SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

EpoColor Hardener
Article number 20-8144-008

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

ITW Test & Measurement GmbH
In der Steele 2
40599 Düsseldorf / GERMANY
Phone 0800 707 6273
Fax 0800 707 6274
Homepage www.buehler-met.de
E-mail info.uk@buehler.com

Address enquiries to

Technical information info.uk@buehler.com

Safety Data Sheet sdb@chemiebuero.de

1.4 Emergency telephone number

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

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Acute Tox. 2: H330 Fatal if inhaled.
Skin Corr. 1B: H314 Causes severe skin burns and eye damage.
STOT SE 3: H335 May cause respiratory irritation.
Skin Sens. 1: H317 May cause an allergic skin reaction.
Resp. Sens. 1: H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Aquatic Chronic 2: H411 Toxic to aquatic life with long lasting effects.

2.2 Label elements

The product is classified and required to be labelled in accordance with EC-Directives

Hazard pictograms

Signal word DANGER

Contains: Polyamine

Triphenyl phosphite

2,2´-Iminodiethylamine

Hazard statements

H330 Fatal if inhaled.
H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.
H317 May cause an allergic skin reaction.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P260 Do not breathe vapours / spray.
P280 Wear protective gloves / protective clothing / eye protection / face protection.
P303+P361+P353 IF ON SKIN (or hair): 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.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER / doctor.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P501 Dispose of contents / container to in accordance with local / regional / national / international regulation.

2.3 Other hazards

Environmental hazards Does not contain any PBT or vPvB substances.

Other hazards none

SECTION 3: Composition / Information on ingredients

Product-type:

The product is a mixture.

Range [%]	Substance
50 - <70	Polyamine
	CAS: 28063-82-3, EINECS/ELINCS: Polymer
	GHS/CLP: Resp. Sens. 1: H334 - Skin Sens. 1: H317 - STOT SE 3: H335 - Skin Corr. 1B: H314
25 - <30	2,2´-Iminodiethylamine
	CAS: 111-40-0, EINECS/ELINCS: 203-865-4, EU-INDEX: 612-058-00-x, Reg-No.: 01-2119473793-27-xxxx
	GHS/CLP: Acute Tox. 2: H330 - Acute Tox. 4: H302 H312 - Skin Corr. 1B: H314 - Skin Sens. 1: H317 - STOT SE 3: H335
5 - 10	Triphenyl phosphite
	CAS: 101-02-0, EINECS/ELINCS: 202-908-4, EU-INDEX: 015-105-00-7
	GHS/CLP: Acute Tox. 4: H302 - Eye Irrit. 2: H319 - Skin Irrit. 2: H315 - Aquatic Chronic 1: H410 - Aquatic Acute 1: H400 - Skin Sens. 1: H317, M = 1

Comment on component parts Substances of Very High Concern - SVHC: substances are not contained or are below 0,1%.
For full text of H-statements: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information
Take off contaminated clothing and wash before reuse.

Inhalation
Ensure supply of fresh air.
Consult a doctor immediately.

Skin contact
Immediate medical treatment necessary, as untreated burns can result in slow-healing wounds.
In case of contact with skin wash off immediately with soap and water.

Eye contact
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Consult a doctor immediately.

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

Allergic reactions
Product is caustic.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

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

Extinguishing media that must not be used
Full water jet.

5.2 Special hazards arising from the substance or mixture

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 within the local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.
Use breathing apparatus if exposed to vapours/aerosol.
High risk of slipping due to leakage/spillage of product.
Use personal protective equipment (protective gloves, safety glasses, protective clothing).
Keep people away and stay on the upwind side.

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.
In case the product spills into drains/surface waters/groundwater, immediately inform the authorities.

6.3 Methods and material for containment and cleaning up

Pick up with absorbent material (e.g. sand, sawdust, universal absorbent, diatomaceous earth).
Dispose of absorbed material in accordance within the regulations.

6.4 Reference to other sections

See SECTION 8+13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Use only in well-ventilated areas.
Provide suitable vacuuming at the processing area.

