



Safety Data Sheet

Hardener 23-288

Version 1.0
Date: 04/21/2015

1. Product and company Information

Product Name : Hardener 23-288 -Part B
Material Number : 23-288
Chemical Family : Aliphatic Amine Based Curing Agent
Manufacturer/ Importer/Distributor : Master Terrazzo Technologies
8000 Bristol Pike-Levittown, PA
P.O. Box 226
Bristol, PA 19007
Telephone : 1-215-949-1474
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Emergency telephone Number : Chemtel-800-255-3924
Contract #MIS0004752

2. Hazards Identification

2.1 Classification of the substance/mixture

2.1.1 Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]

Acute oral toxicity cat. 4	H302
Acute dermal toxicity cat. 4	H312
Skin corrosion cat. 1B	H314
Skin sensitization cat. 1	H317
Acute inhalation toxicity cat. 4	H332
STOT-se/respiratory cat. 3	H335
Reproductive toxicity cat. 2	H361
Aquatic chronic, cat. 2	H411

2.2 Labeling elements

2.2.1 Labeling according Regulation (EC) No 1272/2008 [CLP]

Signal Word: **Danger**

Hazard pictogram:



Hazard statements

H302 + H312 + H332 Harmful if swallowed, in contact with skin and if inhaled.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H335 May cause respiratory irritation.

H361 Suspected of damaging fertility or the unborn child.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P260 Do not breathe mist/vapors/spray.

P264 Wash hands and skin contact areas thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P272 Contaminated work clothing should not be allowed out of the workplace.

P273 Avoid release to the environment.

P280 Wear protective gloves / eye protection / face protection.

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

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

P304 + P340 IF INHALED: Remove to fresh air and keep at rest in a position 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.

P312 Call a POISON CENTER or doctor if you feel unwell.

P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.

P363 Wash contaminated clothing before reuse.

P391 Collect spillage.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P501 Dispose of contents/container to a licensed/permitted incinerator or other thermal destruction facility in compliance with all applicable environmental control regulations.

2.3 OSHA GHS classification

This product is classified as hazardous as defined within the GHS OSHA Hazard Communication Standard 29CFR1910.1200.

3. Composition/ Information on Ingredients**3.1 Substances**

N/A

3.2 Mixtures

Component	CAS No
Diethylenetriamine	111-40-0
Epoxy polyamine adduct	Trade Secret
4,4'-Isopropylidene diphenol	80-05-7

Polyether Amine	9046-10-0
Phenyl Carbinol	100-51-6

4. First Aid Measures

4.1 Description of First Aid measures

General advice: consult a physician; show this SDS to doctor in attendance.

In the event of skin contact: Rinse immediately with plenty of water; remove contaminated clothing; wash thoroughly with soap and water for at least 15 minutes. If irritation, rash or other adverse effects develop, get immediate medical attention.

In the event of eye contact: Bathe the eye with running water for at least 15 minutes, lifting upper and lower eyelids. Get medical attention immediately.

In the event of swallowing: Do NOT induce vomiting (danger of perforation of the esophagus and stomach). Rinse out mouth with water; drink several glasses of water. Call nearest Poison Center or physician immediately.

In the event of exposure by inhalation: Move person to fresh air and keep at rest in a position comfortable for breathing; if breathing is irregular, provide artificial respiration; if there are breathing difficulties, administer oxygen; get medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Harmful if swallowed, in contact with skin and if inhaled; can cause severe skin burns and eye damage; may cause an allergic skin reaction; respiratory irritant; suspected of damaging fertility or the unborn child.

4.3 Indication of any immediate medical attention and special treatment needed

Corticoid preparations and antihistamine may assist treating skin and mucous membrane exposures. Note to physician: material is corrosive; may cause stricture; if lavage is performed, suggest endotracheal and/or esophagoscopy control. If burn is present, treat as any thermal burn, after decontamination. No specific antidote; treat symptomatically; supportive care. Eye wash stations and emergency showers should be available.

5. Fire Fighting Measures

5.1 Extinguishing media

Carbon dioxide, alcohol resistant foam, dry chemical, water fog, limestone powder; use water spray to cool fire-exposed containers.

5.2 Special hazards arising from the substance or mixture

Exposure to decomposition products may be harmful to health; combustion products may include but are not limited to: carbon monoxide, carbon dioxide, nitrogen oxides, ammonia, nitric acid; the formation of hydrocarbon fragments is possible in the initial stages of fire (especially in between 400°C and 700°C); smoke may contain particles of the original material as well.

