



**VARIAN**

# **TORR SEAL**

( Loctite Corporation - Hysol 1C )

## **MATERIAL SAFETY DATA SHEET**

VARIAN P/N 953-0001, 953-0002, 953-0004

Part A - RESIN

Part B - HARDENER

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Revision Date: 04/05/2005

Issue date: 04/06/2005

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product name:** Hysol 1C Varian Epoxy Adhesive  
**Product type:** Epoxy Resin  
**Company address:**  
Henkel Corporation  
1001 Trout Brook Crossing  
Rocky Hill, Connecticut 06067

**Item No. :** 83187\_RESIN  
**Region:** United States  
**Contact Information:**  
Telephone: 860.571.5100  
Emergency telephone: 860.571.5100  
Internet: www.loctite.com

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous components</u>	<u>%</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>	<u>OTHER</u>
Epichlorohydrin-4,4'-isopropylidene diphenol resin 25068-38-6	30-60	None	None	None
Tremolite 14567-73-8	10-30	1 mg/m <sup>3</sup> TWA as Fe	= 0.1 f/cc TWA see 1910.1001	None
Antigorite 12135-86-3	10-30	None	None	None
Talc 14807-96-6	10-30	2 mg/m <sup>3</sup> TWA respirable fraction, particulate matter containing no asbestos and < 1% crystalline silica	= 20 mppcf TWA	50 ppm
Anthophyllite 17068-78-9	1-5	None	0.1 fiber/cc TWA fibers longer than 5 µm 1.0 fiber/cc Excursion Limit 30 min. Cancer and lung disease hazard - see 29 CFR 1910.1001 - does not include non- asbestiform actinolite, tremolite or anthophyllite	None
Titanium dioxide 13463-67-7	1-5	10 mg/m <sup>3</sup> TWA	15 mg/m <sup>3</sup> TWA total dust	None

### 3. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

##### HMIS:

**Physical state:** Viscous liquid  
**Color:** White  
**Odor:** None

**HEALTH:** 2\*  
**FLAMMABILITY:** 1  
**PHYSICAL HAZARD:** 1  
**Personal Protection:** See Section 8

**WARNING:** MAY CAUSE ALLERGIC SKIN REACTION.  
MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION.

**Relevant routes of exposure:** Eye contact, Ingestion, Inhalation, Skin contact

#### Potential Health Effects

**Item No. :** 83187\_RESIN

**Product name:** Hysol 1C Varian Epoxy Adhesive

**Inhalation:** May cause irritation to nose and throat. Mild respiratory tract irritation. Coughing.  
**Skin contact:** Allergic skin reaction. Moderate skin irritation. Itching. Redness.  
**Eye contact:** Moderate eye irritation. Redness.  
**Ingestion:** Not expected under normal conditions of use.

**Existing conditions aggravated by exposure:** Skin disorders. Skin allergies. Respiratory disorders. Eye disorders.

**See Section 11 for additional toxicological information.**

#### 4. FIRST AID MEASURES

**Inhalation:** Remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

**Skin contact:** Immediately flush skin with plenty of water (using soap, if available). Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

**Eye contact:** Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

**Ingestion:** DO NOT induce vomiting unless directed to do so by medical personnel. Keep individual calm. Get medical attention if symptoms develop and persist.

**Notes to physician:** None.

#### 5. FIRE-FIGHTING MEASURES

**Flash point:** Greater than 93°C (200°F) Pinsky Martens closed cup

**Autoignition temperature:** Not available

**Flammable/Explosive limits-lower %:** Not available

**Flammable/Explosive limits-upper %:** Not available

**Extinguishing media:** Foam, dry chemical or carbon dioxide.

**Special fire fighting procedures:** Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

**Unusual fire or explosion hazards:** In the event of fire, cool tanks with water spray. Closed containers may rupture (due to build up of pressure) when exposed to extreme heat.

**Hazardous combustion products:** Oxides of carbon. Irritating organic fragments. Acids. Aldehydes.

#### 6. ACCIDENTAL RELEASE MEASURES

**Environmental precautions:** Prevent product from entering drains or open waters.

**Clean-up methods:** Remove all ignition sources. Immediately contact emergency personnel. Scrape up as much material as possible. Clean residue with soap and water. Store in a closed container until ready for disposal.

## 7. HANDLING AND STORAGE

**Handling:** Keep away from heat, spark and flame. Do not breathe mist or vapors. Keep container closed. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

**Storage:** Store in original container until ready to use. Keep in a cool, well ventilated area away from heat, sparks and open flame. Keep container tightly closed until ready for use.

