



DEVCON PLASTIC STEEL EPOXY (S5) RESIN

Chemwatch Material Safety Data Sheet

Issue Date: 19-Oct-2012

X9317SP

CHEMWATCH 02-0801

Version No:2.1.1.1

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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

DEVCON PLASTIC STEEL EPOXY (S5) RESIN

SYNONYMS

"PART: DS-5"

PROPER SHIPPING NAME

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(contains bisphenol A/ epichlorohydrin resin, liquid)

PRODUCT USE

Resin component of two part epoxy system.

NOTE: The product is unregulated for Road and Rail transport when transported in (a) packagings; (b) IBCs; or (c) any other receptacle not exceeding 500 kg(L).

SUPPLIER

Company: ITW Polymers & Fluids

Address:

100 Hassall Street

Wetherill Park

NSW, 2164

Australia

Telephone: +61 2 9757 8800

Emergency Tel: 1800 039 008

Emergency Tel: +61 3 9573 3112

Fax: +61 2 9757 3855

Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE

HAZARDOUS SUBSTANCE. DANGEROUS GOODS. According to the Criteria of NOHSC, and the ADG Code.

RISK

- Irritating to eyes and skin.
- May cause SENSITISATION by skin contact.
- Toxic to aquatic organisms, may cause long-

SAFETY

- Avoid contact with skin.
- Avoid contact with eyes.
- Wear suitable gloves.

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Section 2 - HAZARDS IDENTIFICATION

- Use appropriate container to avoid environmental contamination.
- Avoid release to the environment. Refer to special instructions/Safety data sheets.
- This material and its container must be disposed of as hazardous waste.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
bisphenol A/ epichlorohydrin resin, liquid	25068-38-6	30-60
iron	7439-89-6	1-10
benzyl alcohol	100-51-6	1-5
silicon powder amorphous	7440-21-3	1-5
silica crystalline - quartz	14808-60-7	0.1-1
ingredients nonhazardous		balance

Section 4 - FIRST AID MEASURES

SWALLOWED

- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.

EYE

- If this product comes in contact with the eyes:
 - Wash out immediately with fresh running water.
 - Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
 - Seek medical attention without delay; if pain persists or recurs seek medical attention.
 - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

- If skin contact occurs:
 - Immediately remove all contaminated clothing, including footwear.
 - Flush skin and hair with running water (and soap if available).
 - Seek medical attention in event of irritation.

INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.

NOTES TO PHYSICIAN

Treat symptomatically.

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Section 5 - FIRE FIGHTING MEASURES

- Prevent, by any means available, spillage from entering drains or water course.
- Use water delivered as a fine spray to control fire and cool adjacent area.

FIRE/EXPLOSION HAZARD

- Combustible.
- Slight fire hazard when exposed to heat or flame.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- On combustion, may emit toxic fumes of carbon monoxide (CO).

Combustion products include: carbon dioxide (CO₂), aldehydes, other pyrolysis products typical of burning organic material.

FIRE INCOMPATIBILITY

- Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

HAZCHEM

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Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

Environmental hazard - contain spillage.

- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact with the substance, by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.

MAJOR SPILLS

Environmental hazard - contain spillage.

Moderate hazard.

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- DO NOT allow clothing wet with material to stay in contact with skin.
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.

SUITABLE CONTAINER

- Metal can or drum
- Packaging as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³	Peak ppm	Peak mg/m ³	TWA F/CC	Notes
Australia Exposure Standards	iron (Inspirable dust (not otherwise classified))		10						
Australia Exposure Standards	silicon powder amorphous (Silicon (a))		10						(see Chapter 14)
Australia Exposure Standards	silica crystalline - quartz (Silica - Crystalline Quartz)		0.1						(see Chapter 14)

The following materials had no OELs on our records

- bisphenol A/ epichlorohydrin resin, liquid:
- benzyl alcohol:

CAS:25068- 38- 6 CAS:25085- 99- 8
CAS:100- 51- 6

MATERIAL DATA

BENZYL ALCOHOL:

BISPHENOL A/ EPICHLOROHYDRIN RESIN, LIQUID:

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IRON:

Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations.