5.3 Advice for fire fighters: Use protective fire-fighting clothing and positive pressure self-contained breathing apparatus to protect against potential harmful and/or irritating fumes. Do not use high pressure water jet as this may spread the area of the fire.

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Isolate area; ensure adequate ventilation; use appropriate personal protection equipment; avoid breathing mist, vapors, spray; avoid contact with skin, eyes and clothing; keep unnecessary and unprotected personnel from entering the involved area.

6.2 Environmental precautions:

Halt the flow of material as soon as practical using appropriate barriers; turn containers leak-side up to stop the escape of liquid. Prevent contamination of soil and water. Prevent from spreading or entering into drains, ditches, waterways by using sand, earth or appropriate barriers.

6.3 Methods and material for containment and cleaning up

Soak up with sand, earth, diatomaceous earth or other suitable inert absorbent material; collect into suitable waste disposal containers. Reuse uncontaminated material when possible. Neutralize contaminated area as appropriate for alkaline spill then rinse with large amounts of water. Dispose of in accordance with applicable local and federal environmental control laws and regulations.

6.4 Reference to other sections

For more information on exposure controls, personal protection and disposal, review data in section 8 and section 13 of this SDS.

7. Handling and Storage

7.1 Precautions for safe handling

Ensure adequate ventilation of workplace and storage areas; avoid skin contact; do not breathe mist, vapors, spray; use recommended personal protective equipment; wash thoroughly after handling.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well-ventilated place. Store at 4-35°C (40-95°F). Keep away from open flames and high temperatures. Keep container tightly closed.

Incompatibilities: Do not store together with strong oxidizing agents.

8. Exposure Controls/ Personal Protection

8.1 Control parameters

Occupational exposure limits:

ACGIH TLV: 4.3 mg/m³ (1 ppm), skin notation (for DETA component)

8.1.2 Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference can be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents for the determination of hazardous substances.

8.2 Exposure Controls:

Follow good industrial workplace practices; do not eat, drink or smoke while handling; wash hands before breaks and at end of work shift; follow recommendations in this SDS.

8.2.1 Appropriate engineering controls

Ensure adequate ventilation through local exhaust to control airborne concentrations.

8.2.2 Individual protection measures, such as personal protective equipment**8.2.2.1 Eye/face protection**

Wear tight-fitting chemical safety goggles and face shield to prevent eye contact. Refer to OSHA Standard 29CFR1910.133 and European Standard EN166.

8.2.2.2 Skin protection

Wear impervious clothing as necessary to protect against product contact. Necessity for boots, apron, face shield, etc. will be dependent on any hazards presented in the work process. Refer to CFR1910.132 and CFR1910.136 for OSHA approved standards on protective clothing and footwear.

8.2.2.3 Respiratory protection

Respiratory protection is required wherever exposure limits are exceeded; use a NIOSH approved organic vapor cartridge respirator following the guidelines of an established respiratory protection program in compliance with 29CFR1910.134. Note that air-purifying respirators are only recommended for use in atmospheres containing up to ten times the permissible exposure limit; if this higher level is exceeded, a supplied air respirator must be used; always consult respirator manufacturer instructions. Self-contained breathing apparatus should also be available in case of emergency.

8.2.2.4 Hand protection

Use suitable impervious neoprene, chloroprene or nitrile rubber gloves. When prolonged or frequently repeated contact may occur, glove material should have a breakthrough time that exceeds 480 minutes (breakthrough rating = 6); when only brief contact is expected, a glove with a lesser breakthrough rating (rating 2 = >30 minutes) may be suitable. Note the requirements of Standard EN 374.

Other Protective Equipment: The type and degree of personal protective equipment appropriate will depend on the specific work operation. Eye wash stations and emergency showers should be available. Inspect and replace personal protective equipment at regular intervals; use professional care in their selection, use and care.

8.3 Environmental exposure controls

Observe all precautions to prevent contamination of soil and waterways.

