



Revision Number: 006.0

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**1. PRODUCT AND COMPANY IDENTIFICATION**

<b>Product name:</b>	<b>LOCTITE STYCAST ES 4412 PTB known as HYSOL ES4412 PART B GAL</b>	<b>IDH number:</b>	427432
<b>Product type:</b>	Epoxy Hardener	<b>Item number:</b>	EB4412-B50
<b>Restriction of Use:</b>	None identified	<b>Region:</b>	United States
<b>Company address:</b>	Henkel Corporation One Henkel Way Rocky Hill, Connecticut 06067	<b>Contact information:</b>	Telephone: +1 (860) 571-5100 MEDICAL EMERGENCY Phone: Poison Control Center 1-877-671-4608 (toll free) or 1-303-592-1711 TRANSPORT EMERGENCY Phone: CHEMTREC 1-800-424-9300 (toll free) or 1-703-527-3887 Internet: www.henkelna.com

**2. HAZARDS IDENTIFICATION**

**EMERGENCY OVERVIEW**

**DANGER:** CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.  
MAY CAUSE AN ALLERGIC SKIN REACTION.  
MAY CAUSE ALLERGY OR ASTHMA SYMPTOMS OR BREATHING  
DIFFICULTIES IF INHALED.

HAZARD CLASS	HAZARD CATEGORY
SKIN CORROSION	1C
SERIOUS EYE DAMAGE	1
RESPIRATORY SENSITIZATION	1
SKIN SENSITIZATION	1

**PICTOGRAM(S)**



**Precautionary Statements**

<b>Prevention:</b>	Avoid breathing vapors, mist, or spray. Wash affected area thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves, clothing, eye and face protection. In case of inadequate ventilation wear respiratory protection.
<b>Response:</b>	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If skin irritation or rash occurs: Get medical attention. If experiencing respiratory symptoms: Call a poison center or physician. Wash contaminated clothing before reuse.
<b>Storage:</b>	Store locked up.
<b>Disposal:</b>	Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Percentage*
Barium sulfate	7727-43-7	50 - 60
Fatty acids, tall-oil, reaction products with tetraethylenepentamine	68953-36-6	30 - 40
Tetraethylene pentamine	112-57-2	5 - 10
Bisphenol A, epichlorohydrin polymer, diethylenetriamine adduct	68610-56-0	1 - 5
4,4'-Isopropylidenediphenol	80-05-7	1 - 5
Diethylenetriamine	111-40-0	1 - 5
Limestone	1317-65-3	1 - 5
Diiron trioxide	1309-37-1	0.1 - 1

\* Exact percentages may vary or are trade secret. Concentration range is provided to assist users in providing appropriate protections.

### 4. FIRST AID MEASURES

<b>Inhalation:</b>	Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
<b>Skin contact:</b>	Immediately flush skin with plenty of water (using soap, if available). Remove contaminated clothing and footwear. Get medical attention. Wash clothing before reuse.
<b>Eye contact:</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
<b>Ingestion:</b>	Do not induce vomiting. Never give anything by mouth to an unconscious person. Get immediate medical attention.
<b>Symptoms:</b>	See Section 11.

### 5. FIRE FIGHTING MEASURES

<b>Extinguishing media:</b>	Foam, dry chemical or carbon dioxide.
<b>Special firefighting procedures:</b>	Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.
<b>Unusual fire or explosion hazards:</b>	Closed containers may rupture (due to build up of pressure) when exposed to extreme heat. In case of fire, keep containers cool with water spray.
<b>Hazardous combustion products:</b>	Oxides of carbon, oxides of nitrogen, irritating organic vapors. Ammonia.

### 6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

<b>Environmental precautions:</b>	Do not allow product to enter sewer or waterways.
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**Clean-up methods:**

Ensure adequate ventilation. Isolate area. Keep unnecessary personnel away. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Store in a partly filled, closed container until disposal. Refer to Section 8 "Exposure Controls / Personal Protection" prior to clean up.

## 7. HANDLING AND STORAGE

**Handling:**

Use only with adequate ventilation. Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. Refer to Section 8.