SILICA CRYSTALLINE - QUARTZ:

SILICON POWDER AMORPHOUS:

The concentration of dust, for application of respirable dust limits, is to be determined from the fraction that penetrates a separator whose size collection efficiency is described by a cumulative log-normal function with a median aerodynamic diameter of 4.0 μm (+) 0.3 μm and with a geometric standard deviation of 1.5 μm (+) 0.1 μm , i.e..generally less than 5 μm .

BISPHENOL A/ EPICHLOROHYDRIN RESIN, LIQUID:

For epichlorohydrin

Odour Threshold Value: 0.08 ppm

NOTE: Detector tubes for epichlorohydrin, measuring in excess of 5 ppm, are commercially available.

Exposure at or below the recommended TLV-TWA is thought to minimise the potential for adverse respiratory, liver, kidney effects.

Odour Safety Factor (OSF)

OSF=0.54 (EPICHLOROHYDRIN).

IRON:

The recommended TLV is thought to reduce the likelihood of respiratory irritation and skin irritation from exposure to aerosols and mists of soluble iron salts.

BENZYL ALCOHOL:

Exposure limits with "skin" notation indicate that vapour and liquid may be absorbed through intact skin. Absorption by skin

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Because the margin of safety of the quartz TLV is not known with certainty and given the associated link between silicosis and lung cancer it is recommended that quartz concentrations be maintained as far below the TLV as prudent practices will allow.

WARNING: For inhalation exposure ONLY:

This substance has been classified by the ACGIH as A2 Suspected Human Carcinogen.

PERSONAL PROTECTION

RESPIRATOR

- Type AX-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

EYE

- Safety glasses with side shields.
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent].

HANDS/FEET

- When handling liquid-grade epoxy resins wear chemically protective gloves (e.g nitrile or nitrile-butatoluene rubber), boots and aprons.
- DO NOT use cotton or leather (which absorb and concentrate the resin), polyvinyl chloride, rubber or polyethylene gloves (which absorb the resin).
- DO NOT use barrier creams containing emulsified fats and oils as these may absorb the resin; silicone-based barrier creams should be reviewed prior to use.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:.

NOTE:

- The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.
- Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.

OTHER

- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.

ENGINEERING CONTROLS

■ Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.

Refer also to protective measures for the other component used with the product. Read both MSDS before using; store and attach

MSDS together.

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Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Boiling Range (°C)	232	Solubility in water (g/L)	Partly Miscible
Flash Point (°C)	Not Available	pH (1% solution)	7 (5% slurry)
Decomposition Temp (°C)	Not Available	pH (as supplied)	Not Applicable
Autoignition Temp (°C)	Not Available	Vapour Pressure (kPa)	Negligible
Upper Explosive Limit (%)	Not Available	Specific Gravity (water=1)	1.62
Lower Explosive Limit (%)	Not Available	Relative Vapour Density (air=1)	>1
Volatile Component (%vol)	VOC 0	Evaporation Rate	Not Applicable

Section 10 - STABILITY AND REACTIVITY

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

- Accidental ingestion of the material may be damaging to the health of the individual.

EYE

- This material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation. Moderate inflammation may be expected with redness; conjunctivitis may occur with prolonged exposure.

SKIN

- Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.

This material can cause inflammation of the skin on contact in some persons.

Epoxy materials may cause allergic and/or contact dermatitis responses, which may occur on exposure or may become apparent only after repeated exposures. Sensitisation is possible.

The material may accentuate any pre-existing dermatitis condition.

INHALED

- Not normally a hazard due to non-volatile nature of product.

CHRONIC HEALTH EFFECTS

- Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population.

