

Safety Data Sheet
according to HPR, Schedule 1

Date of issue 01/19/2026

Version number 1

Revision: 08/21/2025

1 Identification

- **Product identifier**
- **Trade name: X280-B**
- **Other means of identification**
- **Application of the substance / the mixture** Hardening agent/ Curing agent
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Hottinger Brüel & Kjaer GmbH
Im Tiefen See 45
D-64293 Darmstadt
Germany
Tel: +49 6151 803 0
E-Mail: info@hbkworld.com
<https://www.hbkworld.com>
- **Information department:**
Tel. +49(0)6131 19240
EMail support-esa@hbkworld.com
- **Emergency telephone number:**
Canada:
+1 800 332 1414 (Alberta, NW Territories);
+1 866 454 1212 (Saskatchewan);
+1 403 944 1414 (Calgary, outside Alberta, VOIP users)
Poison and Drug Information Services
Foothills Medical Centre
1403 29th Street N.W.
T2N 2T9 Calgary

National Capital Poison Center, U.S.A.:
1-800-222-1222
3201 New Mexico Ave Ste 310
20016 Washington, DC
USA
CHEMTREC: +1 703-741-5970 (24h emergency call).
Outside continental USA please call CHEMTREC at +1-703-527-3887 (R-calls are accepted).

2 Hazard identification

- **Classification of the substance or mixture**



GHS08 Health hazard

Germ Cell Mutagenicity - Category 2

Reproductive Toxicity - Category 1B

Specific target organ toxicity (repeated exposure) – Category 2

H341 Suspected of causing genetic defects.

H360 May damage fertility or the unborn child.

H373 May cause damage to the central nervous system, the kidneys, the liver and the skin through prolonged or repeated exposure.

(Contd. on page 2)

Safety Data Sheet

according to HPR, Schedule 1

Date of issue 01/19/2026

Version number 1

Revision: 08/21/2025

Trade name: X280-B

(Contd. of page 1)



GHS05 Corrosion

Skin Corrosion - Category 1B

H314 Causes severe skin burns and eye damage.

Eye damage/irritation – Category 1

H318 Causes serious eye damage.



GHS07

Sensitization - skin – Category 1

H317 May cause an allergic skin reaction.

- **Label elements**

- **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**



GHS05 GHS07 GHS08

- **Signal word Danger**

- **Hazard-determining components of labeling:**

3,6-Diazaoctanethylenediamine

Imidazole

Phenol

- **Hazard statements**

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H341 Suspected of causing genetic defects.

H360 May damage fertility or the unborn child.

H373 May cause damage to the central nervous system, the kidneys, the liver and the skin through prolonged or repeated exposure.

- **Precautionary statements**

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or 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.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Additional information:**

Please refer to additional labeling elements in Section 15 of this Safety Data Sheet, if applicable.

CA

(Contd. on page 3)

Safety Data Sheet

according to HPR, Schedule 1

Date of issue 01/19/2026

Version number 1

Revision: 08/21/2025

Trade name: X280-B

(Contd. of page 2)

3 Composition/Information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below, possibly with undeclared additives.

- **Dangerous components:**

CAS: 112-24-3 RTECS: YE6650000	3,6-Diazaoctanethylenediamine	10 - 30% w/w *
CAS: 288-32-4 RTECS: NI 3325000	Imidazole	5 - 10% w/w *
CAS: 108-95-2 RTECS: SJ 3325000	Phenol	1% w/w

* Actual concentration ranges are withheld as a trade secret.

4 First-aid measures

- **Description of first aid measures**
- **General information:**
Immediately remove any clothing contaminated by the product.
If symptoms occur or in case of doubt consult a doctor.
Personal protection for the First Aider.
- **After inhalation:**
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
Remove contaminated clothing immediately.
In case of permanent aches and pains please go and see the doctor.
- **After eye contact:**
Rinse opened eye for several minutes under running water. Then consult a doctor.
Remove contact lenses if possible.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; immediately call for medical help.
- **Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
Use fire fighting measures that suit the environment.
Alcohol-resistant foam, extinguishing powder or carbon dioxide. Fight larger fire with water spray.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture**
Inhalation of combustion gases may cause serious health hazards.
In case of fire, the following can be released:
Carbon monoxide and carbon dioxide
Nitrogen oxides (NOx)

(Contd. on page 4)

CA

Safety Data Sheet

according to HPR, Schedule 1

Date of issue 01/19/2026

Version number 1

Revision: 08/21/2025

Trade name: X280-B

(Contd. of page 3)

