 112-24-3
	IC50, (72h), Algae: > 100 mg/l.
	LC0, (48h), Leuciscus idus: 200 mg/l.
	EC50, (48h), Daphnia magna: 31,1 mg/l (IUCLID).
	LC50, (96h), Poecilia reticulata: 570 mg/l (IUCLID).

12.2 Persistence and degradability

Behaviour in environment compartments	not determined
Behaviour in sewage plant	not determined
Biological degradability	not determined

12.3 Bioaccumulative potential

No informations available.

12.4 Mobility in soil

No informations available.



12.5 Results of PBT and vPvB assessment

No informations available.

12.6 Other adverse effects

The product was classified on the basis of the calculation procedure of the preparation directive.

The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

13 Disposal considerations

13.1 Waste treatment methods

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

Product

Disposal in an incineration plant in accordance with the regulations of the local authorities.
Coordinate disposal with the authorities if necessary.

Waste no. (recommended)

080409*

Contaminated packaging

Packaging that cannot be cleaned should be disposed of as for product.
Uncontaminated packaging may be taken for recycling.

Waste no. (recommended)

150110*
150101
150102
150104

14 Transport information

14.1 UN number

See section 14.2 in accordance with UN shipping name



14.2 UN proper shipping name

Transport by land according to ADR/RID UN 2735 Amines, liquid, corrosive, n.o.s. (Triethylenetetramine, 3-Azapentan-1,5-diamine) 8 II

- Classification Code C7

- Label



- ADR LQ 1 I

- ADR 1.1.3.6 (8.6)

Transport category (tunnel restriction code) 2 (E)

Inland navigation (ADN)

UN 2735 Amines, liquid, corrosive, n.o.s. (Triethylenetetramine, 3-Azapentan-1,5-diamine) 8 II

- Classification Code C7

- Label



Marine transport in accordance with IMDG

UN 2735 Amines, liquid, corrosive, n.o.s. (Triethylenetetramine, 3-Azapentan-1,5-diamine) 8 II

- EMS F-A, S-B

- Label



- IMDG LQ 1 I

1 I

Air transport in accordance with IATA

UN 2735 Amines, liquid, corrosive, n.o.s. (Triethylenetetramine, 3-Azapentan-1,5-diamine-mixture) 8 II

- Label



14.3 Transport hazard class(es)

See section 14.2 in accordance with UN shipping name

14.4 Packing group

See section 14.2 in accordance with UN shipping name

14.5 Environmental hazards

See section 14.2 in accordance with UN shipping name

14.6 Special precautions for user

Relevant information under section 6 to 8.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

not applicable

15 Regulatory information

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

EEC-REGULATIONS

1967/548 (1999/45); 1991/689 (2001/118); 1999/13; 2004/42; 648/2004; 1907/2006 (Reach); 1272/2008; 75/324/EEC (2008/47/EC); 453/2010/EC

TRANSPORT-REGULATIONS

DOT-Classification, ADR (2011); IMDG-Code (2011, 35. Amdt.); IATA-DGR (2012).

NATIONAL REGULATIONS (GB):

EH40/2005 Workplace exposure limits with amendments October 2007.
CHIP 3/ CHIP 4

15.2 Chemical safety assessment

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



16 Other informations

16.1 R-phrases (section 03)

R 21/22: Harmful in contact with skin and if swallowed.
 R 34: Causes burns.
 R 43: May cause sensitisation by skin contact.
 R 52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
 R 21: Harmful in contact with skin.

16.2 Hazard statements (section 03)

H302 H312 Harmful if swallowed or in contact with skin.
 H314 Causes severe skin burns and eye damage.
 H317 May cause an allergic skin reaction.
 H412 Harmful to aquatic life with long lasting effects.

16.3 Abbreviations and acronyms:

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
 RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses
 ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
 CAS = Chemical Abstracts Service
 CLP = Classification, Labelling and Packaging
 DMEL = Derived Minimum Effect Level
 DNEL = Derived No Effect Level
 EC50 = Median effective concentration
 ECB = European Chemicals Bureau
 EEC = European Economic Community
 EINECS = European Inventory of Existing Commercial Chemical Substances
 ELINCS = European List of Notified Chemical Substances
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
 IC50 = Inhibition concentration, 50%
 IMDG = International Maritime Code for Dangerous Goods
 IUCLID = International Uniform Chemical Information Database
 LC50 = Lethal concentration, 50%
 LD50 = Median lethal dose
 MARPOL = International Convention for the Prevention of Marine Pollution from Ships
 PBT = Persistent, Bioaccumulative and Toxic substance
 PNEC = Predicted No-Effect Concentration
 REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
 TLV@TWA = Threshold limit value – time-weighted average
 TLV@STEL = Threshold limit value – short-time exposure limit
 VOC = Volatile Organic Compounds
 vPvB = very Persistent and very Bioaccumulative

16.4 Other informations

Observe employment restrictions for people yes

VOC (1999/13/CE) not applicable

Modified position Section 2 been added: Does not contain any PBT or vPvB substances.

Section 4 been added: Headache

Section 5 been added: Carbon monoxide (CO)

Section 5 been added: Nitrogen oxides (NOx).

Section 10 been added: See section 7

Section 11 been added: The toxicity data listed pertaining to the ingredients are intended for those working in the medicinal professions, experts for occupational health and safety and toxicologists. The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

Section 12 been added: The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.