Sensitisation may give severe responses to very low levels of exposure, i.e. hypersensitivity. Sensitised persons should not be allowed to work in situations where exposure may occur.

TOXICITY AND IRRITATION

- Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply

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Section 11 - TOXICOLOGICAL INFORMATION

benzyl alcohol	GESAMP/EHS Composite List - GESAMP Hazard Profiles	D1: skin irritation/corrosion	2
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Section 12 - ECOLOGICAL INFORMATION

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

This material and its container must be disposed of as hazardous waste.

Avoid release to the environment.

Refer to special instructions/ safety data sheets.

Ecotoxicity Ingredient	Persistence: Water/Soil HIGH	Persistence: Air No Data Available	Bioaccumulation LOW	Mobility HIGH
bisphenol A/ epichlorohydrin resin, liquid iron	No Data Available	No Data Available	LOW	No Data Available
benzyl alcohol	LOW	No Data Available	LOW	HIGH
silicon powder amorphous	No Data Available	No Data Available	No Data Available	No Data Available
silica crystalline - quartz	No Data Available	No Data Available	No Data Available	No Data Available

Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Management Authority for disposal.
- Material may be disposed of by controlled burning in an approved incinerator or buried in an approved landfill.
- Prior to disposal in a landfill the material should be mixed with the other component and reacted to render the material inert.

Section 14 - TRANSPORTATION INFORMATION



■ Environmentally Hazardous Substances meeting the descriptions of UN 3077 or UN 3082 are not subject to this Code when transported by road or rail in;

- (a) packagings;
 - (b) IBCs; or
 - (c) any other receptacle not exceeding 500 kg(L).
- Australian Special Provisions (SP AU01) - ADG Code 7th Ed.
Labels Required: MISCELLANEOUS

HAZCHEM:

07 - (ADG)

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Section 14 - TRANSPORTATION INFORMATION

Maritime Transport IMDG:

IMDG Class: 9 IMDG Subrisk: None
UN Number: 3082 Packing Group: III
EMS Number: F-A,S-F Special provisions: 274 335
Limited Quantities: 5 L Marine Pollutant: Yes

Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(contains bisphenol A/ epichlorohydrin resin, liquid)

Section 15 - REGULATORY INFORMATION

Indications of Danger:

N Dangerous for the environment
Xi Irritant

POISONS SCHEDULE

S5

REGULATIONS

Regulations for ingredients

bisphenol A/ epichlorohydrin resin, liquid (CAS: 25068-38-6, 25085-99-8) is found on the following regulatory lists;

"Australia - Victoria Occupational Health and Safety Regulations - Schedule 9: Materials at Major Hazard Facilities (And Their Threshold Quantity) Table 2", "Australia Hazardous Substances", "Australia High Volume Industrial Chemical List (HVICL)", "Australia Inventory of Chemical Substances (AICS)", "Australia National Pollutant Inventory", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix E (Part 2)", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix F (Part 3)", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5", "OECD List of High Production Volume (HPV) Chemicals", "OSPAR National List of Candidates for Substitution – United Kingdom"

iron (CAS: 7439-89-6) is found on the following regulatory lists;

"Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (AQUA/1 to 6 - inorganic chemicals)", "Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (Domestic water supply - inorganic chemicals)", "Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (IRRIG - inorganic chemicals)", "Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (STOCK - inorganic chemicals)", "Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm - Domestic water supply quality", "Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (Aquatic habitat)", "Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (IRRIG)", "Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (STOCK)", "Australia Drinking Water Guideline Values For Physical and Chemical Characteristics", "Australia Exposure Standards", "Australia High Volume Industrial Chemical List (HVICL)", "Australia Inventory of Chemical Substances (AICS)", "Australia National Pollutant Inventory", "FisherTransport Information", "OECD List of High Production Volume (HPV) Chemicals", "WHO Guidelines for Drinking-water Quality - Chemicals for which guideline values have not been established"

benzyl alcohol (CAS: 100-51-6) is found on the following regulatory lists;