- **Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.
- **Additional information** Remove goods in stock from incendiary zone, if possible.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **For non-emergency personnel** Avoid contact with the product.
- **For emergency responders** Put on suitable personal protective equipment.
- **Environmental precautions:** Do not allow to enter drainage system, ground/soil and water bodies.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralizing agent.
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
Keep respiratory protective device available.
- **Handling:**
Do not eat, drink, smoke or sniff while working.
Avoid direct contact with eyes, skin and clothing.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash contaminated clothing before re-use.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Store container tightly sealed at a cool place.
- **Information about storage in one common storage facility:** Not required
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/ Personal protection

- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
TLV: Threshold Limit Value

(Contd. on page 5)

-CA

Safety Data Sheet

according to HPR, Schedule 1

Date of issue 01/19/2026

Version number 1

Revision: 08/21/2025

Trade name: X280-B

(Contd. of page 4)

112-24-3 3,6-Diazaoctanethylenediamine

EV	TWA: 3 mg/m ³ , 0.5 ppm
	Skin

108-95-2 Phenol

EL	TWA: 5 ppm
	Skin

EV	TWA: 19 mg/m ³ , 5 ppm
	Skin

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing.
- Wash hands before breaks and at the end of work.
- Avoid direct contact with eyes, skin and clothing.
- Do not eat, drink, smoke or sniff while working.
- Wash contaminated clothing before re-use.

· **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**



Protective gloves

Only use chemical-protective gloves with CE-labeling of category III.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Butyl rubber, BR

Recommended material thickness: 0.3 mm, breakthrough time: 480 min.

Nitrile rubber, NBR

Recommended material thickness: 0.33 mm, breakthrough time: 30 min.

· **Penetration time of glove material**

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

(Contd. on page 6)

CA

Safety Data Sheet

according to HPR, Schedule 1

Date of issue 01/19/2026

Version number 1

Revision: 08/21/2025

Trade name: X280-B

(Contd. of page 5)

· **Eye protection:**

Safety goggles according to EN 166.



Face protection

· **Body protection:**

Protective work clothing

9 Physical and chemical properties

· **Information on basic physical and chemical properties**· **General Information**

· Physical state	Liquid
· Color:	Light brown
· Odor:	Phenol-like
· Odor threshold:	Not determined
· Melting point/Melting range:	Undetermined
· Boiling point/Boiling range:	107 °C
· Flammability:	Not applicable
· Explosion limits:	
· Lower:	0.1 Vol %
· Upper:	15 Vol %
· Flash point:	135 °C
· Auto igniting:	300 °C
· Decomposition temperature:	Not determined
· SADT	
· pH-value:	Not determined
· Viscosity:	
· Kinematic:	Not determined
· Dynamic:	Not determined
· Solubility in / Miscibility with	
· Water:	Fully miscible.
· Segregation coefficient (n-octanol/water):	Not determined
· Vapor pressure at 20 °C:	0 hPa
· Density at 20 °C:	1.1 g/cm ³
· Relative density	Not determined
· Vapor density	Not determined
· Particle characteristics	No further details.

· **Other information**· **Appearance:**· **Form:** Fluid

(Contd. on page 7)

-CA

Safety Data Sheet

according to HPR, Schedule 1

Date of issue 01/19/2026

Version number 1

Revision: 08/21/2025

Trade name: X280-B

(Contd. of page 6)

- **Important information on protection of health and environment, and on safety.**
- **Ignition temperature:** Product is not selfigniting.
- **Danger of explosion:** Product does not present an explosion hazard.
- **VOC USA**
- **Solids content:** 0.4 %
- **Change in condition**
- **Evaporation rate** Not determined

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:**
None in case of intended use and storage in compliance with instructions.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimate)

Oral	LD50	2,875 - 6,155 mg/kg
Dermal	LD50	5,589 - 12,855 mg/kg
Inhalative	LC50	50 - 278 mg/l/4h

112-24-3 3,6-Diazaoctanethylenediamine

Oral	LD50	1,861.9 mg/kg (Rat) (OECD 401)
Dermal	LD50	1,465.4 mg/kg (Rabbit) (OECD 402)

108-95-2 Phenol

Oral	LD50	530 mg/kg (Rat) (OECD 401)
Dermal	LD50	660 mg/kg (Rat) (OECD 402)

- **Primary irritant effect:**
- **on the skin:** Strong caustic effect on skin and mucous membranes.
- **on the eye:**
Strong caustic effect.
Strong irritant with the danger of severe eye injury.
- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Corrosive

(Contd. on page 8)

CA

Safety Data Sheet

according to HPR, Schedule 1

Date of issue 01/19/2026

Version number 1

Revision: 08/21/2025

Trade name: X280-B

(Contd. of page 7)

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

108-95-2	Phenol	3
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- **NTP (National Toxicology Program)**

None of the ingredients is listed.

