



SAFETY DATA SHEET

according to Regulation (EU) No. 453/2010

S&P Resin 230 Komp B

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product code None.

Synonyms None.

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

Use of the Substance/Preparation Hardener for epoxy resin.

1.3. Details of the supplier of the safety data sheet

Company/Undertaking Identification S&P Clever Reinforcement Company AG
Seewernstrasse 127
CH-6423 Seewen
Switzerland

+41 41 825 00 70 [8-17h]
info@sp-reinforcement.ch

1.4. Emergency telephone number STIZ (Tox-Zentrum) CH-Zürich : 145 / +41 44 251 51 51 [24h/7]

Issuing date 01.06.2013

Version 3

2. Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 (GHS/CLP) Skin corrosion/irritation, Cat. 1B, H314
Skin Sensitisation, Cat. 1, H317
Hazardous to the aquatic environment, chronic, Cat. 3, H412

Classification according to EU Directives 67/548/EEC or 1999/45/EC C; R34
R43
R52/53

Additional information For the full text of the phrases mentioned in this Section, see Section 16.

2.2. Label elements



Signal Word

Danger

Hazard Statements

H314: Causes severe skin burns and eye damage.
H317: May cause an allergic skin reaction.
H412: Harmful to aquatic life with long lasting effects.

Precautionary statements

P260s: Do not breathe spray.
P280c: Wear protective gloves/ eye protection/ face protection.
P303+P361+P353: IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P273: Avoid release to the environment.
P501: Dispose of contents/ container to an approved waste disposal plant.

Additional advice

None.

GHS product identifier

Poly(oxypropylene)diamine, CAS-No. 9046-10-0, EC-No. Polymer Triethylentetramine, CAS-No. 112-24-3, EC-No. 203-950-6
Piperazine, CAS-No. 110-85-0, EC-No. 203-808-3
Aminoethylpiperazine, CAS-No. 140-31-8, EC-No. 205-411-0

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



C - Corrosive.

R-phrase(s)

R34: Causes burns.
R43: May cause sensitisation by skin contact.
R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s)

S23: Do not breathe spray
S24/25: Avoid contact with skin and eyes.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.



S37/39: Wear suitable gloves and eye / face protection.
S29/35: Do not empty into drains; dispose of this material and its container in a safe way.

Additional advice Contains 2-piperazin-1-ylethylamine. May produce an allergic reaction.

Hazardous component(s) which must be listed on the label Poly(oxypropylene)diamine, CAS-No. 9046-10-0, EC-No. Polymer
Triethylentetramine, CAS-No. 112-24-3, EC-No. 203-950-6
Piperazine, CAS-No. 110-85-0, EC-No. 203-808-3

2.3. Other hazards No information available.

3. Composition/information on ingredients

Chemical characterization Adhesive.

Components		CLP Classification	DSD/DPD Classification	Product identifier
Poly(oxypropylene)diamine	15% - 20%	Asp. Tox. 1 H304, Skin Corr. 1C H314, Eye Dam. 1 H318, Aquatic Chronic 3 H412	C; R-34-52/53	CAS-No.: 9046-10-0 EC-No.: Polymer
Triethylentetramine	15% - 20%	Acute Tox. 4 H312, Skin Corr. 1B H314, Skin Sens. 1 H317, Aquatic Chronic 3 H412	C; R-21-34-43-52/53 [C >= 25 % \ C; R-21-34-43-52/53 ! 10 % <= C < 25 % \ C; R-34-43 ! 5 % <= C < 10 % \ Xi; R-36/38-43 ! 1 % <= C < 5 % \ Xi; R-43]	CAS-No.: 112-24-3 EC-No.: 203-950-6 Index-No: 612-059-00-5
Piperazine	2.5% - 5%	Repr. 2 H361 (fd), Skin Corr. 1B H314, Resp. Sens. 1 H334, Skin Sens. 1 H317	Xn,C; R-34-42/43-62-63	CAS-No.: 110-85-0 EC-No.: 203-808-3 Index-No: 612-057-00-4
Aminoethylpiperazine	0.1% - 1%	Acute Tox. 4 H312, Acute Tox. 4 H302, Skin Corr. 1B H314, Skin Sens. 1 H317, Aquatic Chronic 3 H412	C; R-21/22-34-43-52/53	CAS-No.: 140-31-8 EC-No.: 205-411-0 Index-No: 612-105-00-4

For the full text of the phrases mentioned in this Section, see Section 16.

