



MATERIAL SAFETY DATA SHEET

THE D.S. BROWN COMPANY
300 EAST CHERRY STREET
NORTH BALTIMORE, OHIO 45872 U.S.A.
TELEPHONE (419) 257-3561 FAX (419) 257-2200

TRANSPORTATION EMERGENCY CALL CHEMTREC @ 1-800-424-9300

1. PRODUCT IDENTIFICATION

Product Identifier : Delcrete / Delpatch 1494 DSB Part A
Synonyms : None
CAS Registry # : Proprietary **TSCA Status** : Listed
Molecular Formula : Proprietary **Molecular Weight** : Not Available
Chemical Family : Polyurethane **Chemical Name** : Isocyanate Terminated Prepolymer

2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Material</u>	<u>WT.%</u>	<u>CAS Registry #</u>
2,4-Toluene Diisocyanate (TDI)	<6%	584-84-9
2,6-Toluene Diisocyanate (TDI)	<2%	91-08-7

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200):

	<u>Exposure Limits 8 hrs. TWA (ppm)</u>		
	<u>OSHA PEL</u>	<u>ACGIH TWA</u>	<u>Supplier</u>
2,4-Toluene Diisocyanate (TDI) NTP Anticipated Human Carcinogen IARC Possible Human Carcinogen (Group 2B) ACGIH Not Classifiable as a Human Carcinogen (A4) OSHA Ceiling/STEL 0.02 ppm Ceiling ACGIH Ceiling/STEL 0.02 ppm Ceiling SARA 313 Regulated.	0.02 ppm	0.005 ppm	-
2,6-Toluene Diisocyanate (TDI) IARC Possible Human Carcinogen (Group 2B) ACGIH Not Classifiable as a Human Carcinogen (A4) ACGIH Ceiling/STEL 0.02 ppm Ceiling SARA 313 Regulated.	None Established	0.005 ppm	

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Concentrations above the TLV for Toluene Diisocyanate can be irritating to the respiratory tract (nose, throat and lungs). May cause difficulty in breathing, chest discomfort, a productive cough and a reduction in lung function (i.e. shortness of breath). Some individuals may be sensitized. Sensitized individuals can experience asthmatic attacks. High exposures to TDI may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chemical or hypersensitive pneumonitis with flu-like symptoms has also been reported. Effects can be immediate or delayed.

INHALATION: Some individuals may be sensitized. Sensitized individuals can experience asthmatic attacks. High exposures to TDI may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs).



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3. HAZARDS IDENTIFICATION Continued

Chemical or hypersensitive pneumonitis with flu-like symptoms has also been reported. Effects can be immediate or delayed.

EYE CONTACT: Liquid and vapors are irritating to eyes. May cause severe injury which may not be reversible.

SKIN CONTACT: May cause inflammatory effects to the skin or tissue at the site of contact. May cause dermatitis (skin redness, dryness, scaling, etc.) from repeated or prolonged contact. Repeated minimal contact may cause sensitization. Cured material is difficult to remove.

INGESTION: Can result in irritation and corrosive action in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea. Although it is highly improbable, material may be ingested through poor hygiene practices

Medical Conditions Aggravated: Asthma and other respiratory disorders.

CHRONIC: Certain health conditions are aggravated by exposure such as: Asthmatic type conditions, chronic bronchitis and other chronic respiratory conditions The National Toxicology Program reported TDI caused an increase in the number of tumors in exposed rats. The TDI was administered in corn-oil and introduced into the stomach. Based on this study, the NTP has listed TDI as being reasonably anticipated to be a carcinogen. IARC has listed TDI as having sufficient data to support carcinogenicity in experimental animals but inadequate evidence on human carcinogenicity.

4. FIRST AID MEASURES

INHALATION: Move to an area free from risk of further exposure. If not breathing, give mouth to mouth resuscitation. If breathing is difficult, give oxygen and obtain medical help immediately.

EYE CONTACT: Rinse with water immediately for 15 minutes. Obtain prompt medical attention.

SKIN CONTACT: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash thoroughly with soap and water. Get medical attention if irritation or rash develops on affected area. Wash clothing before reuse.

INGESTION: Do not induce vomiting. Never give anything by mouth to an unconscious person. Get immediate medical attention.

5. FIRE FIGHTING MEASURES

Flashpoint and Method : >93°C TCC
Autoignition Temperature : Unknown

Flammable Limits : Unknown



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5. FIRE FIGHTING MEASURES Continued

GENERAL HAZARD: Product is neither combustible nor flammable; however, under extreme heat product may undergo decomposition releasing toxic vapors.

FIRE FIGHTING INSTRUCTIONS: Downwind personnel should be evacuated. Do not reseal contaminated containers as pressure build-up may rupture them. Avoid skin contact.

EXTINGUISHING MEDIA: Carbon dioxide, dry chemical, water or water spray.

FIRE FIGHTING EQUIPMENT: People who are fighting fires must be protected against toxic and hazardous gases by wearing positive pressure self-contained breathing apparatus and full protective clothing. Do not breath vapors or fumes, avoid skin contact

HAZARDOUS COMBUSTION PRODUCTS: Hydrogen Cyanide, Carbon Monoxide, Carbon Dioxide, Oxides of Nitrogen and Isocyanate Vapors.

