TERMO HARDENER FOR EPOXY PUTTY

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY/UNDERTAKING

1.1. Product identifier
TERMO HARDENER FOR EPOXY PUTTY

1.2. Relevant identified uses of the substance or mixture and uses advised against
The hardener (component B) for TERMO Epoxy putty. For professional use in powder paint shop.

1.3. Data of the supplier Safety Data Sheet

NOVOL Sp. z o.o.
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www.novol.pl
novol@novol.pl
Person responsible for the Safety Data Sheet dokumentacja@novol.pl

1.4. Emergency telephone number +48 61 810-99-09 (from 7.00 to 15.00)

SECTION 2: HAZARD IDENTIFICATION

2.1. Classification of the substance or mixture
The mixture was classified as dangerous pursuant to current regulations - see section 15.

Classification acc. to 1272/2008/WE:
Serious eye damage/eye irritation, Hazard Category 1 (Eye Dam. 1). Causes serious eye damage.
Irritating effect on skin, category 2 (Skin Irrit.2). Causes skin irritation.
Sensitisation — Skin, category 1 (Skin Sens. 1). May cause an allergic skin reaction.
Germ cell mutagenicity, Hazard Category 2 (Muta. 2). Suspected of causing genetic defects.
Specific target organ toxicity — Repeated exposure, Hazard Category 2 (STOT RE 2). May cause damage to organs through prolonged or repeated exposure.
Hazardous to the aquatic environment — Chronic Hazard, Category 3 (Aquatic Chronic 3). Harmful to aquatic life with long lasting effects.

2.2. Label elements:

Contains: Triethylenetetramine

Pictograms:

Signal word: Danger.

H318	Causes serious eye damage.
H317	May cause an allergic skin reaction.
H315	Causes skin irritation.
H341	Suspected of causing genetic defects.
H373	May cause damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.
P201	Obtain special instructions before use.
P260	Do not breathe vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P271	Use only outdoors or in a well-ventilated area.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a doctor if you feel unwell.

2.3. Other hazards
No data.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances
Not applicable.
3.2. Mixtures

Product identification TERMO HARDENER FOR EPOXY PUTTY

Substance name	Identification numbers	Classification and marking	Concentration [wt%]
Formaldehyde, oligomeric reaction products with phenol and triethylenetetramine	WE: 500-083-8 CAS: 32610-77-8 Index no: Registration no --	Muta. 2; H341 Acute Tox. 4; H302 Acute Tox. 4; H312 Acute Tox. 4; H332 Eye Dam.1; H318 Skin Sens. 1; H317 STOT RE 2; H373 Skin Irrit.2; H315 Aquatic Chronic 3; H412	30-40

The full text of the hazard statements (H) is provided in Section 16.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures
General information:
See section 11 of the Safety Data Sheet.

Inhalation:
Take the victim outside into fresh air, ensure quiet surrounding; in case of no breath, apply artificial respiration. Call a doctor.

Skin:
Take off contaminated clothing. Rinse contaminated skin with plenty of lukewarm water for about 15 minutes. If irritation persists, consult a doctor.

Eyes:
Rinse immediately with plenty of lukewarm water for about 15 minutes, avoid strong water jet-risk of cornea damage, consult a doctor.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures
Alimentary tract:
Do not provoke vomiting (choking risk). Rinse mouth with water. If the injured is conscious, give 1-2 glasses of warm water to drink. Seek medical attention. Call a doctor.
Person giving first aid should wear medical gloves.

4.2. Most important symptoms and effects, both acute and delayed
Causes burns. Repeated exposure might cause skin dryness or rupture. May cause sensitization by skin contact

4.3. Indications of any immediate medical attention and special treatment needed
Special measures allowing for specialist and immediate aid should be available in the place of work.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media
Powder, foam resistant to alcohols, carbon dioxide, water mist.

5.2. Special hazards arising from the substance or mixture
Fire may cause generation of carbon dioxide and other toxic gases. Prevent leakage to the soil, surface waters, underground waters.

5.3. Advice for firefighters
Fire-fighting teams should wear self-contained breathing apparatus and light protective clothing. Cool adjacent tanks by spraying water at a safe distance.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures
For persons not being the members of aid giving staff:
Eliminate sources of ignition. Ensure sufficient ventilation of the room. Avoid direct contact with the released substance. Avoid contact with skin and eyes. Personal protection measures - section 8 of the Safety Data Sheet.

For persons giving aid:
Persons giving aid should wear protective clothing made of coated, impregnated fabric, protective gloves (viton), tight protective glasses and breathing apparatus: gas mask with A type absorber.

6.2. Environmental precautions
Prevent leakage to the sewage system, surface waters, underground waters and soil.

6.3. Methods and materials for containment and cleaning up
Stop the leakage (close the liquid inflow, seal), place damaged container in an emergency container, remove the liquid mechanically and place it in an emergency container. In case of large leakage, embank the area. In case of small amounts, collect with the use of a binding agent (e.g. mica, diatomaceous earth, sand).