"Australia - Victoria Occupational Health and Safety Regulations - Schedule 9: Materials at Major Hazard Facilities (And Their Threshold Quantity) Table 2", "Australia Hazardous Substances", "Australia High Volume Industrial Chemical List (HVICL)", "Australia Inventory of Chemical Substances (AICS)", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "IMO IBC Code Chapter 17: Summary of minimum requirements", "IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk", "International Council of Chemical Associations (ICCA) - High Production Volume List", "International Fragrance Association

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Section 15 - REGULATORY INFORMATION

Surveillance", "Australia - Tasmania Hazardous Substances Prohibited for Specified Uses", "Australia - Tasmania Hazardous Substances Requiring Health Surveillance", "Australia - Western Australia Hazardous Substances Prohibited for Specified Uses or Methods of Handling", "Australia - Western Australia Hazardous Substances Requiring Health Surveillance", "Australia Australian Safety and Compensation Council (ASCC) Draft National Code of Practice for the Control of Workplace Hazardous Chemicals - Schedule 4 Hazardous chemicals Requiring Health Surveillance", "Australia Exposure Standards", "Australia Hazardous Substances", "Australia Hazardous Substances Requiring Health Surveillance", "Australia High Volume Industrial Chemical List (HVICL)", "Australia Inventory of Chemical Substances (AICS)", "Australia Occupational Health and Safety (Commonwealth Employment) (National Standards) Regulations 1994 - Hazardous Substances Requiring Health Surveillance", "Australia Work Health and Safety Regulations 2011 - Hazardous chemicals (other than lead) requiring health monitoring", "Australia Work Health and Safety Regulations 2011 - Restricted hazardous chemicals", "FisherTransport Information", "International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs", "International Fragrance Association (IFRA) Survey: Transparency List", "OECD List of High Production Volume (HPV) Chemicals", "United Nations Consolidated List of Products Whose Consumption and/or Sale Have Been Banned, Withdrawn, Severely Restricted or Not Approved by Governments"

No data for Devcon Plastic Steel Epoxy (S5) Resin (CW: 02-0801)

Section 16 - OTHER INFORMATION

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name	CAS
bisphenol A/ epichlorohydrin resin, liquid	25068-38-6, 25085-99-8
silica crystalline - quartz	14808-60-7, 122304-48-7, 122304-49-8, 12425-26-2, 1317-79-9, 70594-95-5, 87347-84-0

■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

www.chemwatch.net/references.

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

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Issue Date: 19-Oct-2012

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This is the end of the MSDS.

MATERIAL SAFETY DATA SHEET

MSDS DATE: 08/08/02

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Durham's Rock Hard Water Putty
SYNOMYS: None
PRODUCT CODES: None

MANUFACTURER: Donald Durham Company, Inc.
DIVISION:
ADDRESS: P.O. Box 804, Des Moines, Iowa 50304-0004

EMERGENCY PHONE: 515-243-0491

PREPARED BY: N/A

SECTION 1 NOTES: None

SECTION 2: HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

HAZARDOUS COMPONENTS:	OSHA PEL	ACGIH TLV	OTHER RECOMMENDED LIMITS	% (OPTIONAL)
Nuisance dust (CAS #: 14807-96-6; 9004-53-9; 26499-65-0)		15 mg/m ³ total or 5 mg/m ³ respirable dust		>99%

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Mechanical eye and skin irritation possible, but not likely. Prolonged exposures to excessive quantities of dust can result in lung damage.

ROUTES OF ENTRY: Inhalation.

POTENTIAL HEALTH EFFECTS

EYES: Mechanical irritation

SKIN: Mechanical irritation

INGESTION: No

INHALATION: Yes

ACUTE HEALTH HAZARDS: Inhalation of high concentrations may cause mechanical irritation and discomfort.