Do not eat, drink, smoke or take drugs at work.
After worktime and before work breaks the affected skin areas must be thoroughly cleaned.
Use barrier skin cream.
Take off contaminated clothing and wash before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.
Prevent penetration into the ground.

Do not store together with oxidizing agents.
Do not store together with food and animal food/diet.
Do not store together with acids.

Keep container tightly closed.
Keep container in a well-ventilated place.
Keep in a cool place. Store in a dry place.
Keep under lock and key. Should only be accessible to specialists or people authorized by them.

7.3 Specific end use(s)

See product use, SECTION 1.2

SECTION 8: Exposure controls / personal protection

8.1 Control parameters

Ingredients with occupational exposure limits to be monitored (GB)

Range [%]	Substance
25 - <30	2,2´-Iminodiethylamine
	CAS: 111-40-0, EINECS/ELINCS: 203-865-4, EU-INDEX: 612-058-00-x, Reg-No.: 01-2119473793-27-xxxx
	Long-term exposure: 1 ppm, 4,3 mg/m³, Sk

8.2 Exposure controls

Additional advice on system design	Ensure adequate ventilation on workstation.
Eye protection	Safety glasses.
Hand protection	The details concerned are recommendations. Please contact the glove supplier for further information. Nitrile rubber, >480 min (EN 374).
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 handled. The resistance of this equipment to chemicals should be ascertained with the respective supplier.
Respiratory protection	Breathing apparatus in the event of high concentrations. Short term: combination filter A-P3.
Thermal hazards	none
Delimitation and monitoring of the environmental exposition	Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid
Color	yellow
Odor	characteristic
Odour threshold	No information available.
pH-value	alkaline
pH-value [1%]	No information available.
Boiling point [°C]	155 - 207
Flash point [°C]	100
Flammability (solid, gas) [°C]	not applicable
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Oxidizing properties	no
Vapour pressure/gas pressure [kPa]	No information available.
Density [g/ml]	1,0291
Bulk density [kg/m³]	not applicable
Solubility in water	partially miscible
Partition coefficient [n-octanol/water]	No information available.
Viscosity	not applicable
Relative vapour density determined in air	> 1
Evaporation speed	< 1
Melting point [°C]	No information available.
Autoignition temperature [°C]	No information available.
Decomposition temperature [°C]	No information available.

9.2 Other information

none

SECTION 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 oxidizing agents.
Reactions with acids.
Corrosive to metals.

10.4 Conditions to avoid

Strong heating.

10.5 Incompatible materials

See SECTION 10.3.

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product
ATE-mix, dermal, Rat: > 2000 mg/kg.
ATE-mix, oral, Rat: > 2000 mg/kg.
ATE-mix, inhalative, Rat: 0,26 mg/l 4h.

Range [%]	Substance
25 - <30	2,2´-Iminodiethylamine, CAS: 111-40-0
	LD50, dermal, Rabbit: 1090 mg/kg.
	LD50, oral, Rat: 1080 mg/kg.
	LC50, inhalative, Rat: > 0,07 - < 0,3 mg/l 4h.
5 - 10	Triphenyl phosphite, CAS: 101-02-0
	LD50, dermal, Rat: 2000 - 5000 mg/kg.
	LD50, oral, Rat: 1600 mg/kg.

Serious eye damage/irritation	Product is caustic.
Skin corrosion/irritation	Product is caustic.
Respiratory or skin sensitisation	Sensitizing.
Specific target organ toxicity — single exposure	May cause damage to organs through single exposure.
Specific target organ toxicity — repeated exposure	Based on available data, the classification criteria are not met.
Mutagenicity	Based on available data, the classification criteria are not met.
Reproduction toxicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.
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.

SECTION 12: Ecological information

12.1 Toxicity

Range [%]	Substance
25 - <30	2,2´-Iminodiethylamine, CAS: 111-40-0
	LC50, (96h), Leuciscus idus: 430 mg/L (IUCLID).
	EC50, (72h), Selenastrum capricornutum: 1164 mg/L (IUCLID).
	EC50, (48h), Daphnia magna: 17 mg/L (IUCLID).
5 - 10	Triphenyl phosphite, CAS: 101-02-0
	LC50, (96h), fish: 0,7 mg/l.