Hazardous impurities None known.

4. First aid measures

4.1. Description of first aid measures

Inhalation Move to fresh air. Consult a physician for severe cases.

Skin contact Wash off immediately with soap and plenty of water.

Eye contact Rinse immediately with plenty of water, also under the eyelids. If easy to do, remove contact lens, if worn. Protect unharmed eye. Consult an ophthalmologist.

Ingestion Rinse mouth. Do not induce vomiting without medical advice.

4.2. Most important symptoms and effects, both acute and delayed Causes severe burns. If you feel unwell, seek medical advice (show the label where possible). Allergic appearance



4.3. Indication of any immediate medical attention and special treatment needed None known.

5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Use dry chemical, CO₂, water spray or alcohol foam.

Extinguishing media which must not be used for safety reasons No extinguishing agent constraints.

5.2. Special hazards arising from the substance or mixture The product itself does not burn. Hazardous decomposition products formed under fire conditions. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

5.3. Advice for firefighters

Special protective equipment for firefighters Standard procedure for chemical fires.

Specific methods Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Do not use a solid water stream as it may scatter and spread fire.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel Use personal protective equipment. Avoid contact with skin and eyes. Do not breathe vapours/aerosol.

Advice for emergency responders Use personal protective equipment. Avoid contact with skin and eyes.

6.2. Environmental precautions Prevent product from entering drains.

6.3. Methods and material for containment and cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable and closed containers for disposal. Clean contaminated surface thoroughly.

6.4. Reference to other sections See chapter 8 and 13.

7. Handling and storage

7.1. Precautions for safe handling Plan first aid action before beginning work with this product. Wear personal protective equipment. Avoid contact with skin and eyes.

7.2. Conditions for safe storage, including any incompatibilities Keep out of reach of children. Store in a place accessible by authorized persons only. Store in original container. Keep tightly closed in a dry and cool place. Shelf life up to 2 years from date of manufacture.

7.3. Specific end use(s) Use only in accordance with our recommendations.

8. Exposure controls/personal protection

8.1. Control parameters

Exposure limit(s) No data is available on the product itself.

Piperazine (CAS 110-85-0)

EU - Occupational Exposure 0.1 mg/m³ TWA

(2000/39/EC) - First List of Indicative Occupational Exposure Limit Values - TWAs

EU - Occupational Exposure 0.3 mg/m³ STEL

(2000/39/EC) - First List of Indicative Occupational Exposure Limit Values - STELs

United Kingdom - Workplace 0.3 mg/m³ STEL

Exposure Limits (WELs) - STELs

United Kingdom - Workplace 0.1 mg/m³ TWA

Exposure Limits (WELs) - TWAs

8.2. Exposure controls

Occupational exposure controls General industrial hygiene practice. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing.

Personal protection equipment

Respiratory protection No personal respiratory protective equipment normally required. Breathing apparatus needed only when aerosol or mist is formed. Respirator with A/P2 filters.

Hand protection Protective gloves complying with EN 374. Gloves made of Nitril. Break through time: > 4 h.

Eye protection Safety glasses with side-shields conforming to EN 166. Eye wash bottle with pure water.

Skin and body protection Long sleeved clothing. Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Thermal hazards Do not heat the product.

Environmental exposure control Prevent product from entering surface water or sewage.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form Viscous.
Colour Black.
Odour Amine-like.
Odour Threshold No information available.
pH: alkaline
Melting point/range: No information available.
Boiling point/range: No information available.
Flash point: does not flash
Evaporation Rate: No information available.