CHRONIC HEALTH HAZARDS: Repeated over-exposures can cause chronic respiratory system effects.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Excessive exposure to any dust may aggravate pre-existing respiratory conditions.

CARCINOGENICITY
OSHA: No ACGIH: No NTP: No IARC: No OTHER: No

SECTION 3 NOTES: None

SECTION 4: FIRST AID MEASURES

EYES: Flush with plenty of flowing water. Get medical attention if irritation persists.

SKIN: Wash off with water.

INGESTION: : Unlikely to cause effects

INHALATION. Remove to fresh air.

MATERIAL SAFETY DATA SHEET

MSDS DATE: 08/08/01

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: None known.

SECTION 4 NOTES: None

SECTION 5: FIRE-FIGHTING MEASURES

FLAMMABLE LIMITS IN AIR, UPPER: Not flammable
(% BY VOLUME) LOWER: No flammable

FLASH POINT:

F: None
C: None

METHOD USED: N/A

AUTOIGNITION TEMPERATURE:

F: None
C: None

NFPA HAZARD CLASSIFICATION

HEALTH: N/A	FLAMMABILITY: N/A	REACTIVITY: N/A
OTHER: N/A		

EXTINGUISHING MEDIA: None needed

SPECIAL FIRE FIGHTING PROCEDURES: None needed

UNUSUAL FIRE AND EXPLOSION HAZARDS: None

HAZARDOUS DECOMPOSITION PRODUCTS: None

SECTION 5 NOTES:

SECTION 6: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES: Not a RCRA waste. Use dust-suppression methods to clean up waste. Dispose according to state and local regulations.

SECTION 6 NOTES: None

SECTION 7: HANDLING AND STORAGE

HANDLING AND STORAGE: None special precautions.

OTHER PRECAUTIONS: None

SECTION 7 NOTES: None

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: See below.

VENTILATION : Local exhaust dust collection

RESPIRATORY PROTECTION: NIOSH-certified respiratory protection for dusts

EYE PROTECTION: Yes

SKIN PROTECTION: Yes

MATERIAL SAFETY DATA SHEET

MSDS DATE: 08/08/02

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: No

WORK HYGIENIC PRACTICES: Avoid generation of dust.

EXPOSURE GUIDELINES: OSHA PEL's for total and respirable dust exposures.

SECTION 8 NOTES: None

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Cream-colored powder

ODOR: Little odor

PHYSICAL STATE: Powder

pH AS SUPPLIED: N/A

pH (Other): N/a

BOILING POINT:

F: None

C: None

MELTING POINT:

F: None

C: NOne

FREEZING POINT:

F: None

C: None

VAPOR PRESSURE (mmHg):

@

F: None

C: None

VAPOR DENSITY (AIR = 1):

@

F: None

C: None

SPECIFIC GRAVITY (H₂O = 1):

@

F: N/A

C: N/A

EVAPORATION RATE: N/A

BASIS (=1): N/A

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (con't)

SOLUBILITY IN WATER: Not freely soluble.

PERCENT SOLIDS BY WEIGHT: 100%

PERCENT VOLATILE:

BY WT/ BY VOL @

F: None

C: None

VOLATILE ORGANIC COMPOUNDS (VOC):

WITH WATER: N/A LBS/GAL

WITHOUT WATER: N/A LBS/GAL

MOLECULAR WEIGHT: Not known

VISCOSITY: N/A

F: N/A

MATERIAL SAFETY DATA SHEET

C: N/A

MSDS DATE: 08/08/02

SECTION 9 NOTES: None

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID (STABILITY): None known

INCOMPATIBILITY (MATERIAL TO AVOID): None known

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: None Known

HAZARDOUS POLYMERIZATION: None

CONDITIONS TO AVOID (POLYMERIZATION): None known

SECTION 10 NOTES: None

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION: Same as for nuisance dusts

SECTION 11 NOTES: None

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: None known

SECTION 12 NOTES: None

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Comply with state and local regulations.

