

# MATERIAL SAFETY DATA SHEET

In accordance with regulation (EC) 1907/2006 (REACH)

## Hardener HG 351

Date of Issue: 12-07-2004

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

Trade name: **Hardener HG 351**

Supplier:

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### SECTION 2: Hazards identification

2.1 Label elements according to Regulation (EC) No 1272/2008 – CLP

Hazard pictograms:

Signal word: **DANGER**



GHS05



GHS07

#### Hazard statements, H

H302 Harmful if swallowed.  
H312 Harmful in contact with skin.  
H314 Causes severe skin burns and eye damage.  
H317 May cause an allergic skin reaction.  
H332 Harmful if inhaled.  
H412 Harmful to aquatic life with long lasting effects.

#### Precautionary statements, P

P273 Avoid release to the environment.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P305 + P351 + P338 IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.  
P310 Immediately call a poison control center or doctor/physician.

## 2.2 Label elements according to Directive 67/548/EHS, 1999/45/EC

Symbols:



Xn – Harmful



C – Corrosive



Xi - Irritant

### Risk phrases (R)

**R23/24/25** Toxic by inhalation and if swallowed.  
**R34** Causes burns.  
**R36/37/38** Irritating to eyes, respiratory system and skin,  
**R43** May cause sensitisation by skin contact.  
**R52/53** Harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

### Safety phrases (S)

**S23** Do not breathe vapour.  
**S26** In case of contact with eyes, rinse immediately with plenty of water and seek medical advice  
**S24/25** Avoid any inhalation, contact with skin and eyes. Wear suitable protective clothing and gloves  
**S36/37/39** Wear suitable protective clothing, gloves and eye/face protection  
**S45** In case of accident or if you feel unwell seek medical advice immediately (show the label where possible)  
**S53** Avoid exposure - obtain special instructions before use  
**S61** Avoid release to the environment. Refer to special instructions/safety data sheet

## 2.3 Classification substance/mixture according to Regulation (EC) No 1272/2008 – CLP

<b>CAS 31326-29-1</b> Skin sensitization (Category 1) Skin corrosion 1B Eye corrosion 1	<b>CAS 102-71-6</b> Damage to eyes 1  Toxicity for special target organisms – repeated exposure 2	<b>CAS 2855-13-2</b> Acute toxicity oral 4  Skin sensitization 1 Acute toxicity dermal 4  Skin corrosion 1B  Acute aquatic toxicity 3	<b>CAS 100-51-6</b> Acute toxicity 4  Acute toxicity 4	<b>CAS 140-31-8</b> Acute toxicity 3  Acute toxicity 4 Damage to eyes 1  Skin corrosion (category 1B) Acute aquatic toxicity (category 3)
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## 2.4 Classification substance/mixture according to Directive 67/548/EHS, 1999/45/EC

No data.

## SECTION 3: Composition/information on ingredients

**Chemical characteristic:** mixture of polyamines and aromatic alcohol.

**Recommended application:** hardener for laminating epoxy resin.

**Description:** mixture of substances listed below with nonhazardous additive substances.

<b>MIXTURE</b>		<i>according to Reg. No 1278/2008 (CLP)</i>	<i>according to Dir. 67/548/EHS, 1999/45/ES</i>
<b>&gt; 30%</b>	<b>Reaction product of diethylenetriamine and A diglycidylether</b>		
CAS No:	31326-29-1	GHS05, GHS07	C
EC No:	-	H314, H317, H318	R34, R43
Index No:	-	P280, P303+361+353, P305-351+338, P310, P333+313	S1/2, S36/37/39, S45

<b>&gt; 20% Triethanolamine</b>			
CAS No:	102-71-6	GHS05, GHS08	Xi
EC No:	203-049-8	H318, H373	R41, R48/22
Index No:	-	P280, P305+351+338, P310	S26, S36
<b>&gt; 20% Isophoronediamine</b>			
CAS No:	2855-13-2	GHS05, GHS07	C
EC No:	220-666-8	H302, H312, H314, H317, H412	R21/22, R34, R43, R52/53
Index No:	612-067-00-9	P273, P280, P305+351+338, P310	S26, S36/37/39, S45, S61
<b>&gt; 5% Benzylalcohol</b>			
CAS No:	100-51-6	GHS07	Xn
EC No:	202-859-9	H302, H332	R23/24/25, R36/37/38, R43
Index No:	603-057-00-5	.	S23, S26, S24/25, S36, S37, S 53
<b>&gt; 5% Aminoethylpiperazine</b>			
CAS No:	140-31-8	GHS05, GHS06	Xn,C
EC No:	205-411-0	H302, H311, H314, H317, H318, H412	R21/22, R34, R43, R52/53
Index No:	.	-	-

## SECTION 4: First aid measures

### Description of first aid measures

#### General notes:

Remove parts of the clothes that have been soiled with the product. Breathing apparatus can be removed only after the soiled garment had been completely removed. In case of respiratory arrhythmia or apneusis provide artificial respiration. Staff providing the first aid at first need to pay attention to their own safety.