Flammability:	No information available.
Explosion limits:	No information available.
Vapour pressure:	No information available.
Vapor density:	No information available.
Relative density:	Ein Aufrufziel hat einen Ausnahmefehler verursacht.
Water solubility:	partly soluble
Partition coefficient (n-octanol/water):	No information available.
Autoignition temperature:	No information available.
Decomposition temperature:	No information available.
Viscosity:	(kinemat.) >20.5 mm ² /s [40°C]
Combustion/explosion hazards:	not hazardous
Oxidizing properties:	None

9.2. Other information

General Product Characteristics	No information available.
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10. Stability and reactivity

10.1. Reactivity	No hazards to be specially mentioned.
10.2. Chemical stability	Stable at normal conditions.
10.3. Possibility of hazardous reactions	No hazards to be specially mentioned.
10.4. Conditions to avoid	Avoid temperatures above 60°C, direct sunlight and contact with sources of heat. Burning produces obnoxious and toxic fumes.
10.5. Incompatible materials	Keep away from oxidising agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.
10.6. Hazardous decomposition products	None under normal use.

11. Toxicological information

11.1. Information on toxicological effects

Acute toxicity	No data is available on the product itself. Poly(oxypropylene)diamine (CAS 9046-10-0) LD50/oral/rat = 2880 mg/kg. LD50/dermal/rabbit = 2980 mg/kg. Triethylenetetramine (CAS 112-24-3) Dermal LD50 Rabbit = 550 mg/kg (IUCLID) Oral LD50 Rat = 2500 mg/kg (IUCLID) Piperazine (CAS 110-85-0) Dermal LD50 Rabbit = 4 mL/kg (NLM_CIP) Oral LD50 Rat = 1900 mg/kg (IUCLID) 1-(2-Aminoethyl) piperazine (CAS 140-31-8) Dermal LD50 Rabbit = 880 µL/kg (NLM_CIP) Oral LD50 Rat = 2140 mg/kg (IUCLID)
Skin corrosion/irritation	Causes severe burns.
Serious eye damage/eye irritation	Corrosive.



Respiratory / Skin Sensitisation	Causes sensitization. May cause allergic skin reaction.
Carcinogenicity	Contains no ingredient listed as a carcinogen.
Germ cell mutagenicity	Contains no ingredient listed as a mutagen.
Reproductive toxicity	Contains no ingredient listed as toxic to reproduction.
Specific target organ toxicity (single exposure)	No data available.
Specific target organ toxicity (repeated exposure)	No data available.
Aspiration hazard	Due to the viscosity, this product does not present an aspiration hazard.
Human experience	No data is available on the product itself.
Symptoms related to the physical, chemical and toxicological characteristics	Causes severe burns.

12. Ecological information

12.1. Toxicity No data is available on the product itself.

Triethylenetetramine (CAS 112-24-3)

Ecotoxicity - Freshwater Fish - Acute Toxicity Data	96 h LC50 Poecilia reticulata: 570 mg/L [semi-static] 96 h LC50 Pimephales promelas: 495 mg/L
Ecotoxicity - Water Flea - Acute Toxicity Data	48 h EC50 Daphnia magna: 31.1 mg/L
Ecotoxicity - Freshwater Algae - Acute Toxicity Data	72 h EC50 Desmodesmus subspicatus: 2.5 mg/L 72 h EC50 Pseudokirchneriella subcapitata: 20 mg/L 96 h EC50 Pseudokirchneriella subcapitata: 3.7 mg/L

Piperazine (CAS 110-85-0)

Ecotoxicity - Freshwater Fish - Acute Toxicity Data	96 h LC50 Lepomis macrochirus: >10000 mg/L [static]
Ecotoxicity - Water Flea - Acute Toxicity Data	96 h EC50 water flea: 6915 mg/L

1-(2-Aminoethyl) piperazine (CAS 140-31-8)

Ecotoxicity - Freshwater Fish - Acute Toxicity Data	96 h LC50 Pimephales promelas: 1950 - 2460 mg/L [flow-through] 96 h LC50 Poecilia reticulata: >1000 mg/L [semi-static] 96 h LC50 Oncorhynchus mykiss: >=100 mg/L [semi-static]
Ecotoxicity - Water Flea - Acute Toxicity Data	48 h EC50 Daphnia magna: 32 mg/L
Ecotoxicity - Freshwater Algae - Acute Toxicity Data	72 h EC50 Pseudokirchneriella subcapitata: 495 mg/L

12.2. Persistence and degradability No data is available on the product itself.

12.3. Bioaccumulative potential No data is available on the product itself.

12.4. Mobility in soil No data is available on the product itself.

12.5. Results of PBT and vPvB assessment This preparation contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).



12.6. Other adverse effects

Water contaminating (self-estimation).