9. Physical and Chemical Properties**9.1 Information on basic physical and chemical properties****9.1.1 General information:**

Appearance: Liquid

Color: Amber

Type of Odor: Amine

Odor Threshold: No data available

9.1.2 Important health, safety and environmental information:

Initial Boiling Point: Not determined

Freezing Point: No data available

Flash Point: 261°F (127°C)

Autoignition Temperature: >300°C (>572°F)

Decomposition Temperature: Not determined

Vapor Pressure: <1 mm Hg @ 20°C

Vapor Density (Air=1): >1

Evaporation Rate (BuAc=1): <1

Specific Gravity: 0.96 – 0.97

Bulk Density: 8.0 - 8.09 lbs/gal

Water Solubility: Negligible

pH: Alkaline

Viscosity: 50-100 cP @ 25°C

Explosive Properties: Not explosive

Oxidizing Properties: Not applicable

10. Stability and Reactivity

10.1 Stability and Reactivity

10.1 Reactivity

No dangerous reaction is known under normal use and storage conditions.

10.2 Stability

Stable under normal use and storage conditions.

10.3 Possibility of hazardous reactions

Mixtures with strongly acidic or strongly alkaline materials may produce an exothermic reaction.

10.4 Conditions to avoid

Avoid elevated temperatures and sources of ignition.

10.5 Incompatible materials

Strong acids, strong oxidizing agents, strong reducing agents, acid chlorides, acid anhydrides, hypochlorites. Mixtures with nitrites may generate carcinogenic N-Nitrosamines.

10.6 Hazardous decomposition products

Thermal decomposition will generate carbon monoxide, carbon dioxide and nitrogen oxides, ammonia, nitric acid.

11. Toxicological Information

11.1 Information on toxicological effects

Acute Oral Toxicity: LD50(rat): 1836 mg/kg (ATE)

Acute Dermal Toxicity: LD50(rabbit): 1986 mg/kg (ATE)

Acute Inhalation Toxicity: 0.3 mg/l (for DETA component)

Skin Corrosion/Irritation: Corrosive

Serious Eye Damage/Irritation: Severely irritating; possible corneal injury.

Skin Sensitization (guinea pig): Sensitizer

Mutagenicity: Results of in vitro mutagenicity tests have been negative.

Carcinogenicity: Not classified as carcinogenic. Not listed by OSHA/NTP/IARC.

Reproductive Toxicity: Bisphenol-A is suspected of damaging fertility or the unborn child. High doses of BPA given orally and by injection to laboratory animals have produced slight effects on certain reproductive endpoints, such as enlargement of the uterus; the effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals. There is no evidence of reproductive toxicity in humans.

Specific Target Organ Toxicity - single exposure (STOT-se): Target organ: respiratory system: local irritation of the mucous membranes; respiratory disorders.

Specific Target Organ Toxicity - repeated exposure (STOT-re): Product not classified based on available data.

Aspiration Hazard: Alkaline material, possible aspiration hazard.

Potential Health Effects:

Skin Contact: Corrosive; causes burns; prolonged or repeated contact may cause an allergic reaction or dermatitis. A single prolonged exposure may result in the material being absorbed in harmful amounts.

Eye Contact: May cause severe irritation with corneal injury; may result in permanent impairment of vision and possible blindness. Vapors may irritate eyes.

Ingestion: Harmful if swallowed. May cause gastrointestinal irritation or ulceration; may cause burns to the mouth and throat, stomach and esophagus.

Inhalation: Harmful if inhaled; exposure may cause coughing or wheezing; there may be congestion of the lungs causing severe shortness of breath; there may be loss of consciousness; convulsions may occur; may cause respiratory sensitization or asthma in susceptible individuals.

Chronic Health Effects: Reproductive effects. Repeated excessive exposures may cause adverse effects to the liver and kidney.

Additional Information:

RTECS No. IE1225000 (Diethylenetriamine)

RTECS No. SL6300000 (Bisphenol A)

12. Ecological Information

Ecotoxicity effects

Aquatic toxicity : No data available on the product itself.

Toxicity to other organisms : No data available

Persistence and degradability

Biodegradability : No data is available on the product itself.

Mobility : No data available

Bioaccumulation : No data available on the product itself.

13. Disposal Considerations

13.1 Waste treatment methods

Disposal: Do not dump to ground, sewers or watercourses. Incinerate or otherwise dispose of in compliance with all applicable federal, state and local environmental control laws and regulations. Waste characterization according to RCRA guidelines and compliance with applicable laws are the responsibility solely of the waste generator.

Container Disposal: Containers should be drained of all residual products prior to disposal.

