

NATIONAL STARCH AND CHEMICAL

MSDS ID: EC180729

MSDS DATE 20-December-2004



*** MATERIAL SAFETY DATA SHEET ***

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MSDS ID: EC180729
PRODUCT NAME: ECCOBOND® 286 WHITE, PART B
Epoxy Adhesive (Hardener)
Manufacturer: Emerson & Cuming
A National Starch & Chemical Company
46 Manning Road
Billerica, MA 01821

EMERGENCY CONTACT NUMBERS:

MEDICAL: 866-359-5657 (Health & Safety Call Center-24 hours)
TRANSPORT: CHEMTREC: 800.424.9300 (24 hours)
CHEMTREC International: 703.527.3887 (call collect)
Corporate Emergency Phone: 978.436.9781 (8AM-5PM, Mon-Fri EST)
MSDS Requests/Cust. Service: 781.828.3300 (8AM-5PM, Mon-Fri EST)

2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL FAMILY COMPONENT	Formulated Epoxy Resin	CAS NUMBER	CONCENTRATION (% by weight)
4,7,10-Trioxotridecane-1,13-diamine		4246-51-9	10 - 20
Epoxy resin		PROPRIETARY	5 - 10

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER!
CORROSIVE. CAUSES SEVERE OR PERMANENT DAMAGE TO EYES.
SEVERE SKIN IRRITANT. MAY CAUSE PERMANENT DAMAGE.
HARMFUL IF INHALED.
EYE IRRITANT.
HARMFUL IF SWALLOWED.
RESPIRATORY SENSITIZER.

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SKIN SENSITIZER. White Paste 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	Severely irritating; may cause 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	Severe irritation to mouth, throat, and stomach.

4. FIRST-AID MEASURES

EYE	Immediately irrigate with eyewash solution or clean water, holding the eyelids apart, for at least 10 minutes. Obtain 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	If individual is conscious, give water to dilute stomach contents. Get prompt medical attention. DO NOT attempt to give anything by mouth to an unconscious person.

5. FIREFIGHTING MEASURES

AUTOIGNITION	Not available
FLASH POINT	> 200 °F
EXTINGUISHING MEDIA	CO ₂ ; Dry Chemical; Water Spray
SPECIAL FIREFIGHTING PROCEDURES	Fire fighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes.
FIRE & EXPLOSION HAZARDS	A self contained breathing apparatus and suitable protective clothing should be worn in fire conditions.
HAZARDOUS COMBUSTION PRODUCTS	Carbon dioxide, carbon monoxide, oxides of nitrogen and unknown organics. Aldehydes
LOWER EXPLOSION LIMIT (%)	Not applicable
UPPER EXPLOSION LIMIT (%)	Not applicable

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK PROCEDURES	Absorb spillages onto sand, earth or any suitable absorbent material. Sweep up and shovel into waste drums. Wash the spillage area with water.
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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)	365
HANDLING/STORAGE	Store in cool, dry place. Keep in a well ventilated place.
SPECIAL SENSITIVITY	Keep away from heat.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION REQUIREMENTS	Local exhaust.
EYE PROTECTION REQUIREMENTS	Wear safety glasses with side shields.
GLOVE REQUIREMENTS	The use of chemically resistant gloves is recommended.
CLOTHING REQUIREMENTS	Employee must wear appropriate protective clothing and equipment to prevent any possibility of skin contact with this substance.
CHANGE/REMOVAL OF CLOTHING	Remove contaminated clothing and launder before reuse.
WASH REQUIREMENTS	Wash before eating, drinking, or using toilet facilities.
RESPIRATOR REQUIREMENTS	Local exhaust.