12.2 Persistence and degradability

Behaviour in environment compartments No information available.

Behaviour in sewage plant No information available.

Biological degradability No information available.

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

Based on all available information not to be classified as PBT or vPvB respectively.

12.6 Other adverse effects

Ecological 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 pertaining to the ingredients were supplied by the manufacturers of raw materials.

SECTION 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

SECTION 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 2922 Corrosive liquid, toxic, n.o.s. (3-azapentane-1,5-diamine, triphenyl phosphite) (ENVIRONMENTALLY HAZARDOUS) 8 & 6.1 II
- Classification Code	CT1
- Label	
- ADR LQ	1 l
- ADR 1.1.3.6 (8.6)	Transport category (tunnel restriction code) 2 (E)
Inland navigation (ADN)	UN 2922 Corrosive liquid, toxic, n.o.s. (3-azapentane-1,5-diamine, triphenyl phosphite) (ENVIRONMENTALLY HAZARDOUS) 8 & 6.1 II
- Classification Code	CT1
- Label	
Marine transport in accordance with IMDG	UN 2922 Corrosive liquid, toxic, n.o.s. (3-azapentane-1,5-diamine, triphenyl phosphite) 8 & 6.1 II MARINE POLLUTANT
- EMS	F-A, S-B
- Label	
- IMDG LQ	1 l
Air transport in accordance with IATA	UN 2922 Corrosive liquid, toxic, n.o.s. (Polyamine, 3-azapentane-1,5-diamine) 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 MARPOL and the IBC Code

not determined

SECTION 15: Regulatory information

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

EEC-REGULATIONS	1991/689 (2001/118); 1999/13; 2004/42; 648/2004; 1907/2006 (REACH); 1272/2008; 75/324/EEC (2008/47/EC); 453/2010/EC; (EU) 2015/830
TRANSPORT-REGULATIONS	DOT-Classification, ADR (2015); IMDG-Code (2015, 37. Amdt.); IATA-DGR (2015).
NATIONAL REGULATIONS (GB):	EH40/2005 Workplace exposure limits (Second edition, published December 2011). CHIP 3/ CHIP 4
- Observe employment restrictions for people	Observe employment restrictions for mothers-to-be and nursing mothers. Observe employment restrictions for young people.
- VOC (1999/13/CE)	not applicable

15.2 Chemical safety assessment

not applicable

SECTION 16: Other information

16.1 Hazard statements (SECTION 3)

H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H302 Harmful if swallowed.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H317 May cause an allergic skin reaction.
H314 Causes severe skin burns and eye damage.
H302+H312 Harmful if swallowed or in contact with skin.
H330 Fatal if inhaled.

16.2 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

16.3 Other information

Classification procedure

Acute Tox. 2: H330 Fatal if inhaled. (Calculation method)
Skin Corr. 1B: H314 Causes severe skin burns and eye damage. (Calculation method)
STOT SE 3: H335 May cause respiratory irritation. (Calculation method)
Skin Sens. 1: H317 May cause an allergic skin reaction. (Calculation method)
Resp. Sens. 1: H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. (Calculation method)
Aquatic Chronic 2: H411 Toxic to aquatic life with long lasting effects. (Calculation method)

Modified position

SECTION 2 been added: P403+P233 Store in a well-ventilated place. Keep container tightly closed.

SECTION 2 deleted: P309+P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor / physician.

SECTION 2 been added: P310 Immediately call a POISON CENTER / doctor.

SECTION 2 been added: P260 Do not breathe vapours / spray.

SECTION 9 been added: No information available.

SECTION 9 deleted: not determined

SECTION 10 been added: See SECTION 10.3.

SECTION 10 deleted: Oxidizing agent

SECTION 11 been added: Based on available data, the classification criteria are not met.

SECTION 11 deleted: not determined

SECTION 11 been added: May cause damage to organs through single exposure.

SECTION 12 been added: No information available.

SECTION 12 deleted: not determined