6.4. Reference to other sections
Personal protection measures - see section 8 of the Safety Data Sheet.
Disposal considerations - see section 13 of the Safety Data Sheet.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling
Keep away from heat and fire sources. Prevent leakage to the sewage system, surface waters, underground waters and soil. Use in well ventilated rooms. Do not smoke. Do not inhale fumes. Avoid contact with skin and eyes. Take precaution measures against electrostatic discharge. Use personal protection measures - section 8 of the Safety Data Sheet.

7.2. Conditions for safe storage, including any incompatibilities
Store in tightly sealed, original containers, in well ventilated rooms, in temperatures not exceeding +30℃. Do not store near strong oxidants, acids and bases.

7.3. Special end use(s)
Hardener (component B) for TERMO Epoxy putty. For professional use into consideration the information included in subsections 7.1 and 7.2.

SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

8.1. Control parameters
Phenol CAS 108-95-2 according to:

- *TRGS 900:* MAK: 2ppm, MAK: 8 mg/m^3,2(II) EU, H
- Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)]: TWA 1 ppm, 4mg/m³ Sk, A

8.2. Exposure control
Respiratory tract protection:
Gas mask with A type absorber (EN 141).

Hand protection:
Protective gloves PN-EN 374-3 (viton, 0.7 mm thick, penetration time > 480 min, nitryl rubber, thickness >0,4 mm penetration time > 30 min)

Eye protection:
Tight protective glasses.

Skin protection:
Proper protective clothing (coated impregnated fabrics).

Workplace:
Fixed fume extraction and general ventilation.

Environmental exposure control:
Prevent leakage to the sewage system, surface waters, underground waters and soil.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	liquid
Colour	yellow
Odour	Characteristic, amine's odour
Odour threshold	No data
pH	not applicable
Melting/freezing point	No data
Boiling point	>200℃
Flash point	>100℃
Autoignition point	> 350℃
Breakdown point	not specified
Evaporation rate	not specified
Flammability (solid, gas)	not applicable
Explosion limits	% bottom: 1.8 vol%
Vapour pressure	No data
Vapour density (with regard to air)	No data
Density	about 1.86 g/cm^3 (20℃)
Solubility (in water)	Poorly soluble
N-octanol/water division ratio	No data
Viscosity	130 000 mPas
Explosive properties	not applicable
Oxidizing properties	not applicable

9.2. Other information
No data

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity
The product is not reactive under normal conditions.

10.2. Chemical stability
The product remains stable under normal conditions.

10.3. Possibility of hazardous reactions
Ethyldiamine, other amines, ammonia, toxic and corrosive gases are generated as a result of thermal decomposition.

10.4. Conditions to be avoided
Avoid contact with strongly oxidizing agents, peroxides, strong acids and bases. Avoid generation and accumulation of static electricity. Protect from the influence of sunrays and heat sources.

10.5. Incompatible materials
Avoid contact with large amounts of organic peroxides, strong acids and bases as well as other strong oxidants.

10.6. Hazardous decomposition products
Toxic and corrosive gases are generated as a result of thermal decomposition.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects
No experimental data available on the preparation. Evaluation was performed based on the data on dangerous ingredients included in the preparation.
a) Acute toxicity

Triethylenetetramine	LD_{50} (rabbit, skin)	550-805 mg/kg
	LD_{50} (rat, oral)	2500-4300 mg/kg
Phenol	LD_{50} (rat, skin)	669 mg/kg
	$LD_{50\ (4h}$(mouse, oral)	300 mg/kg

b) skin corrosion/irritation
Causes skin irritation.

c) serious eye damage/irritation
Causes serious eye damage.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects
d) respiratory or skin sensitisation
May cause an allergic skin reaction.

e) germ cell mutagenicity
Suspected of causing genetic defects.

f) carcinogenicity
The mixture has not been classified as cancerogenic. No available data confirming the hazard class.

g) reproductive toxicity
Suspected of damaging fertility. Suspected of damaging the unborn child.

h) STOT-single exposure
May cause drowsiness or dizziness.

i) STOT- repeated exposure
May cause damage to organs through prolonged or repeated exposure.

j) aspiration hazard
No available data confirming the hazard class.

Exposure methods:
Inhalation: . May cause irritating effect.
Skin: Harmful in contact with the skin. May cause sensitization by skin contact. Causes burns. Irritating for skin.
Eyes: May cause irritating effect.
If swallowed, the substance may cause irritation of the alimentary tract, nausea, vomiting and diarrhoea.

Poisoning symptoms:
Headache and vertigo, fatigue, decreased muscle power, drowsiness and, in exceptional instances, loss of consciousness. Fumes might cause drowsiness and vertigo. Repeated exposure might cause skin dryness or rupture.