	NFPA	HMIS
Fire:	1	X
Health:	3	X
Reactivity:	1	X
Specific:	-	X

6. STABILITY AND REACTIVITY

GENERAL: Stable under normal storage conditions.

INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID: Water, Alcohols, Amines, Strong Bases, Metal Compounds and Surfactants may react with evolution of heat and Carbon Dioxide.

HAZARDOUS DECOMPOSITION: Hydrogen Cyanide, Carbon Monoxide, Carbon Dioxide, Oxides of Nitrogen and Isocyanate Vapors.

7. HANDLING AND STORAGE

STORAGE TEMPERATURE: Store containers at ambient temperature and pressure. Keep from sources of direct heat and moisture.

STORAGE PRESSURE: Seal containers with nitrogen blanket.

GENERAL: Store material in original containers. Keep from sources of direct heat and moisture. Seal containers with nitrogen blanket. Keep closed when not in use. Moisture contamination may evolve carbon dioxide gas which may rupture containers. Do not reuse empty containers as residue may be hazardous.



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8. EXPOSURE CONTROL / PERSONAL PROTECTION

ENGINEERING CONTROLS: Local exhaust should be used to maintain levels below the TLV for TDI when product is handled, processed or sprayed. At normal room temperatures (20°C), TDI levels quickly exceed the TLV unless properly ventilated.

PERSONAL PROTECTIVE EQUIPMENT:

Respiratory Protection: Maintain exposure below levels specified on page one of this MSDS. TDI has poor warning properties since the odor at which TDI can be detected is substantially higher than 0.02 ppm. An approved (NIOSH) positive pressure air-supplied respirator is required whenever TDI concentrations are not known or exceed the STEL or Ceiling Limit of 0.02 ppm or exceed the TWA of 0.005 ppm. Emergency situations may require the use of positive pressure self-contained breathing apparatus. Supplied air respirators or SCBA may be necessary during certain operations if exposure limits can not be controlled

PROTECTIVE CLOTHING: Use protective clothing impervious to this material. Selection of specific items such as gloves, boots, apron or full body suit will depend on operation. Remove contaminated clothing, wash skin area with soap and water. Use at a minimum long-sleeved work clothes, impervious neoprene or nitrile gloves and shoe covers.

Eye Protection: Use chemical safety goggles and full face shield. Do not wear contact lenses when working with this material.

9. PHYSICAL AND CHEMICAL PROPERTIES

VAPOR PRESSURE	: 3 x 10 ⁻⁴ mm Hg	VISCOSITY	: Not Applicable
VAPOR DENSITY	: Not Applicable	APPEARANCE	: Clear to amber
SPECIFIC GRAVITY	: ~1.1 @ 20°C	ODOR	: Slight Isocyanate
SOLUBILITY IN WATER	: Reacts Slowly	PHYSICAL STATE	: Liquid @ 25°C
EVAPORATION RATE	: Not Applicable	VOLATILES	: Negligible
pH	: Not Applicable	DECOMPOSITION TEMP	: Not Available
BOILING POINT	: >200°C	FREEZING POINT	: Not Applicable

10. ACCIDENTAL RELEASE MEASURES

LAND SPILL: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. If during transportation, call CHEM-TREC at (800) 424-9300. Large quantities may be mixed with dry chemical absorbent and may require excavation of contaminated soil. Take up small spills with dry chemical absorbent. Soak with dilute ammonia hydroxide or water alcohol mixture. Allow time for reaction to be complete before disposal.

WATER SPILL: Material reacts with water.



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11. TOXICOLOGICAL INFORMATION

TDI Oral LD₅₀ (rat) > 5000 mg/kg
Dermal LD₅₀ (rat) > 4000 mg/kg
Inhalation LC₅₀ (rat) > 480 mg/kg

12. ECOLOGICAL INFORMATION

No information available at this time.

13. DISPOSAL CONSIDERATIONS

Follow all applicable local, State and Federal disposal regulations.

14. TRANSPORT INFORMATION

DEPARTMENT OF TRANSPORTATION
PROPER SHIPPING NAME : Toxic Liquid, Organic, N.O.S. (Toluene Diisocyanate)
HAZARD CLASS : 6.1
Packing Group : PG III
IDENTIFICATION NUMBER (UN/NA) : UN2810

15. REGULATORY INFORMATION

CERCLA (Comprehensive Response Compensation, and Liability Act): Reportable Quantity: 100 pounds

SARA TITLE III (Superfund Amendments and Reauthorization Act): This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

<u>CHEMICAL</u>	<u>CAS NUMBER</u>	<u>WT%</u>
2,4-Toluene Diisocyanate (TDI)	584-84-9	<6%
2,6-Toluene Diisocyanate (TDI)	91-08-7	<2%

CALIFORNIA PROPOSITION 65: Toluene Diisocyanate is known to cause cancer by the State of California.



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16. OTHER INFORMATION

This MSDS complies with 29 CFR 1910.1200 (THE HAZARD COMMUNICATION STANDARD). Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, **The D.S. Brown** Company makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will **The D.S. Brown** Company be responsible for damages of any nature whatsoever resulting from the use of, misuse or reliance upon information. No representations or warranties, either express or implied, or merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to information or the product to which information refers. Regulatory requirements are subject to change and may differ from one location to another. It is the buyer's responsibility to ensure its activities comply with federal, state or provincial, and local laws and regulations.

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