MATERIAL SAFETY DATA SHEET

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

Hardener HG 353

Date of Issue: 11-01-2005 **Date of revision: 30-01-2013** **Version: 3.0**

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

Trade name: **Hardener HG 353**

Supplier:
Compositesplaza B.V.
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The Netherlands

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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

GHS09

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.
H410	Very toxic to aquatic life with long lasting effects.
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 CENTER or doctor/physician.
P501	Dispose of contents/container to dangerous or special waste collection center.

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

Symbols:

 **Xn –** Harmful

 **C** – Corrosive

 N – Dangerous for the environment

Risk phrases (R)

R20/21/22	Harmful by inhalation, in contact with skin and if swallowed.
R23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
R34	Causes burns.
R36/37/38	Irritating to eyes, respiratory system and skin.
R43	May cause sensitization by skin contact.
R50/53	Very toxic 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 contact with skin and eyes.
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 instruction before use
S60	This material and/or its container must be disposed of as hazardous waste.
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

CAS 2855-13-2	**CAS 104-40-5**	**CAS 100-51-6**
Acute Tox. 4 Acute tox. 4 Skin corrosion (Cathegory 1B) Skin sensitization (Cathegory 1) Acute aquatic toxicity (Cathegory 3)	Acute Tox. 4 (Oral) Skin corrosion(Cathegory 1B) Acute aquatic toxicity (Cathegory 1)	Acute Tox. 4

2.4 Classification substance/mixture according to Directive 67/548/EHS, 1999/45/EC

- Causes burns. Harmful in contact with skin and if swallowed. May cause sensitization when in contact with skin. Toxic for aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- Harmful if swallowed. It causes burns. Toxic for aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- Harmful by inhalation and when swallowed.

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.

MIXTURE	*according to Reg. No. 1278/2008 (CLP)*	*according to Directive 67/548/EHS, 1999/45/ES*
> 45%	**Isophorone diamine**	
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

< 10%	**Reaction product of triethylentetramine and bis. A epichlorhydrine**		
CAS No:	-	-	-
EC No:	-	-	-
Index No:	-	-	-
< 25%	**4-Nonylphenole**		
CAS No:	104-40-5	GHS05, GHS07, GHS09	C, N
EC No:	203-199-4	H302, H314, H410	R22, R34, R50/53
Index No:		P273, P280, P305+351+338, P310, P501	S26, S36/37/39, S45, S60, S61
< 25%	**Benzyl alcohol**		
CAS No:	100-51-6	GHS07	Xn
EC No:	202-859-9	H302, H332	R20/22, R23/24/25, R36/37/38, R43
Index No:	603-057-00-5	-	S23, S26, S24/25, S36, S37, S53

SECTION 4: First aid measures

Description of first aid measures

General notes:
Remove parts of the clothes that have been soiled with the product. Symptoms may appear after several hours, so the medical attention is needed at least 48 hours after the accident. Breathing apparatus can be removed only after the soiled garment had been completely removed. 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 stybly in side position for transportation.

Following skin contact: Immediately wash with water and soap and rinse thoroughly. Immediate medical treatment is needed as untreated burns may lead to wounds that heal with difficulty.

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_2), water spray, 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 self-sufficient protective breathing apparatus. Wear complete protective clothing.

5.4 Further information
Contaminated water used for fire-fighting has to be collected separately and must not enter sewers. It has to be disposed of in accordance with valid regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:
Wear protective equipment. Ensure sufficient ventilation. Keep unprotected people in a safe distance. Wear protective breathing apparatus.

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:
Ensure sufficient ventialtion/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 occurance.

7.2 Storage
Conditions of safe storage and containers:
Store only in well-sealed, original receptacles at dry and cold place. Store separately from foodstuff. The substance must not penetrate 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

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.

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 (100 g/l, 20 °C)
Melting point:	>208 °C
Initial boiling point/boiling range:	no data
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/cm3
Solulibility in/Miscibility with water:	partly soluble
Solulibility 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:	100 – 150 mPas
Kinematic viscosity:	No data
Explosive properties:	No data
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	The product is stable providing that it is handled/stored as prescribed.
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 and carbon monoxide, Nitrous oxides (NOx), organic gases and vapours.

SECTION 11: Toxicological information

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

2855-13-2 **Isophorone Diamine**

LD50	Oral:	1.030 mg/kg (rat)

104-40-5 **4-Nonylphenole**

LD50	oral:	>1.620 mg/kg

100-51-6 **Benzyl alcohol**

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

11.2 Irritant effects

On the skin: corrosive effect to skin and mucous membranes.
On the eye: corrosive effect, seriously harmful/corrosive to eyes.
Senzitization: senzitization 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	*Leuciscus idus*	LC50/96 hours	110 mg/l
Crustacea	*Daphnia magna*	EC50/24 hours	55 mg/l
Algae/aquatic plants	*Scenedesmus subspicatus*	EC50/72 hours	37 mg/l
Microorganisms	*Pseudomonas pudita*	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): data not available
According to appendice XIII of Regulation (EC) No 1907/2006 (REACH): data not available

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 incinarator of industrial waste or to be stored at designated storage places.

SECTION 14: Transport Information

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

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

IMDG - Sea transport

Hazard class:	8 – corrosive substances

Packing group:	III
UN-Number (OSN):	UN 2735
Hazard label:	80
Proper shipping name:	Amines, liquid, corrosive, n.o.s. - *Polyamine*
Marine pollutant:	NO

IATA-DGR – Air transport

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

SECTION 15: Regulatory information

Label	**Trade name:**	Hardener for laminating epoxy resin
	Label elements:	DANGER - HGS05, GHS07(C, Xn), GHS09 (C, Xn, N)
	Mixture of substances:	Isophoronediamine,4-Nonylphenole, Benzyl Alcohol

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.