SECTION 12: ECOLOGICAL INFORMATION

No experimental data available on the preparation. Evaluation was performed based on the data on dangerous ingredients included in the preparation.

12.1. Toxicity

Triethylenetetramine	Daphnia magna /EC50 (48h.)	>31 mg/dm^3
Phenol	Daphnia magna /EC50 (48h.)	>10 mg/dm^3

12.2. Persistence and degradability No data

12.3. Bioaccumulative potential No data

12.4. Mobility in soil
Product very poorly soluble in water. Keep away from sewage system, surface waters, underground waters and soil.

12.5. Results of PBT and vPvB assessment
No available data.

12.6. Other adverse effects
Harmful to aquatic life with long lasting effects.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods
The product must be disposed of in compliance with proper local and statutory regulations with regard to waste - see point 15. The product should be disposed with entities which are authorised to conduct activity in the area of collecting, recycling or utilization of waste.

Product remains:
Do not dispose the product into the sewage system. Do not store with communal waste. Remove the remains of the mixture carefully and harden with the use of the proper A component, included in the set. The hardened product is not harmful waste.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods
CAUTION: harden the remains in small portions and keep them away from flammable products. High amounts of heat are released during chemical reaction!

Contaminated container:
A container containing unhardened remains of the product is harmful waste. Do not store with communal waste. The contaminated container should be disposed with entities which are authorized to collection, recover or disposal.

SECTION 14: TRANSPORT INFORMATION

		ADR/RID	IMO/IMGD	IATA-DGR
14.1.	**UN number**	2735	2735	2735
14.2.	**UN proper shipping name**	AMINES, LIQUID, CORROSIVE, N.O.S. (Triethylenetetramine)		
14.3.	**Transport hazard class(es)**	8	8	8
14.4.	**Packaging group**	II	II	II
14.5.	**Environmental hazards**	---	---	---

14.6. Special precautions for user
Do not transport together with materials of class 1 (excluding materials of class 1.4S) and some materials of classes 4.1 and 5.2. During transport, avoid direct contact with materials of classes 5.1 and 5.2. Do not use an open flame and do not smoke.

14.7. Transport in bulk according to Annex II of MARPOL Convention and the IBC Code
Not applicable.

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
REACH - Regulation 2006/1907/WE
CLP - Regulation 1272/2008/WE

15.2. Chemical safety assessment
Not performed

SECTION 16: OTHER INFORMATION

Relevant hazard statements listed in Sections 2 to 15:
Eye Dam. 1 Serious eye damage
H318 Causes serious eye damage.
Muta. 2; Germ cell mutagenicity, cat. 2
H341 Suspected of causing genetic defects.
Skin Sens. 1 Skin sensitization, cat. 1
H317 May cause an allergic skin reaction.
Acute Tox. 4. Acute toxicity, category 4
H302 Harmful if swallowed.
H332 Harmful if inhaled.
H312 Harmful in contact with skin.
Skin Irrit. 2 Caustic/irritating effect on skin, category 2
H315 Causes skin irritation.
STOT RE 2 Specific target organ toxicity — repeated exposure, category 2
H373 May cause damage to organs through prolonged or repeated exposure.
Aquatic Chronic 3 Hazardous to the aquatic environment — Chronic Hazard, cat. 3
H412 Harmful to aquatic life with long lasting effects.

Explanation of the abbreviations and acronyms used in the Safety Data Sheet
CAS no – numerical symbol ascribed to a chemical substance by the American organization, Chemical Abstracts Service (CAS).
EC no. – a number ascribed to a chemical substance in the European List of Notified Chemical Substances (ELINCS) or a number in the European Inventory of Existing Chemical Substances mention in "No-longer polymers" publication (EINECS)
MPC – maximum permissible concentration of health hazardous substances in the work place

SECTION 16: OTHER INFORMATION

MPIC – maximum permissible instantaneous concentration
MPCC - maximum permissible ceiling concentration
PCB - permissible concentration in biological material
UN number - four-digit identification number of a substance, preparation or product pursuant to UN model regulations
ADR – European agreement on international road transport of hazardous materials
IMO – International Marine Organization
RID – Regulations for international rail transport of hazardous materials
IMDG-Code – International marine code for hazardous materials
ICAO /IATA – Technical Instructions for Safe Air Transport of Hazardous Materials

The information is based on our current knowledge. This document shall not constitute warranty for product characteristics. Classification was made by calculation method according to the classification rules contained in Regulation 1272/2008/WE.

Other sources of information
ECHA European Chemicals Agency
TOXNET Toxicology Data Network
IUCLID International Uniform Chemical Information Database

Changes: General update

Trainings:
With regard to handling, health and safety while working with hazardous substances and mixtures.
With regard to transport of hazardous goods pursuant to the requirements of ADR regulations.

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