- Following inhalation:** Sufficient supply of fresh air and to be sure call for a doctor. In case of unconsciousness place patient stably in side position for transportation.
- Following skin contact:** Immediately wash with water and soap and rinse thoroughly. Call for a doctor immediately.
- Following eye contact:** Rinse opened eyes for several minutes under running water. Call for a doctor immediately.
- Following ingestion:** Rinse mouth immediately and drink plenty of water. Sufficient supply of fresh air. Do not evoke vomiting. Call for a doctor immediately.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

**Suitable extinguishing media:** carbon dioxide (CO<sub>2</sub>), water aerosol, foam, extinguishing powder.

**Unsuitable extinguishing media:** water flow.

### 5.2 Special hazards arising from the substance or mixture

No data.

### 5.3 Advice for firefighters

#### Special protective equipment

Wear protective breathing apparatus. Wear complete protective clothing.

### 5.4 Further information

Contaminated water used for fire-fighting has to be properly collected and must not enter sewers. It has to be disposed in conformity with valid regulations.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures:

Ensure sufficient ventilation. Wear protective equipment. Keep unprotected people in a safe distance.

### 6.2 Environmental precautions:

Do not allow to enter sewers/surface or ground water. Inform respective authorities in case of seepage into water course or sewage systems.

### 6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, earth, acid binders, universal binders, sawdust). Dispose contaminated material as a waste according to local directives.

### 6.4 Reference to other section:

Information about the personal protection see section 8.

## SECTION 7: Handling and storage

### 7.1 Handling

#### Precautions for safe handling:

Keep receptacles tightly sealed. Ensure sufficient ventilation/exhaustion at workplace. Open and handle receptacles with care.

#### Information about fire and explosion protection:

Do not allow the product to get nearby ignition source – no smoking. Make a precaution against electrostatic charge occurrence.

### 7.2 Storage

#### Conditions for safe storage, including any incompatibilities:

Store only in well-sealed, original receptacles at dry and cold place. Store separately from foodstuff. The substance must not penetrate into the floor. No VbF (directive of flammable liquid storage) relates to the product.

#### Stability during storage

To be stored at dry and cool place in tightly closed receptacles.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

The product does not contain any relevant amount of ingredients that influence workplace and there is no need of monitoring the limit values.

#### PNEC/DNEL

No data.

### 8.2 Exposure controls

#### Personal protective equipment - general protective any hygienic measures:

Immediately remove all soiled and contaminated clothing.

Keep away from foodstuffs, beverages and feed.

Separate storage of protective clothing.

Wash hands before breaks and at the end of work.

Avoid contact with eyes and skin.

Do not inhale gases, vapours and aerosols.

Prevent contact with eyes and skin.

Do not eat and drink during work.

**Respiratory protection:** No need of respiratory protection if good ventilation is ensured.

**Hand protection:** Protective gloves made of plastics. When choosing the hand protection it is necessary to consider the time of penetration, speed of penetration and material degradation extent.

**Eye protection** Tightly sealed protective goggles.

**Body protection** Impermeable protective clothing.

### 8.3 Further warning

For producers valid data serve as source. Handle in accordance with correct industrial, hygienic and safety procedures.

## SECTION 9: Physical and chemical properties

Form:	liquid
Appearance:	transparent
Odour:	amine
pH value:	10 - 12

Melting point:	No data
Initial boiling point/boiling range:	> 208 °C
Flash point:	>96 °C

Flammability:	No data
Lower flammability or explosive limits:	No data
Upper flammability or explosive limits:	No data

Vapour pressure (20°C):	< 1,2 Pa
Vapour density (25°C):	0,95 – 0,98 g/cm <sup>3</sup>

Solubility in/Miscibility with water:	partly soluble
Solubility in organic solvent:	No data
Partition coefficient n-oktanol/water:	No data

Auto-ignition temperature:	Product is not auto-igniting
Decomposition temperature:	> 380 °C
Dynamic viscosity at 25 °C:	250 – 300 mPas
Kinematic viscosity:	No data

Explosive properties:	product does not present an explosion hazard
Flammable temperature:	No data
Solid Contents:	No data

## SECTION 10: Stability and reactivity

10.1 Reactivity	No decomposition if used according to specifications.
10.2 Chemical stability	No decomposition if used according to specifications.
10.3 Possibility of hazardous reactions	Reactions with strong acids and alkali. Reactions with strong oxidants.
10.4 Conditions to avoid	No data
10.5 Incompatible materials	No data
10.6 Hazardous decomposition products	Carbon dioxide, carbon monoxide, Nitrous oxides (NO <sub>x</sub> ), organic gases and vapours.