**Incompatible products:** Refer to Section 10.

For information on product shelf life contact Henkel Customer Service at (800) 243-4874.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering controls:** Use local exhaust ventilation to maintain airborne concentrations below established exposure limits.

**Respiratory protection:** Use a NIOSH approved air-purifying respirator if the potential to exceed established exposure limits exists.

**Skin protection:** Chemical resistant, impermeable gloves.

**Eye/face protection:** Chemical splash goggles or safety glasses with side shields.

See Section 2 for exposure limits.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state:</b>	Viscous liquid
<b>Color:</b>	White
<b>Odor:</b>	None
<b>Vapor pressure:</b>	Nil
<b>pH:</b>	Not applicable
<b>Boiling point/range:</b>	Greater than 260°C (500°F)
<b>Melting point/range:</b>	Not available
<b>Specific gravity:</b>	1.57
<b>Vapor density:</b>	Not available
<b>Evaporation rate:</b>	Not available
<b>Solubility in water:</b>	Insoluble
<b>Partition coefficient (n-octanol/water):</b>	Not available
<b>VOC content:</b>	< 0.05% (value for resin and hardener together) (estimated)

## 10. STABILITY AND REACTIVITY

**Stability:** Stable

**Hazardous polymerization:** Will not occur.

**Hazardous decomposition products:** None

**Incompatibility:** Strong acids. Strong bases. Strong oxidizers. Amines. Water.

**Conditions to avoid:** Excessive heat. Storage with incompatible materials.

## 11. TOXICOLOGICAL INFORMATION

### Carcinogen Status

Hazardous components	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen
Epichlorohydrin-4,4'-isopropylidene diphenol resin 25068-38-6	No	No	No
Tremolite 14567-73-8	No	Group 1	Yes
Antigorite 12135-86-3	No	No	No
Talc 14807-96-6	No	No	No
Anthophyllite 17068-78-9	Known Carcinogen	No	Yes
Titanium dioxide 13463-67-7	No	No	No

**Literature Referenced Target Organ & Other Health Effects**

Hazardous components	Health Effects/Target Organs
Epichlorohydrin-4,4'-isopropylidene diphenol resin 25068-38-6	Allergen, Irritant
Tremolite 14567-73-8	Lung, Mutagen, Carcinogen
Antigorite 12135-86-3	Lung, Some evidence of carcinogenicity, Mutagen
Talc 14807-96-6	Some evidence of carcinogenicity, Lung, Irritant
Anthophyllite 17068-78-9	Carcinogen, Mutagen, Lung
Titanium dioxide 13463-67-7	Irritant, Respiratory

**12. ECOLOGICAL INFORMATION**

Ecological information: Not available

**13. DISPOSAL CONSIDERATIONS**

Information provided is for unused product only.

Recommended method of disposal: Dispose according to EPA and local governmental regulations.

EPA hazardous waste number: Not a RCRA hazardous waste.

**14. TRANSPORT INFORMATION**

The shipping classifications in this section are for non-bulk packaging only (unless otherwise specified). Shipping classification may be different for bulk packaging.

**U.S. Department of Transportation Ground (49 CFR):**

Proper shipping name: Not regulated  
Hazard class or division: None  
Identification number: None  
Packing group: None

**International Air Transportation (ICAO/IATA):**

Proper shipping name: Not regulated  
Hazard class or division: None  
Identification number: None  
Packing group: None

**WaterTransportation (IMO/IMDG):**

Proper shipping name: Not regulated  
Hazard class or division: None  
Identification number: None  
Packing group: None  
Marine pollutant: None known

## 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.

**CERCLA/SARA Section 302 EHS:** None above reporting de minimus.  
**CERCLA/SARA Section 311/312:** Immediate Health Hazard, Delayed Health Hazard  
**CERCLA/SARA 313:** None above reporting de minimus.

**California Proposition 65:** This product contains a chemical known to the State of California to cause cancer.

### Canada Regulatory Information

**CEPA DSL/NDSL Status:** All components are listed on or are exempt from listing on the Domestic Substances List.  
**WHMIS hazard class:** D.2.B

## 16. OTHER INFORMATION

**This material safety data sheet contains changes from the previous version in sections:** First issue.

**Prepared by:** Gary Pierson, Sr. Product Safety and Regulatory Affairs Specialist

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Revision Date: 03/30/2005

Issue date: 03/30/2005

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: Hysol 1C Varian
Product type: Epoxy Hardener
Company address: Henkel Corporation
1001 Trout Brook Crossing
Rocky Hill, Connecticut 06067

Item No. : 83187\_HARDENER
Region: United States
Contact Information:
Telephone: 860.571.5100
Emergency telephone: 860.571.5100
Internet: www.loctite.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

Table with 5 columns: Hazardous components, %, ACGIH TLV, OSHA PEL, OTHER. Rows include Epoxy resin/Curing agent, Tremolite, Silica, quartz, Antigorite, Talc, Diethylene triamine, Anthophyllite, and 4,4'-Isopropylidenediphenol.