13. Disposal considerations

13.1. Waste treatment methods

Waste from residues / unused products

Do not put residues of product into household waste. It should be given in the original package to the official waste disposal authorities. Do not empty into drains. Product rest to be treated as hazardous waste. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. European Waste catalogue code (EWC-code): 08 04 09.

Contaminated packaging

Dispose of as unused product. Empty packaging should be taken for local recycling, recovery or waste disposal.

14. Transport information

ADR/RID

Proper shipping name POLYAMINES, LIQUID, CORROSIVE, N.O.S. (Poly(oxypropylene)diamine, Triethylentetramine)
UN No 2735.
Class 8.
Packing group II.
ADR/RID-Labels 8.
Classification code C7.
Risk No. 80.
Limited quantity 1 L.
Tunnel code E

IMDG

Proper shipping name Polyamines, liquid, corrosive, n.o.s. (Poly(oxypropylene)diamine, Triethylentetramine)
UN No 2735.
Class 8.
Packing group II.
IMDG-Labels 8.
Limited quantity 1 L.
EmS F-E, S-B.
Marine Pollutant no

IATA

Proper shipping name Polyamines, liquid, corrosive, n.o.s. (Poly(oxypropylene)diamine, Triethylentetramine)
UN No 2735.
Class 8.
IATA label 8.
Packing group II.
Packing instruction (passenger aircraft): 851 (1 L).
Packing instruction (LQ): Y840 (0.5 L).
Packing instruction (cargo aircraft): 855 (30 L).

Inland navigation ADN

Proper shipping name POLYAMINES, LIQUID, CORROSIVE, N.O.S. (Poly(oxypropylene)diamine, Triethylentetramine)
UN No 2735.
Class 8.
Packing group II.
ADN labels 8.
ADN danger 8+(N1, N2, N3, CMR, F oder S).

Further Information

None.

15. Regulatory information

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

Regulatory Information The product is classified and labelled according to Regulation (EC) No. 1272/2008 (GHS/CLP).
Take note of Dir 94/33/EC on the protection of young people at work.

Propylene glycol diamine, 2-amino-, diether with Propylene (CAS 9046-10-0)

EU - REACH (1907/2006) - List of Registered Substances Present

Piperazine (CAS 110-85-0)

EU - REACH (1907/2006) - List of Registered Substances Present

1-(2-Aminoethyl) piperazine (CAS 140-31-8)

EU - REACH (1907/2006) - List of Registered Substances Present

15.2. Chemical safety assessment Not required.

16. Other information

Revision Note General update.

Key or legend to abbreviations and acronyms CLP: Classification according to Regulation (EC) No. 1272/2008 (GHS/CLP)
DSD/DPD: Classification according to EU Directives 67/548/EEC or 1999/45/EC
MAK: Maximale Arbeitsplatzkonzentration.
STEL: Short Term Exposure Limit
TWA: time weighted average
VOC: Volatile organic compounds (VOC) content

Key literature references and sources for data Information taken from reference works and the literature.

Classification procedure Calculation method.

Full text of phrases referred to under sections 2 and 3

H302: Harmful if swallowed.
H304: May be fatal if swallowed and enters airways.
H312: Harmful in contact with skin.
H314: Causes severe skin burns and eye damage.
H317: May cause an allergic skin reaction.
H318: Causes serious eye damage.
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H361: Suspected of damaging fertility or the unborn child.
H361f: Suspected of damaging fertility.
H361fd: Suspected of damaging fertility. Suspected of damaging the unborn child.
H412: Harmful to aquatic life with long lasting effects.

R21: Harmful in contact with skin.
R34: Causes burns.
R42/43: May cause sensitisation by inhalation and skin contact.
R43: May cause sensitisation by skin contact.
R52/53: Harmful to aquatic organisms may cause long-term adverse effects in the aquatic environment.
R62: Possible risk of impaired fertility.



R63: Possible risk of harm to the unborn child.

Training advice

For further information, refer to the product technical data sheet.

Further information

Take notice of the directions of use on the label.

Instructions for use

See product description. Restricted to professional users. Attention
- Avoid exposure - obtain special instructions before use. Keep
away from children.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release. It is not to be considered a warranty or quality specification.