RCRA HAZARD CLASS: Not a RCRA waste.

SECTION 13: DISPOSAL CONSIDERATIONS (con't)

SECTION 13 NOTES: None

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION

PROPER SHIPPING NAME: Not applicable

HAZARD CLASS: Not applicable

ID NUMBER: Not applicable

PACKING GROUP: Not applicable

LABEL STATEMENT: Not applicable

WATER TRANSPORTATION

PROPER SHIPPING NAME: Not applicable

HAZARD CLASS: Not applicable

MATERIAL SAFETY DATA SHEET

MSDS DATE: 08/08/02

ID NUMBER: Not applicable
PACKING GROUP: Not applicable
LABEL STATEMENTS: Not applicable

AIR TRANSPORTATION

PROPER SHIPPING NAME: Not applicable
HAZARD CLASS: Not applicable
ID NUMBER: Not applicable
PACKING GROUP: Not applicable
LABEL STATEMENTS: Not applicable

OTHER AGENCIES: Conforms to ASTM D-4236

SECTION 14 NOTES: None

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

TSCA (TOXIC SUBSTANCE CONTROL ACT): Not applicable

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT): Not applicable

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT): Not applicable

311/312 HAZARD CATEGORIES: Not applicable

313 REPORTABLE INGREDIENTS: Not applicable

STATE REGULATIONS: Not applicable

INTERNATIONAL REGULATIONS: None known

SECTION 15 NOTES: None

SECTION 16: OTHER INFORMATION

OTHER INFORMATION: None known

LOCTITE CORPORATION

1001 TROUT BROOK CROSSING
 ROCKY HILL, CT 06067-3910
 EMERGENCY PHONE: (860) 571-5100 FAX: (860) 571-5465

MATERIAL SAFETY DATA SHEET

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Duro(R) Extra Time Epoxy Superior Strength
 Item No.: 81504
 Part No.: QM-50
 Product Type: Epoxy

2. COMPOSITION, INFORMATION ON INGREDIENTS

Ingredients	CAS No.	%
RESIN		
Epoxy resin	25068-38-6	85-90
Nonylphenol	25154-52-3	10-15
HARDENER		
Polyamide resin	68410-23-1	60-65
DIETHYLENETRIAMINE	111-40-0	15-20
PHENOL, 4,4'-ISOPROPYLIDENEDI-*	80-05-7	10-15
Epoxy resin	25068-38-6	5-10

* This component is listed as a SARA Section 313 Toxic Chemical.

Ingredients which have exposure limits

Exposure Limits (TWA) Ingredients	ACGIH (TLV)	OSHA (PEL)	OTHER
RESIN			
HARDENER			
DIETHYLENETRIAMINE	1 ppm skin 4.2mg/m ³ skin	1 ppm TWA 4mg/m ³	None
PHENOL, 4,4'-ISOPROPYLIDENEDI-	None	None	10 mg/m ³
Exposure Limits (STEL) Ingredients	ACGIH (TLV)	OSHA (PEL)	
RESIN			
HARDENER			

3. HAZARDS IDENTIFICATION

Toxicity: Eye and skin irritant. May irritate upper respiratory tract. May cause skin burns and corneal injury resulting in permanent impairment of vision including blindness. May cause sensitization of skin and respiratory tract.

Primary Routes of Entry: Ingestion, skin, inhalation

Signs and Symptoms of Exposure: Eye or skin irritation or injury. Allergic responses such as sensitization or dermatitis.

