



# MATERIAL SAFETY DATA SHEET

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## SECTION 1 – CHEMICAL IDENTIFICATION

Trade Name: 3-Aminopropyl diethylene glycol (DCA 163)      Date of Issue: July 1, 1991  
Revised Date: June 7, 1999  
Formula: HOCH<sub>2</sub>CH<sub>2</sub>OCH<sub>2</sub>CH<sub>2</sub>OCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub>  
Chemical Family: Alkanoamines  
Telephone Number: Information (281) 474-3271  
**Emergency Number: Chemtrec (800) 424-9300**

HMIS Hazard Rating      4 = Extreme  
Health: 2      3 = High  
Fire: 1      2 = Moderate  
Reactivity: 0      1 = Slight  
PPE rating to be supplied by user      0 = Least  
depending on use conditions.

## SECTION 2 – COMPOSITION

<u>Components</u>	<u>Percentage</u>	<u>TLV (ppm)</u>	<u>CAS #</u>
3-Aminopropyl diethylene glycol (DCA163)	>96	N.E.	112-33-4
Water	<2	N.E.	7732-18-5
Di-(3-aminopropyl) ether of diethylene glycol (DCA 221)	<2	N.E.	4246-51-9

Note: N.E. = Not Established    N/A = Not Applicable

## SECTION 3 – HAZARDS IDENTIFICATION

**Eye Contact:** Will cause pain, excess blinking and discharge. May cause moderate to severe conjunctivitis, seen as excess redness and swelling of the conjunctiva. Severe corneal injury may develop which, if not promptly and adequately treated, could lead to a permanent impairment of vision.

**Skin Contact:** Contact for a few minutes may cause mild discomfort or itching, with the development of local skin redness. Sustained contact may cause more severe discomfort or pain, with redness, swelling, fissures, tissue destruction and possibly bleeding into the inflamed area. Sustained contact could result in the absorption of harmful amounts of the product. Repeated skin contact may cause a cumulative dermatitis and aggravate any existing dermatitis.

**Inhalation:** Vapors are irritating and may cause chest discomfort and symptoms of bronchitis. Exposure to high concentrations may produce central nervous system effects such as mental and visual disturbances.

Ingestion: May be harmful or fatal if swallowed. Will cause severe irritation or burns of the mouth, throat, esophagus, and stomach. There will be swelling or ulceration, with pain in the mouth, throat, chest, and abdomen. Nausea, vomiting, diarrhea, dizziness, drowsiness, faintness, weakness, thirst, metabolic acidosis, circulatory collapse, blindness, coma, and death may result.

#### **SECTION 4 – FIRST AID MEASURES**

Eye Contact: Immediately flush with plenty of water for at least 15 minutes. Get medical attention.  
Skin Contact: Immediately remove contaminated clothing and shoes. Wipe excess material from skin and flush with water for at least 15 minutes. Use soap if available or follow by washing with soap and water. Do not reuse contaminated clothing without laundering. Discard shoes which have been contaminated with this material. If irritation persists, seek medical advice.  
Inhalation: Remove victim to fresh air. If breathing is difficult, give oxygen. If not breathing, administer artificial respiration. Get medical attention.  
Ingestion: Give water or milk. Do not induce vomiting. Get medical attention immediately.

#### **SECTION 5 – FIREFIGHTING MEASURES**

Extinguishing Media: Use water, alcohol or polymer foam, dry chemical, or carbon dioxide (CO<sub>2</sub>).  
Special Firefighting Procedures/Precautions: Firefighters should wear NIOSH approved self-contained breathing apparatus. Do not direct a solid stream of foam into hot, burning pools; this may cause frothing and increase fire intensity. Responders should wear protective clothing to prevent skin contact. Move containers from fire area. If unable to move, cool sealed containers with water.  
Unusual Fire and Explosion Information: Vapors may travel long distances to ignition sources and flash back. During a fire, oxides of nitrogen may be produced.  
Environmental Note: N/A.

#### **SECTION 6 – ACCIDENTAL RELEASE MEASURES**

Contain and recover using absorbent material to cover liquid. Prevent from entering sewers and waterways. Clean-up personnel should wear protective equipment to prevent contact.

#### **SECTION 7 – HANDLING AND STORAGE**

Containers should be grounded and/or bonded when material is transferred. Store in a cool, dry place. Keep away from heat, sparks, and flames.

#### **SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION**

Respiratory Protection: NIOSH approved respiratory protection for organic vapors.  
Ventilation: Utilize local exhaust to control vapors. Do not rely on general exhaust.  
Protective Gloves: Utilize appropriate impervious chemical gloves.

Eye Protection:	Chemical goggles and face shield.
Other Protective Equipment:	Wear additional protective clothing to prevent skin contact. This may include aprons, chemical resistant boots, and chemical resistant suits.
Work Practices:	Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet facilities. Promptly remove soiled clothing and wash thoroughly before reuse. Shower after work using plenty of soap and water.