12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

108-95-2 Phenol

EC50 (static)	3.1 mg/l/48h (Ceriodaphnia dubia) (US EPA)
EC50 (static)	61.1 mg/l/96h (Raphidocelis subcapitata) (US EPA)
LC50 (dynamic)	8.9 mg/l/96h (Oncorhynchus mykiss) (US EPA)

- **Persistence and degradability** No further relevant information available.

- **Other information:** There are no data available about the preparation.

- **Bioaccumulative potential** No further relevant information available.

- **Mobility in soil** No further relevant information available.

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable

- **vPvB:** Not applicable

- **Other adverse effects**

- **Additional ecological information:**

- **General notes:**

Do not allow product to reach ground water, water course or sewage system.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

Danger to drinking water if even small quantities leak into the ground.

13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- **Uncleaned packagings:**

- **Recommendation:**

Dispose of packaging according to regulations on the disposal of packagings.

Non contaminated packagings can be used for recycling.

Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

CA

(Contd. on page 9)

Safety Data Sheet

according to HPR, Schedule 1

Date of issue 01/19/2026




Version number 1

Revision: 08/21/2025

Trade name: X280-B

(Contd. of page 8)

14 Transport information

<ul style="list-style-type: none"> · UN-Number · DOT/TDG, ADR, IMDG, IATA 	UN3267
<ul style="list-style-type: none"> · UN proper shipping name · DOT/TDG · ADR · IMDG, IATA 	Corrosive liquid, basic, organic, n.o.s. 3267 Corrosive liquid, basic, organic, n.o.s. CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (TRIETHYLENETETRAMINE)
<ul style="list-style-type: none"> · Transport hazard class(es) · DOT/TDG (Transport dangerous goods): 	
	
<ul style="list-style-type: none"> · Class · Label 	8 Corrosive substances No hazardous good 8
<ul style="list-style-type: none"> · ADR 	
	
<ul style="list-style-type: none"> · Class · Label 	8 (C7) Corrosive substances 8
<ul style="list-style-type: none"> · IMDG, IATA 	
	
<ul style="list-style-type: none"> · Class · Label 	8 Corrosive substances 8
<ul style="list-style-type: none"> · Packing group · DOT/TDG, ADR, IMDG, IATA 	III
<ul style="list-style-type: none"> · Environmental hazards: 	Not applicable
<ul style="list-style-type: none"> · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	Not applicable
<ul style="list-style-type: none"> · Transport/Additional information: · DOT/TDG · Quantity limitations 	On passenger aircraft/rail: 5 L On cargo aircraft only: 60 L
<ul style="list-style-type: none"> · ADR · Excepted quantities (EQ) 	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

(Contd. on page 10)

CA

Safety Data Sheet

according to HPR, Schedule 1

Date of issue 01/19/2026

Version number 1

Revision: 08/21/2025

Trade name: X280-B

(Contd. of page 9)

· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· Special precautions for user	Warning: Corrosive substances
· Hazard identification number (Kemler code):	80
· EMS Number:	F-A,S-B
· Segregation groups	(SGG18) Alkalis
· Stowage Category	A
· Stowage Code	SW2 Clear of living quarters.
· Segregation Code	SG35 Stow "separated from" SGG1-acids
· UN "Model Regulation":	UN 3267 CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. 8, III

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.
- **Sara**

- **Section 355 (extremely hazardous substances):**

108-95-2 Phenol

- **Section 313 (Specific toxic chemical listings):**

108-95-2 Phenol

- **TSCA (Toxic Substances Control Act):**

All components have the value ACTIVE.

- **Canadian substance listings:**

- **Canadian Domestic Substances List (DSL)**

All ingredients are listed.

- **Canadian Non-Domestic Substances List (NDSL)**

None of the ingredients is listed.

- **Canadian Ingredient Disclosure list (limit 0.1%)**

112-24-3 3,6-Diazaoctanethylenediamine

- **Canadian Ingredient Disclosure list (limit 1%)**

108-95-2 Phenol

- **Per- and polyfluoroalkyl substances (PFAS)**

None of the ingredients is listed.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

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

(Contd. on page 11)

CA

Safety Data Sheet

according to HPR, Schedule 1

Date of issue 01/19/2026

Version number 1

Revision: 08/21/2025

Trade name: X280-B

(Contd. of page 10)

· Department issuing SDS:

*This Safety Data Sheet has been drawn up in cooperation with:
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· Kit-Components:**· Date of preparation 01/19/2026****· Abbreviations and acronyms:***IMDG: International Maritime Code for Dangerous Goods**DOT: US Department of Transportation**IATA: International Air Transport Association**EINECS: European Inventory of Existing Commercial Chemical Substances**ELINCS: European List of Notified Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**LC50: Lethal concentration, 50 percent**LD50: Lethal dose, 50 percent**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative***· * Data compared to the previous version altered.**

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