

Henkel Electronic Materials

PRODUCT NUMBER: EC801013

ISSUE DATE: 27-June-2010



***** MATERIAL SAFETY DATA SHEET *****

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: TRA-BOND 2151 HARDENER
Hardener.

COMPANY ADDRESS: Henkel Electronic Materials
15350 Baranca Parkway
Irvine, CA 92618

EMERGENCY CONTACT NUMBERS:
MEDICAL: 1-877-671-4608 (toll free) or 1-303-592-1711
(24 hours - Poison Control Center)
TRANSPORT: CHEMTREC: 1-800-424-9300 (24 hours)
CHEMTREC International: 1-703-527-3887 (call collect)
Contact Information: 1-949-789-2500
Internet: www.henkel.com/electronics

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER!
CORROSIVE. CAUSES SEVERE BURNS TO SKIN.
CORROSIVE. CAUSES SEVERE OR PERMANENT DAMAGE TO EYES.
HARMFUL IF INHALED.
EYE IRRITANT.
CORROSIVE IF SWALLOWED.
RESPIRATORY SENSITIZER.
SKIN SENSITIZER.
Amber Liquid Slight Amine Odor

EYE: Extremely severe irritant/corrosive. May cause severe burns which could lead to permanent damage or total loss of vision. The vapor and the liquid may cause burning, intense irritation and excessive watering of the eye.

SKIN CONTACT: Corrosive, causes permanent skin damage. Can be rapidly absorbed through skin. Repeated and/or prolonged contact may cause skin sensitization.

INHALATION: Vapor or aerosol, if generated, can cause irritation of the eyes, nose and respiratory tract. Avoid breathing vapors or mists. Exposure to high concentrations may produce lung damage.

INGESTION: Corrosive to mouth, throat and stomach.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL FAMILY	Amines		
COMPONENT	CAS NUMBER	CONCENTRATION (% by weight)	
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	>50	
Bisphenol A, (chloromethyl)oxirane polymer, reaction product with diethylene glycol bis(3-aminopropyl ether)	68585-28-4	20 - 35	

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Silicon dioxide, crystalline free

112945-52-5

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4. FIRST-AID MEASURES

EYE	Immediately irrigate with eyewash solution or clean water, holding the eyelids apart, for at least 15 minutes. Obtain immediate medical attention.
SKIN CONTACT	Immediately flush with large amounts of water; use soap if available. Remove contaminated clothing, including shoes, after flushing has begun. Obtain immediate medical attention.
INHALATION	Remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Get medical attention.
INGESTION	DO NOT attempt to give anything by mouth to an unconscious person. DO NOT induce vomiting. If individual is conscious, give milk or water to dilute stomach contents. Keep warm and quiet. Get prompt medical attention.

5. FIREFIGHTING MEASURES

AUTOIGNITION	Approximately 500 °F
FLASH POINT	> 100 °C (Closed Cup)
EXTINGUISHING MEDIA	Foam; Water Fog; CO ₂ ; Dry Chemical
SPECIAL FIREFIGHTING PROCEDURES	A self contained breathing apparatus and suitable protective clothing should be worn in fire conditions.
FIRE & EXPLOSION HAZARDS	Combustible at high temperatures.
HAZARDOUS COMBUSTION PRODUCTS	Carbon monoxide, carbon dioxide, ammonia, amines.
LOWER EXPLOSION LIMIT (%)	Not determined.
UPPER EXPLOSION LIMIT (%)	Not determined.

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK PROCEDURES	No smoking, flames or flares in hazard area. Keep unnecessary people away; isolate hazard area and deny entry. Employee must wear appropriate protective clothing and equipment to prevent any possibility of skin contact with this substance. Wear rubber safety shoes or rubber boots over leather safety shoes. Ventilate area. Do not allow to enter drains, sewers or watercourses. Absorb spillages onto sand, earth or any suitable absorbent material. Scrape up and place in suitably labeled container for disposal. Disposal should be in accordance with local, state or national legislation. Wash the spillage area with water. Washings must be prevented from entering surface water drains.
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For safety and environmental precautions, please review entire Material Safety Data Sheet for necessary information.