## **SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES**

Boiling Point:	164 -166°C @ 10 mm Hg
Volatility/Vol (%):	N.E.
Vapor Pressure (mm Hg):	N.E.
Vapor Density (Air = 1):	5.6
Solubility in H <sub>2</sub> O:	100%
Appearance/Odor:	Light-colored liquid with a typical amine odor.
Specific Gravity (H <sub>2</sub> O = 1):	1.055
Flash Point:	331°F (166°C) PMCC, ASTM D93
Lower Explosive Limit:	1.4%
Upper Explosive Limit:	8.2%
Autoignition Temperature:	509°F (265°C) DIN 51794

## **SECTION 10 – STABILITY AND REACTIVITY**

Chemical Stability:	Stable.
Conditions to Avoid:	N/A.
Incompatible Materials:	Acids, mineral acids.
Decomposition Products:	Oxides of carbon and nitrogen.
Hazardous Polymerization:	Will not occur.

## **SECTION 11 – TOXICOLOGICAL INFORMATION**

ACGIH	3-Aminopropyl diethylene glycol	TLV:	N.E.	STEL:	N.E.
	Di-(3-aminopropyl) ether of diethylene glycol	TLV:	N.E.	STEL:	N.E.
OSHA	3-Aminopropyl diethylene glycol	PEL:	N.E.	STEL:	N.E.
	Di-(3-aminopropyl) ether of diethylene glycol	PEL:	N.E.	STEL:	N.E.
Irritation:	<b>3-aminopropyl diethylene glycol:</b>				
	Skin: 500 mg open MLD (rabbit)				UCDS** 1/20/72
	Eyes: 2 mg/24H SEV (rabbit)				85JCAE -, 633, 1986
	<b>di-(3-aminopropyl) ether of diethylene glycol:</b>				
	Skin: 0.5 ml/3M occluded SEV (rabbit)				NTIS 8EHQ-0392-2678
	Skin: 0.5 ml/1H occluded SEV (rabbit)				NTIS 8EHQ-0392-2678
Ingestion:	<b>3-aminopropyl diethylene glycol:</b>				
	LD50: 6500 mg/kg (rat)				AIHAAP 30, 470, 1969
	<b>di-(3-aminopropyl) ether of diethylene glycol:</b>				

Dermal:	LD50: 4290 mg/kg (rat)	AIHAAP 30, 470, 69 (2)
	<b>3-aminopropyl diethylene glycol:</b> LD50: 5990 uL/kg (rabbit)	AIHAAP 30, 470, 1969
	<b>di-(3-aminopropyl) ether of diethylene glycol:</b> LD50: 2500 uL/kg (rabbit)	AIHAAP 30, 470, 69 (2)

Di-(3-aminopropyl) ether of diethylene glycol (DCA-221) tested negative for mutagenicity in the Ames Salmonella Assay (Direct Plate).

May contain trace amounts of diethylene glycol, which has exhibited experimental carcinogenic effects in studies conducted with rats and mice. Diethylene glycol is not listed as a carcinogen by NTP, IARC, OSHA, or ACGIH.

Carcinogenicity listed by: NTP: No IARC: No OSHA: No

## **SECTION 12 – ECOLOGICAL INFORMATION**

Biodegradability: <30% Zahn-Wellens test. Difficult to eliminate.

## **SECTION 13 – DISPOSAL INFORMATION**

Place in a city, state, or federally permitted disposal facility. Handle in accordance with all applicable regulations.

## **SECTION 14 – TRANSPORTATION INFORMATION**

DOT Shipping Name: Amines, Liquid, Corrosive, n.o.s. (3-aminopropyl diethylene glycol), 8, UN 2735, PG II.

## **SECTION 15 – REGULATORY INFORMATION**

### **U.S. Regulations:**

TSCA: All components are listed on the TSCA inventory.

#### SARA TITLE III

Acute: Yes  
Chronic: Yes  
Fire: No  
Reactivity: No  
Pressure: No

TSCA 12(b) Export Notification: Not Listed

California Proposition 65: Not Listed

### **European Regulations:**

EINECS Number: DCA 163: 203-960-0  
DCA 221: 224-207-2

### **Canadian Regulations:**

All components are listed on the DSL.

**Japanese Regulations:**

DCA 163 and DCA 221 are not listed on the ENCS.

ENCS Number:	DCA 163:	Not listed
	DCA 221:	Not listed

**Australian Regulations:**

DCA 163 is not listed on the AICS. All other components are listed.

**Korean Regulations:**

DCA 163 is not listed on the ECL. All other components are listed.

ECL Number:	DCA 163:	Not listed
	DCA 221:	KE-27693

**SECTION 16 – OTHER INFORMATION****PPE Codes (NPCA-HMIS)**

<b>A</b> – Glasses	<b>G</b> – Glasses, Gloves, Vapor Respirator
<b>B</b> – Glasses, Gloves	<b>H</b> – Goggles, Gloves, Apron, Vapor Respirator
<b>C</b> – Glasses, Gloves, Apron	<b>I</b> – Glasses, Gloves, Dust/Vapor Respirator
<b>D</b> – Faceshield, Gloves, Apron	<b>J</b> – Goggles, Gloves, Apron, Dust/Vapor Respirator
<b>E</b> – Glasses, Gloves, Dustmask	<b>K</b> – Supplied Air, Gloves, Full Protective Suit, Boots
<b>F</b> – Glasses, Gloves, Apron, Dust Respirator	

**Disclaimer**

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