Existing Conditions Aggravated by Exposure: None known

Ingredients	Literature Referenced Target Organ and Other Health Effects	Carcinogen NTP IARC OSHA
RESIN		
Epoxy resin	ALG IRR	NO NO NO
Nonylphenol	ALG COR IRR KID	NO NO NO

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MATERIAL SAFETY DATA SHEET

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Product Name:
Item No.:Duro(R) Extra Time Epoxy Superior Strength
815043. HAZARDS IDENTIFICATION

(continued)

Abbreviations

ALG Allergen
COR Corrosive
IRR Irritant
SPL SpleenBLO Blood
EYE Eyes
KID Kidney4. FIRST AID MEASURES

Ingestion: Do not induce vomiting. Keep individual calm.
Obtain medical attention.

Inhalation: RESIN: Not Applicable
HARDENER: Remove to fresh air. If symptoms persist, obtain medical attention.

Skin Contact: Wash immediately with soap and water. Do not use solvents for cleaning skin.

Eye Contact: Flush copiously with water and get prompt medical attention.

5. FIRE FIGHTING MEASURES

Flash Point: More than 200°F Method: Tag Closed Cup

Recommended Extinguishing Agents: Carbon dioxide, foam, dry chemical

Special Firefighting Procedures: Not available

Hazardous Products formed by Fire or Thermal Decomp Before use, amine vapors may be evolved at high temperatures; oxides of carbon; unidentified organic compounds.

Unusual Fire or Explosion Hazards: None

Explosive Limits: { % by volume in air } Lower Not available
{ % by volume in air } Upper Not available

6. ACCIDENTAL RELEASE MEASURES

Steps to be taken in case of spill or leak: Avoid skin contact. Scrape up as much as possible. Clean residues with solvent or soap and water.

7. HANDLING AND STORAGE

Safe Storage: Store below 100°F
(Contact Loctite Customer Service 1-800-243-4874 for shelf life information)

Handling: Avoid skin contact. Keep away from eyes.
Do not breath vapors.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

Eyes: Safety glasses or goggles.
Skin: Rubber or plastic gloves.
Ventilation: Sufficient to maintain vapor concentration below TLV.
Respiratory: Not available

See Section 2 for Exposure Limits.

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MATERIAL SAFETY DATA SHEET

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Product Name: Duro(R) Extra Time Epoxy Superior Strength
Item No.: 815049. PHYSICAL AND CHEMICAL PROPERTIES

(continued)

Vapor Pressure: 18.5% Hardener
Vapor Density: Less than 5mm
Evaporation Rate: Not available
(Ether = 1) Not Available10. STABILITY AND REACTIVITYStability: Stable
Hazardous Polymerization: Will not occur
Incompatibility: Strong oxidizers, acids, chlorinated hydrocarbons.
Conditions to Avoid: Not available
Hazardous Decomposition Products (non-thermal): None11. TOXICOLOGICAL INFORMATION

See Section 3.

12. ECOLOGICAL INFORMATION

No data available

13. DISPOSAL CONSIDERATIONSRecommended methods of disposal: Incinerate following EPA and local regulations.
EPA Hazardous Waste Number NH - Not a RCRA Hazardous Waste Material14. TRANSPORTATION INFORMATION

DOT (49 CFR 172)

Domestic Ground Transport

Proper Shipping Name: Consumer Commodity (Not more than four liters);
Corrosive liquids, basic, organic, n.o.s.
(Contains diethylenetriamine)
(More than four liters)Hazard Class or Division: ORM-D (Not more than four liters);
Class 8, Packing Group III (More than four liters)
Identification Number: None (Not more than four liters);
UN 3267 (More than four liters)Marine Pollutant: Nonylphenol
IATA
Proper Shipping Name: Corrosive liquids, basic, organic, n.o.s.
(Contains diethylenetriamine)
Class or Division: Class 8, Packing Group III
UN or ID Number: UN 326715. REGULATORY INFORMATION

CA Proposition 65: No Prop65 chemicals are known to be present.

16. OTHER INFORMATION

Estimated NFPA(R) Code:

Health Hazard: 2

Fire Hazard: 1

Reactivity Hazard: 1

Corrosivity Hazard: 2