## SECTION 11: Toxicological information

### 11.1 Acute toxicity:

Values LD/LC50 deciding about classification (LD50 = fatal dose, LC50 = fatal concentration):

#### 31326-29-1 Reaction product of diethylenetriamine and A diglycidylether

LD50	No data	No data
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#### 102-71-6 Triethanolamine

LD50	oral:	>4.000 mg/kg (rat)
LD50	dermal:	>2.000 mg/kg (rabbit)

#### 100-51-6 Benzyl alcohol

LD50	oral:	1.230 mg/kg (rat)
LD 50	dermal:	2.000 mg/kg (rabbit)

2855-13-2 **Isophoronediamine**

LD50 oral: 1.030 mg/kg (rat)

### 11.2 Irritant effects

**On the skin:** corrosive effect to skin and mucous membranes.

**On the eye:** corrosive effect, seriously harmful/corrosive to eyes.

**Sensitization:** sensitization possible in case of skin contact.

### 11.3 Further toxicological information

**Germ cell mutagenicity:** No data.

**Carcinogenicity:** No data.

**Reproductive toxicity:** No data.

**Evolution toxicity:** No data.

## SECTION 12: Ecological information

### 12.1 Toxicity

#### Assessment of toxicity

Acute toxicity to aquatic life.

Fish	-	LC50/96 hours	44 mg/l
Crustacea	<i>Daphnia magna</i>	EC50/48 hours	<5 mg/l
Algae/aquatic plants	<i>Scenedesmus subspicatus</i>	No data	No data
Microorganisms	<i>Pseudomonas putida</i>	No data	No data

### 12.2 Persistence and degradability

No data.

### 12.3 Bioaccumulative potential

No data.

### 12.4 Mobility in soil

No data.

### 12.5 Results of PBT and vPvB assessment

According to appendix XIII of Regulation (EC) No 1907/2006 (REACH): this mixture does not contain any substances that are assessed to be PBT (carcinogenic, mutagenic, toxic).

According to appendice XIII of Regulation (EC) No 1907/2006 (REACH): this mixture does not contain any substances that are assessed to be vPvB (highly persistent/highly bioaccumulative).

### 12.6 Other adverse effects

Very toxic to aquatic life. Very toxic to environment: May have long lasting harmful effects to aquatic life. Do not allow product to reach ground water, water course or sewage system, even in small amount.

## SECTION 13: Disposal considerations

### Waste treatment methods

Must be disposed of in accordance with local directives. Contaminated receptacles have to be disposed of in the same way as the substance they contain. To be disposed of with incineration at suitable incinerator of industrial waste or to be stored at designated storage places.

## SECTION 14: Transport Information

### ADR/RID – Land transport (on road/railway):

<b>Hazard class:</b>	8 – corrosive substances
<b>Packing group:</b>	III
<b>UN-Number (OSN):</b>	UN 2735
<b>Hazard label:</b>	80
<b>Proper shipping name:</b>	Amines, liquid, corrosive, n.o.s. - <i>Polyamine</i>

### IMDG - Sea transport

<b>Hazard class:</b>	8 – corrosive substances
<b>Packing group:</b>	III
<b>UN-Number (OSN):</b>	UN 2735
<b>Hazard label:</b>	80
<b>Proper shipping name:</b>	Amines, liquid, corrosive, n.o.s. - <i>Polyamine</i>
<b>Marine pollutant:</b>	NO

### IATA-DGR – Air transport

<b>Hazard class:</b>	8 – corrosive substances
<b>Packing group:</b>	III
<b>UN-Number (OSN):</b>	UN 2735
<b>Hazard label:</b>	80
<b>Proper shipping name:</b>	Amines, liquid, corrosive, n.o.s. - <i>Polyamin</i>

## SECTION 15: Regulatory information

<b>Label</b>	<b>Trade name:</b>	Hardener for laminating epoxy resin
	<b>Label elements:</b>	DANGER - HGS05, GHS07(C, Xn)
	<b>Mixture of substances:</b>	Diglycidylether, Triethanolamine, Isophoronediamine, Benzyl Alcohol, Aminoethylpiperazine

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

- The product has been classified and marked in accordance with EU Directives/Ordinance on hazardous materials.
- The product is classified as hazardous material according to Act No 356/2003 Coll., on chemical substances and chemical preparations and amendments to relevant legislation.
- Act No. 258/2000 Coll., on public health protection and on amendment of certain acts, as amended and Regulation No. 361/2007 Coll., determining conditions for occupational health protection.
- Act No. 477/2001 Coll., on packaging and on amending some Acts (Act on Packaging).
- ČSN 65 0201 a ČSN 65 6060 for storage, handling and transport.

## SECTION 16: Other information

For full version of classification substance/mixture see section 2 and 3.



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.