3. HAZARDS IDENTIFICATION

## EMERGENCY OVERVIEW

### HMIS:

**Physical state:** Viscous liquid  
**Color:** Tan  
**Odor:** Strong, Ammoniacal

<b>HEALTH:</b>	3*
<b>FLAMMABILITY:</b>	1
<b>PHYSICAL HAZARD:</b>	0
<b>Personal Protection:</b>	See Section 8

**DANGER:** CAUSES EYE AND SKIN BURNS.  
MAY CAUSE ALLERGIC SKIN AND RESPIRATORY REACTION.  
MAY CAUSE RESPIRATORY TRACT IRRITATION.  
MAY BE HARMFUL IF SWALLOWED.

**Relevant routes of exposure:** Eye contact, Ingestion, Inhalation, Skin contact

### Potential Health Effects

<b>Inhalation:</b>	Allergic respiratory reaction. May cause respiratory tract irritation. May cause irritation to nose and throat.
<b>Skin contact:</b>	May cause skin burns. Allergic skin reaction. Rash. Redness.
<b>Eye contact:</b>	Burns. Severe eye irritation. Redness. Tissue damage.
<b>Ingestion:</b>	May be harmful if swallowed. May cause burns of mouth and throat if swallowed.

**Existing conditions aggravated by exposure:** Skin disorders. Skin allergies. Respiratory disorders. Eye disorders.

**See Section 11 for additional toxicological information.**

## **4. FIRST AID MEASURES**

<b>Inhalation:</b>	Remove 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 shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if symptoms occur.
<b>Eye contact:</b>	Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
<b>Ingestion:</b>	DO NOT induce vomiting unless directed to do so by medical personnel. Keep individual calm. Get medical attention immediately.
<b>Notes to physician:</b>	None.

## **5. FIRE-FIGHTING MEASURES**

<b>Flash point:</b>	Greater than 101.6°C (215°F) (estimated)
<b>Autoignition temperature:</b>	Not available
<b>Flammable/Explosive limits-lower %:</b>	Not available
<b>Flammable/Explosive limits-upper %:</b>	Not available
<b>Extinguishing media:</b>	Water spray (fog), foam, dry chemical or carbon dioxide.
<b>Special fire fighting procedures:</b>	Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.
<b>Unusual fire or explosion hazards:</b>	In the event of fire, cool tanks with water spray.
<b>Hazardous combustion products:</b>	Oxides of carbon. Oxides of nitrogen. Irritating organic fragments.



## 6. ACCIDENTAL RELEASE MEASURES

<b>Environmental precautions:</b>	Prevent product from entering drains or open waters.
<b>Clean-up methods:</b>	Remove all ignition sources. Immediately contact emergency personnel. Scrape up as much material as possible. Clean residue with soap and water. Store in a closed container until ready for disposal.

## 7. HANDLING AND STORAGE

<b>Handling:</b>	Keep away from heat, spark and flame. Do not breathe mist or vapors. Keep container closed. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.
<b>Storage:</b>	Store in original container until ready to use. Keep in a cool, well ventilated area away from heat, sparks and open flame. Keep container tightly closed until ready for use.
<b>Incompatible products:</b>	Refer to Section 10.

For information on product shelf life contact Henkel Customer Service at (800) 243-4874.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<b>Engineering controls:</b>	Use local exhaust ventilation to maintain airborne concentrations below established exposure limits.
<b>Respiratory protection:</b>	Use a NIOSH approved air-purifying respirator if the potential to exceed established exposure limits exists.
<b>Skin protection:</b>	Chemical resistant, impermeable gloves. Use chemical resistant, impermeable clothing including gloves and either an apron or body suit to prevent skin contact.
<b>Eye/face protection:</b>	Chemical splash goggles or safety glasses with side shields.