**Storage:**

Keep in a cool, well ventilated area away from heat, sparks and open flame. Keep container tightly closed until ready for use.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Barium sulfate	5 mg/m3 TWA Inhalable fraction.	5 mg/m3 PEL Respirable fraction. 15 mg/m3 PEL Total dust. 5 mg/m3 TWA Respirable fraction. 15 mg/m3 TWA Total dust. 15 MPPCF TWA Respirable fraction. 50 MPPCF TWA Total dust.	None	None
Fatty acids, tall-oil, reaction products with tetraethylenepentamine	None	None	None	None
Tetraethylene pentamine	None	None	(SKIN) Aerosol. 1 ppm (5 mg/m3) TWA Aerosol. (Skin sensitizer)	None
Bisphenol A, epichlorohydrin polymer, diethylenetriamine adduct	None	None	None	None
4,4'-Isopropylidenediphenol	None	None	None	None
Diethylenetriamine	(SKIN) 1 ppm TWA	None	None	None
Limestone	10 mg/m3 TWA Total dust.	5 mg/m3 PEL Respirable fraction. 15 mg/m3 PEL Total dust.	None	None
Diiron trioxide	5 mg/m3 TWA Respirable fraction.	10 mg/m3 PEL Fume. 50 MPPCF TWA Total dust. 5 mg/m3 TWA Respirable fraction. 15 mg/m3 TWA Total dust. 15 MPPCF TWA Respirable fraction.	None	None

**Engineering controls:**

Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.

<b>Respiratory protection:</b>	Use NIOSH approved respirator if there is potential to exceed exposure limit(s).
<b>Eye/face protection:</b>	Safety goggles or safety glasses with side shields. Full face protection should be used if the potential for splashing or spraying of product exists. Safety showers and eye wash stations should be available.
<b>Skin protection:</b>	Use chemical resistant, impermeable clothing including gloves and either an apron or body suit to prevent skin contact. Neoprene, Butyl-rubber, or nitrile-rubber gloves. Cover as much of the exposed skin area as possible with appropriate clothing.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state:</b>	Liquid
<b>Color:</b>	White
<b>Odor:</b>	Ammoniacal
<b>Odor threshold:</b>	Not available.
<b>pH:</b>	Alkaline
<b>Vapor pressure:</b>	< 1.0 mm hg
<b>Boiling point/range:</b>	Not available.
<b>Melting point/ range:</b>	Not available.
<b>Specific gravity:</b>	1.4
<b>Vapor density:</b>	Not available.
<b>Flash point:</b>	195 °C (383°F) Closed cup
<b>Flammable/Explosive limits - lower:</b>	Not available.
<b>Flammable/Explosive limits - upper:</b>	Not available.
<b>Autoignition temperature:</b>	Not determined
<b>Flammability:</b>	Not applicable
<b>Evaporation rate:</b>	Not available.
<b>Solubility in water:</b>	Partially miscible
<b>Partition coefficient (n-octanol/water):</b>	Not available.
<b>VOC content:</b>	< 1 %; < 10 g/l (estimated value for resin and hardener mixed together)
<b>Viscosity:</b>	Not available.
<b>Decomposition temperature:</b>	Not available.

## 10. STABILITY AND REACTIVITY

<b>Stability:</b>	Stable under normal conditions of storage and use.
<b>Hazardous reactions:</b>	None under normal processing.
<b>Hazardous decomposition products:</b>	Oxides of carbon. Oxides of nitrogen. Ammonia. Irritating organic vapours.
<b>Incompatible materials:</b>	Strong acids and oxidizing agents. Peroxides. Nitrous acid and other nitrosating agents. This product slowly corrodes copper, aluminum, zinc and galvanized surfaces.
<b>Reactivity:</b>	Not available.
<b>Conditions to avoid:</b>	Store away from incompatible materials. Keep away from open flames, hot surfaces and sources of ignition.