7. HANDLING AND STORAGE

STORAGE TEMPERATURE	25 °C
SHELF LIFE, (Days)	180
HANDLING/STORAGE	Keep in a tightly closed container. Protect from physical damage. Store in a cool, dry area away from water.
SENSITIVITY TO STATIC ELECTRICITY	No
SPECIAL SENSITIVITY	Store in tightly closed containers to protect from atmospheric moisture. Use and store with adequate exhaust ventilation.
SENSITIVITY TO MECHANICAL IMPACT	No

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

COMPONENT	EXPOSURE LIMITS		
	ACGIH	OSHA	Mfg Working Standard
Silicon dioxide, crystalline free	10 mg/m ³ PEL (total dust); 5 mg/m ³ PEL (respirable fraction, listed under Particulates not otherwise regulated).	15 mppcf TWA (respirable fraction); 5 mg/m ³ TWA (respirable fraction); 50 mppcf TWA (total dust); 15 mg/m ³ TWA (total dust)	
VENTILATION REQUIREMENTS	Use in a well-ventilated area.		
EYE PROTECTION REQUIREMENTS	Safety glasses, goggles or face shield to protect against splashing.		
GLOVE REQUIREMENTS	Impervious neoprene or rubber gloves are recommended.		
CLOTHING REQUIREMENTS	Employee must wear appropriate protective clothing and equipment to prevent any possibility of skin contact with this substance. Uniforms, coveralls, or a lab coat should be worn. Rubber boots and apron if exposure is severe.		
CHANGE/REMOVAL OF CLOTHING	Remove contaminated clothing and launder before reuse. Discard shoes, belts, wallets, and any other contaminated leather items.		
WASH REQUIREMENTS	Wash before eating, drinking, or using toilet facilities.		
RESPIRATOR REQUIREMENTS	NIOSH approved respirator if required. Self-contained breathing apparatus in emergency and non-routine situations.		

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM	Liquid
COLOR	Amber
ODOR	Slight Amine
ODOR THRESHOLD	Not available
OXIDIZING PROPERTIES	Not applicable
SOLUBILITY IN WATER	Soluble
PARTITION COEFFICIENT (n-octanol/water)	Not applicable
SPECIFIC GRAVITY (WATER=1)	1.000
EVAPORATION RATE	Not applicable
VAPOR PRESSURE (mmHg)	3 mm Hg @ 21°C
VAPOR DENSITY (air = 1)	7.59
VOLATILES	None
VOLATILE ORGANIC COMPOUNDS	Not available
AUTOIGNITION	Approximately 500 °F
FLASH POINT	> 100 °C (Closed Cup)

10. STABILITY AND REACTIVITY

STABILITY	Stable
STABILITY DETAIL	Stable under normal temperature and pressure.
MATERIALS TO AVOID	Acids, Strong oxidizers, Epoxy resins
HAZARDOUS DECOMPOSITION PRODUCTS	Carbon monoxide, carbon dioxide, ammonia, amines.
HAZARDOUS POLYMERIZATION CONDITIONS	Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

ROUTE OF ENTRY	Eye Contact; Skin Contact; Inhalation; Ingestion
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CARCINOGEN	<u>IARC</u> (group)	<u>NTP</u>	<u>OSHA Substance</u> <u>Specific Regulation</u>
COMPONENT			
There is no evidence that this product poses a carcinogenic risk under normal conditions of handling and use.			
CHRONIC (LONG TERM) EFFECTS OF EXPOSURE			
EFFECTS OF CHRONIC EXPOSURE		The severity of acute effects is such that significant repeated or prolonged exposure is unlikely.	
TARGET ORGANS		Eyes; Skin; Respiratory system; Gastrointestinal	
RESPIRATORY SENSITIZATION		Sensitizer. May cause allergic reaction.	
SKIN SENSITIZATION		Sensitizer. May cause allergic reaction.	
PRODUCT TOXICOLOGY			
PRODUCT INFORMATION		This material is a severe irritant and may cause burns following skin and eye contact.	
EYE IRRITATION		This material is a severe irritant and may cause burns following skin and eye contact.	
COMPONENT	ORAL TOXICITY	NOTES ON ORAL TOXICITY	
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Oral LD50: Rat 3160 mg/kg	Corrosive to mouth, throat and stomach.	
COMPONENT	DERMAL TOXICITY	NOTES ON DERMAL TOXICITY	
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Dermal LD50: Rabbit 2500 mg/kg Dermal LD50: Rat > 2150 mg/kg	Corrosive.	
COMPONENT	INHALATION TOXICITY	NOTES ON INHALATION TOXICITY	
3,3'-Oxybis(ethyleneoxy)bis(propylamine)		Inhalation of dust or vapor may cause severe irritation to the nasal passages and/or the respiratory system.	
COMPONENT		NOTES ON EYE IRRITATION	
3,3'-Oxybis(ethyleneoxy)bis(propylamine)		Extremely severe irritant/corrosive. May cause severe burns which could lead to permanent damage or total loss of vision.	