See Section 2 for exposure limits.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state:</b>	Viscous liquid
<b>Color:</b>	Tan
<b>Odor:</b>	Strong, Ammoniacal
<b>Vapor pressure:</b>	<1 mmHg @ 20°C (68°F)
<b>pH:</b>	Not applicable
<b>Boiling point/range:</b>	207°C (404°F)
<b>Melting point/range:</b>	Not available
<b>Specific gravity:</b>	1.65
<b>Vapor density:</b>	3.5
<b>Evaporation rate:</b>	Not available
<b>Solubility in water:</b>	Slightly soluble
<b>Partition coefficient (n-octanol/water):</b>	Not available
<b>VOC content:</b>	<0.1% (value for resin and hardener together)

## 10. STABILITY AND REACTIVITY

<b>Stability:</b>	Stable
<b>Hazardous polymerization:</b>	Polymerization is a highly exothermic reaction and may generate sufficient heat to cause thermal decomposition and/or rupture containers.
<b>Hazardous decomposition products:</b>	None
<b>Incompatibility:</b>	Strong acids. Strong bases. Strong oxidizers. Amines. Water.
<b>Conditions to avoid:</b>	Temperatures above 37.8°C (100°F). Excessive heat. Storage with incompatible materials. Avoid mixing resin (Part A) and curing agent (Part B) in batches greater than 2 pound (.9 kg) unless you plan to use immediately. Failure to observe these precautions may result in excessive heat build-up causing an exotherm.

## 11. TOXICOLOGICAL INFORMATION

### Carcinogen Status

Hazardous components	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen
Epoxy resin/Curing agent 68610-56-0	No	No	No
Tremolite 14567-73-8	No	Group 1	Yes
Silica, quartz 14808-60-7	Known Carcinogen	Group 1	Yes
Antigorite 12135-86-3	No	No	No
Talc 14807-96-6	No	No	No
Diethylene triamine 111-40-0	No	No	No
Anthophyllite 17068-78-9	Known Carcinogen	No	Yes
4,4'-Isopropylidenediphenol 80-05-7	No	No	No

### Literature Referenced Target Organ & Other Health Effects

Hazardous components	Health Effects/Target Organs
Epoxy resin/Curing agent 68610-56-0	No data
Tremolite 14567-73-8	Lung, Mutagen, Carcinogen
Silica, quartz 14808-60-7	Some evidence of carcinogenicity, Lung, Immune system
Antigorite 12135-86-3	Lung, Some evidence of carcinogenicity, Mutagen
Talc 14807-96-6	Some evidence of carcinogenicity, Lung, Irritant
Diethylene triamine 111-40-0	Allergen, Eyes, Irritant
Anthophyllite 17068-78-9	Carcinogen, Mutagen, Lung
4,4'-Isopropylidenediphenol 80-05-7	Allergen, Blood, Irritant, Kidney, Spleen, Reproductive

## 12. ECOLOGICAL INFORMATION

Ecological information: Not available

## 13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Dispose according to EPA and local governmental regulations.

EPA hazardous waste number: Not a RCRA hazardous waste.

## 14. TRANSPORT INFORMATION

The shipping classifications in this section are for non-bulk packaging only (unless otherwise specified). Shipping classification may be different for bulk packaging.

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

**Proper shipping name:** Diethylenetriamine solution  
**Hazard class or division:** 8  
**Identification number:** UN 2079  
**Packing group:** II  
**Exceptions:** (Not more than 1 Liter) Consumer Commodity ORM-D

Item No. : 83187\_HARDENER

Product name: Hysol 1C Varian

**International Air Transportation (ICAO/IATA):**

**Proper shipping name:** Diethylenetriamine solution  
**Hazard class or division:** 8  
**Identification number:** UN2079  
**Packing group:** II

**Water Transportation (IMO/IMDG):**

**Proper shipping name:** Diethylenetriamine solution  
**Hazard class or division:** 8  
**Identification number:** UN2079  
**Packing group:** II  
**Marine pollutant:** None known

**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.

**CERCLA/SARA Section 302 EHS:** None.  
**CERCLA/SARA Section 311/312:** Immediate Health Hazard  
**CERCLA/SARA 313:** None above reporting de minimus.

**California Proposition 65:** This product contains a chemical known to the State of California to cause cancer.

**Canada Regulatory Information**

**CEPA DSL/NDSL Status:** All components are listed on or are exempt from listing on the Domestic Substances List.  
**WHMIS hazard class:** E, D.2.A, D.2.B

**16. OTHER INFORMATION**

This material safety data sheet contains changes from the previous version in sections: Corrected information in Section(s) 14.

**Prepared by:** Gary Pierson, Sr. Product Safety and Regulatory Affairs Specialist

**DISCLAIMER:** The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation does not assume responsibility for any results obtained by persons over whose methods Henkel Corporation has no control. It is the user's responsibility to determine the suitability of Henkel's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any of Henkel Corporation's products. In light of the foregoing, Henkel Corporation specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation further disclaims any liability for consequential or incidental damages of any kind, including lost profits.