## 11. TOXICOLOGICAL INFORMATION

<b>Relevant routes of exposure:</b>	Skin, Inhalation, Eyes, Ingestion
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**Potential Health Effects/Symptoms**

**Inhalation:** Can cause severe irritation and burns to the respiratory tract. May cause allergic respiratory reaction. Coughing. Wheezing. Shortness of breath. May cause lung damage.  
**Skin contact:** Causes skin burns. May cause allergic skin reaction. Harmful in contact with skin.  
**Eye contact:** Causes serious eye damage. Prolonged contact may cause eye burns and corneal injury.  
**Ingestion:** Irritation and corrosive action can occur in the mouth, stomach tissue and digestive tract if swallowed. May cause burns of mouth and throat if swallowed. May be harmful if swallowed.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Barium sulfate	None	Lung
Fatty acids, tall-oil, reaction products with tetraethylenepentamine	None	No Records
Tetraethylene pentamine	Oral LD50 (Rat) = 3.99 g/kg Oral LD50 (Rat) = 2.1 g/kg Dermal LD50 (Rabbit) = 0.66 g/kg	Irritant, Mutagen, Allergen
Bisphenol A, epichlorohydrin polymer, diethylenetriamine adduct	None	No Records
4,4'-Isopropylidenediphenol	Oral LD50 (Rat) = 4,100 mg/kg Oral LD50 (Rat) = 3,300 mg/kg Oral LD50 (Mouse) = 5,280 mg/kg Oral LD50 (Mouse) = 2,500 mg/kg Oral LD50 (Mouse) = 4,100 mg/kg	Allergen, Blood, Irritant, Kidney, Reproductive, Spleen
Diethylenetriamine	Oral LD50 (Rat) Approximate 1,140 mg/kg Oral LD50 (Rat) = 1,080 mg/kg Oral LD50 (Rat) = 2.33 g/kg	Allergen, Irritant, Eyes
Limestone	None	Nuisance dust
Diiron trioxide	None	Allergen, Cardiac, Central nervous system, Irritant, Kidney, Liver, Lung

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Barium sulfate	No	No	No
Fatty acids, tall-oil, reaction products with tetraethylenepentamine	No	No	No
Tetraethylene pentamine	No	No	No
Bisphenol A, epichlorohydrin polymer, diethylenetriamine adduct	No	No	No
4,4'-Isopropylidenediphenol	No	No	No
Diethylenetriamine	No	No	No
Limestone	No	No	No
Diiron trioxide	No	No	No

**12. ECOLOGICAL INFORMATION**

**Ecological information:** Not available.

## 13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

**Recommended method of disposal:** Follow all local, state, federal and provincial regulations for disposal.

**Hazardous waste number:** D005. Barium. D002: Corrosive. Wastes must be tested using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes.

## 14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration.

### U.S. Department of Transportation Ground (49 CFR)

**Proper shipping name:** Amines, liquid, corrosive, n.o.s. (Tetraethylene pentamine, Diethylenetriamine)  
**Hazard class or division:** 8  
**Identification number:** UN 2735  
**Packing group:** III

### International Air Transportation (ICAO/IATA)

**Proper shipping name:** Amines, liquid, corrosive, n.o.s. (Tetraethylene pentamine, Diethylenetriamine)  
**Hazard class or division:** 8  
**Identification number:** UN 2735  
**Packing group:** III

### Water Transportation (IMO/IMDG)

**Proper shipping name:** AMINES, LIQUID, CORROSIVE, N.O.S. (Tetraethylene pentamine, Diethylenetriamine)  
**Hazard class or division:** 8  
**Identification number:** UN 2735  
**Packing group:** III  
**Marine pollutant:** Tetraethylene pentamine

## 15. REGULATORY INFORMATION

### United States Regulatory Information

**TSCA 8 (b) Inventory Status:** All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.

**TSCA 12 (b) Export Notification:** None above reporting de minimis

**CERCLA/SARA Section 302 EHS:** None above reporting de minimis.  
**CERCLA/SARA Section 311/312:** Immediate Health, Delayed Health  
**CERCLA/SARA Section 313:** This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). 4,4'-Isopropylidenediphenol (CAS# 80-05-7).  
**CERCLA Reportable quantity:** Barium sulfate (CAS# 7727-43-7) 1,000 lbs. (454 kg)

**California Proposition 65:** This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

### Canada Regulatory Information

**CEPA DSL/NDL Status:** All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

## 16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: 3

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