14. Transport Information

14.1 Shipping description

DOT Proper Shipping Description:

UN2079 Diethylenetetramine (mixture)
Hazard Class 8 PG II
ERG No. 153

IMDG:

UN2079 Diethylenetetramine (mixture)
Hazard Class 8 PG II
Marine Pollutant: No
EmS No. F-A, S-B

IATA:

UN2079 Diethylenetetramine (mixture)
Hazard Class 8 PG II
EmS No. F-A, S-B

15. Regulatory Information

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

SARA Title III Section 311/312 (40CFR370): Acute health hazard, chronic health hazard

SARA Title III Section 313 (40CFR372): Product contains 20-30% Bisphenol-A (CAS# 80-05-7).

CERCLA Status (40CFR302): 55-Gallon drum containers of this product contain no components at levels which could require reporting under this statute. (The RQ for Bisphenol A is 5000 lbs.) (Release of a hazardous substance into the environment in an amount that equals or exceeds its reportable quantity (RQ) requires notification to the National Response Center at 800-424-8802.)

RCRA Status (40CFR261): Not listed

OSHA/NTP/IARC Carcinogen Status: Not listed

TSCA Inventory Status: Reported/included

Canadian DSL Status: Reported/included

Canadian WHMIS Status: D2B, E

Chemicals Known to the State of California to Cause Cancer or Reproductive Toxicity:

None known to be in the product at levels requiring a warning.

REACH Annex XIV (SVHC)

No listed components

REACH Annex XVII (Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles)

No listed components

REACH Status (EC 1907/2006): This material has been registered, pre-registered or is otherwise exempted from registration under the Registration, Evaluation and Authorization of Chemical Substances.

Chemical safety assessment

Not available

16. Other Information

HMIS ratings:

Health:	3
Flammability:	1
Reactivity:	0

(Personal protective equipment selection is best assigned by the user after performing a hazard assessment on the product as it is to be used in the specific work process.)

National chemical inventories

All components of this product are listed on the following chemical substance inventories:

TSCA (USA)	AICS (Australia)
DSL (Canada)	PICCS (Philippines)
EINECS (Europe)	IECSC (China)
ECL (Korea)	

Abbreviations

ACGIH American Conference of Governmental Industrial Hygienists
 ADR International carriage of dangerous goods by Road
 AICS Australian Inventory of Chemical Substances
 AIHA American Industrial Hygiene Association
 BfR Bundesinstitut für Risikobewertung recommendations for food contact materials
 BCF Bioconcentration Factor
 CERCLA Comprehensive Environmental Response, Compensation and Liability Act
 CLP Classification, Labeling and Packaging regulation
 DOT Department of Transportation
 DSL Domestic Substances List
 EINECS European Inventory of Existing Chemical Substances
 ECL Existing Chemicals List (Korea)
 ENCS Existing and New Chemical Substances Inventory (Japan)
 EN 689 Workplace atmospheres – Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy
 ERG Emergency Response Guide
 GHS Globally Harmonized System
 HMIS Hazardous Materials Information System
 IARC International Agency for Research on Cancer
 IATA International Air Transport Association
 ICAO International Civil Aviation Organization
 IDLH Immediately Dangerous to Life and Health
 IMDG International Maritime Dangerous Goods
 LD50 Lethal dose to 50% of test animal population
 MAK Maximale Arbeitsplatz Konzentration
 NOAEL No observable adverse effect level
 NTP National Toxicology Program

OEL Occupational Exposure Limit
OSHA Occupational Safety & Health Administration
PBT Persistent, Bioaccumulative and Toxic
vPvB Very Persistent and Very Bioaccumulative
PEL Permissible exposure limit
PICCS Philippine Inventory of Commercial Chemical Substances
PNEC Predicted No Effect Concentration
REACH Registration, evaluation and authorization of chemical substances
RID International carriage of dangerous goods by Rail
SARA Superfund Amendments and Reauthorization Act
STEL Short Term Exposure Limit
SVHC Substance of Very High Concern
TLV Threshold Limit Value
TSCA Toxic Substances Control Act
TWA Time Weighted Average
VOC Volatile organic compound
WEEL Workplace Environmental Exposure Level
WGK Wassergefährdungsklasse (Water Hazard Class)
WHMIS Workplace Hazardous Material Identification System

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Preparation Date : 04/21/2015