12. ECOLOGICAL INFORMATION

POTENTIAL EFFECT ON ENVIRONMENT	Do not allow to enter drains, sewers or watercourses.
MOBILITY	The product is soluble in water.
POTENTIAL TO BIOACCUMULATE	The product has low potential for bioaccumulation.
ECOTOXICITY	May cause harm to aquatic organisms.
AQUATIC TOXICITY	None Established

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13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHODS	Disposal should be in accordance with local, state or national legislation.
EMPTY CONTAINER WARNINGS	Empty containers may contain product residue; follow MSDS and label warnings even after they have been emptied.

14. TRANSPORTATION INFORMATION

This section provided for general information only. The shipping description below may not represent requirements for all modes of transportation, packaging, shipping methods or locations outside of the United States.

FOR MORE COMPLETE TRANSPORTATION REGULATORY INFORMATION PLEASE REFER TO THE SHIPPING DOCUMENTS ACCOMPANYING THE SHIPMENT OF THIS PRODUCT.

DOT CLASSIFICATION

PROPER SHIPPING NAME	POLYAMINES, LIQUID, CORROSIVE, N.O.S.
TECHNICAL NAME	(3,3'-[Oxybis(2,1-ethanedioxy)]bis-1-propanamine)
HAZARD CLASS	8
SUB. HAZARD CLASS	
U.N. NUMBER	UN2735
PACKING GROUP	II

ICAO/IATA CLASSIFICATION

PROPER SHIPPING NAME	POLYAMINES, LIQUID, CORROSIVE, N.O.S.
TECHNICAL NAME	(3,3'-[Oxybis(2,1-ethanedioxy)]bis-1-propanamine)
HAZARD CLASS	8
SUB. HAZARD CLASS	
U.N. NUMBER	UN2735
PACKING GROUP	II

The information provided herein may not include the impact of additional regulatory requirements (eg, for materials meeting the definition of a hazardous waste under RCRA, hazardous substances under CERCLA, and/of marine pollutants under CWA or other similar federal, state or local laws) or any associated exceptions or exemptions under regulations applicable to the transport of this material.

15. REGULATORY INFORMATION

TSCA	This product is manufactured in compliance with all provisions of the Toxic Substances Control Act, 15 U.S.C. 2601 et. seq.
Canadian Domestic Substance List (DSL)	Is on DSL
China (IECSC)	On the IECSC Inventory.
Korea (KECI)	On the KECI Inventory.

SARA - Section 313 (Superfund Amendments and Reauthorization Act of 1986 - 40CFR 372)	CAS NUMBER
Contains no substances at or above the reporting threshold under Section 313.	

CALIFORNIA PROPOSITION 65

WARNING: This product contains the following chemicals that are known to the State of California to cause cancer, birth defects or other reproductive harm.

Unless a concentration is specified in Section 2 of the MSDS, the below chemical/s are present in trace

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amounts.

COMPONENT

CAS NUMBER

None reportable.

16. OTHER INFORMATION

HMIS® Hazard Ratings

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs by OSHA's 29 CFR 1910.1200, we choose to provide them as a service to our customers using HMIS®. These ratings are to be used only with a fully implemented HMIS® program. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be considered.

NPCA recommends that employers must determine appropriate PPE for the actual conditions under which this product is used in their workplace. For information on PPE codes, consult the HMIS® Implementation Manual.

When two ratings are provided for Health, the first represents the material 'as supplied', and the second represents the material 'in use'.

* = chronic health hazard

HMIS® is a registered trademark of the National Paint and Coatings Association (NPCA).

Health

Flammability

Physical Hazard

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PREPARED BY:

Regulatory Affairs

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