9. PHYSICAL AND CHEMICAL PROPERTIES

PURE SUBSTANCE OR MIXTURE	Mixture
PHYSICAL FORM	Paste
COLOR	White
ODOR	Amine
ODOR THRESHOLD	Not available
PH AS IS	Not applicable
pH IN (1%) SOLUTION	Not applicable
OXIDIZING PROPERTIES	Not applicable
BOILING POINT	Not applicable
MELTING/FREEZING POINT	Not applicable
SOLUBILITY IN WATER	Soluble
PARTITION COEFFICIENT (n-octanol/water)	Not determined.
SPECIFIC GRAVITY (WATER=1)	2.000
BULK DENSITY	Not available
EVAPORATION RATE	Not applicable
VAPOR PRESSURE (mmHg)	Negligible @ 25°C
VAPOR DENSITY (air = 1)	Not applicable
VOLATILES	Negligible
VOLATILE ORGANIC COMPOUNDS	Negligible
AUTOIGNITION	Not available
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10. STABILITY AND REACTIVITY

STABILITY	Stable
STABILITY DETAIL	Material is stable under normal temperatures and pressures.
MATERIALS TO AVOID	Strong oxidizers, Strong Lewis acids, Mineral acids
CONDITIONS TO AVOID	Elevated temperatures
HAZARDOUS DECOMPOSITION PRODUCTS	Carbon dioxide, carbon monoxide, oxides of nitrogen and unknown organics. Aldehydes

11. TOXICOLOGICAL INFORMATION

ROUTE OF ENTRY Skin Contact; Eye Contact; Ingestion

CHRONIC (LONG TERM) EFFECTS OF EXPOSURE

TARGET ORGANS	Eyes; Skin; Respiratory system
RESPIRATORY SENSITIZATION	Sensitizer. May cause allergic reaction.
SKIN SENSITIZATION	Sensitizer. May cause allergic reaction.
CARCINOGEN	No.

PRODUCT TOXICOLOGY

PRODUCT INFORMATION This health hazard assessment is based on a consideration of the composition of this product.
This material is a severe irritant and may cause burns following skin and eye contact.

COMPONENT	ORAL TOXICITY	NOTES ON ORAL TOXICITY
4,7,10-Trioxytridecane-1,13-diamine	Oral LD50: Rat 3160 mg/kg	Corrosive to mouth, throat, and stomach.

COMPONENT	DERMAL TOXICITY	NOTES ON DERMAL TOXICITY
4,7,10-Trioxytridecane-1,13-diamine	Dermal LD50: Rabbit 2500 mg/kg Dermal LD50: Rat > 2150 mg/kg	Corrosive.

COMPONENT	INHALATION TOXICITY	NOTES ON INHALATION TOXICITY
4,7,10-Trioxytridecane-1,13-diamine		Inhalation of dust or vapor may cause severe irritation to the nasal passages and/or the respiratory system.

COMPONENT	NOTES ON EYE IRRITATION
4,7,10-Trioxytridecane-1,13-diamine	Extremely severe irritant/corrosive. May cause severe burns which could lead to permanent damage or total loss of vision.

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12. ECOLOGICAL INFORMATION

POTENTIAL TO BIOACCUMULATE	Unknown.
AQUATIC TOXICITY	None Established

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHODS	Disposal should be in accordance with local, state or national legislation.
EMPTY CONTAINER	Empty containers may contain product residue; follow MSDS and label
WARNINGS	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 Not Regulated

ICAO/IATA CLASSIFICATION Not classified as dangerous.

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 All components are on the TSCA 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 amounts.

COMPONENT	CAS NUMBER
Phenyl glycidyl ether	122-60-1
Epichlorohydrin	106-89-8

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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).

<u>Health</u>	<u>Flammability</u>	<u>Reactivity</u>
3	1	0

RECOMMENDED USE

Adhesive

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FOR INFORMATION CONTACT:

Emerson & Cuming Product Safety:

Tel: 978.436.9781

Fax: 978.436.9707

ADDITIONAL INFORMATION: The information given and the recommendations made herein apply to our product(s) alone and are not combined with other product(s). Such are based on our research and on data from other reliable sources and are believed to be accurate. No guaranty of accuracy is made. It is the purchaser's responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes.