



Material Safety Data Sheet

DUNAPACK™ B 5504 Universal POLYOL

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: DUNAPACK™ B 5504 Universal POLYOL
 Product type and use: Formulated polyol based for polyurethane systems
 Company: DUNA-USA Inc.
 4210 FM 1405
 Baytown, TX, USA
 1-281-383-3862

In case of emergency call: CHEMTREC 1-800-424-9300 (24 HOURS DAY, 7 DAYS A WEEK)

2. HAZARDS IDENTIFICATION

Physical state: Liquid.
 Appearance: Colorless liquid.
 OSHA/HCS status: This material is classified hazardous under OSHA Hazard Communication Standard (29 CFR 1910.1200).
 Emergency overview: WARNING! Cause severe eye irritation. Causes skin irritation. May cause respiratory tract irritation. May cause allergic skin reaction. May be harmful if absorbed through skin or swallowed.
 General information: Read the entire MSDS for a more thorough evaluation of the hazards.
Potential health effects
 Routes of exposure: Inhalation. Ingestion. Skin contact. Eye contact.
 Eyes: Causes severe eye irritation.
 Skin: Causes skin irritation. May cause allergic skin reaction. May be harmful if absorbed through skin. The product contains components which may penetrate skin.
 Inhalation: May cause irritation of respiratory tract. Components of the product may be absorbed into the body by inhalation.
 Ingestion: Harmful if swallowed.
 Target organs: Eyes. Skin. Respiratory system. Kidneys. Liver.
 Chronic effects: May cause damage to the kidneys and liver.
 Signs and symptoms: Symptoms can include irritation, redness, scratching of the cornea, and tearing.
 Potential environmental effects: The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.



Material Safety Data Sheet

DUNAPACK™ B 5504 Universal POLYOL

3. COMPOSITION / INFORMATION ON INGREDIENTS

Name	CAS number	%
2-[2-(Dimethylamino)ethoxy]ethanol	1704-62-7	1 – 5
Diethanolamine	111-42-2	1 – 5
Glycerol, propoxylated	25791-96-2	1 – 5

Composition comments: All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. FIRST AID MEASURES

First aid procedures

Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove any contact lenses and open eyes wide apart. Get medical attention immediately. Continue to rinse.
Skin contact	Remove contaminated clothes and rinse skin thoroughly with water for at least 15 minutes. In case of allergic reaction or other skin disorders: Seek medical attention and bring along these instructions.
Inhalation	Move injured person into fresh air and keep person calm under observation. Get medical attention if any discomfort continues.
Ingestion	Rinse mouth thoroughly with water and give large amounts of milk or water, if person is conscious. Never give anything by mouth to an unconscious person. Only induce vomiting at the instruction of medical personnel. Get medical attention.
Notes to physician	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flammable properties	By heating and fire, toxic vapors/gases may be formed. This product is not flammable or combustible.
Extinguishing media	Suitable extinguishing media: use any media suitable for the surrounding fires.
Protection of firefighters	Protective equipment and precautions for firefighters: Use standard firefighting procedures and consider the hazards of other involved materials.
Special protective equipment for fire-fighters	Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace. Self-



Material Safety Data Sheet

DUNAPACK™ B 5504 Universal POLYOL

contained breathing apparatus and full protective clothing must be worn in case of fire.

Hazardous combustion products Carbon monoxide, nitrogene oxides, formaldehyde.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Avoid inhalation of vapors and contact with skin and eyes. Wear suitable protective clothing. See Section 8 of the MSDS for Personal Protective Equipment.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.
Methods for containment	Inform authorities if large amounts are involved.
Methods for cleaning up	Absorb spillage with suitable absorbent material. Collect in containers and seal securely. Containers with collected spillage must be properly labeled with correct contents and hazard symbol. For waste disposal, see Section 13 of the MSDS.
Other information	Clean up in accordance with all applicable regulations.

7. HANDLING AND STORAGE

Handling:	Local exhaust is recommended. Avoid inhalation of vapors and contact with skin and eyes. Wear eye/face protection. Wear protective gloves and appropriate clothing to prevent skin contact. Observe good industrial hygiene practices.
Storage:	Store in a well-ventilated place. Store in closed original container at temperatures between 10°C (50°F) and 30°C (86°F).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure limits

ACGIH

Components	Type	Value	Form
Diethanolamine (111-42-2)	TWA	1 mg/m ³	Inhalable fraction and vapour

U.S. - OSHA

Components	Type	Value	Form
Diethanolamine (111-42-2)	TWA	15 mg/m ³	
	TWA	3 ppm	

CANADA - ALBERTA

Components	Type	Value	Form



Material Safety Data Sheet

DUNAPACK™ B 5504 Universal POLYOL

Diethanolamine (111-42-2)

TWA	2 mg/m ³
TWA	0.46 ppm

CANADA – BRITISH COLUMBIA
Components

Type	Value	Form
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Diethanolamine (111-42-2)

TWA	2 mg/m ³
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CANADA – ONTARIO
Components

Type	Value	Form
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Diethanolamine (111-42-2)

TWA	2 mg/m ³
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CANADA – QUEBEC
Components

Type	Value	Form
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Diethanolamine (111-42-2)

TWA	13 mg/m ³
TWA	3 ppm

Engineering controls: Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors. Provide easy access to water supply and eye wash facilities.

Personal protective equipment

Eye / face protection Wear safety glasses with side shields (or goggles).

Skin protection Wear appropriate chemical resistant clothing to prevent any possibility of skin contact. Risk of contact: Wear suitable gloves. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.

Respiratory protection If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. Use a NIOSH-approved respirator if there is a potential for exposure to dust exceeding exposure limits (See 29 CFR 1910.134, respiratory protection standard).

General hygiene considerations Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.



Material Safety Data Sheet

DUNAPACK™ B 5504 Universal POLYOL

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Color:	Colorless.
Odor:	Not available
Odor threshold:	Not available.
Solubility (water)	Miscible.
Vapor pressure:	Not available.
Relative density:	1.04
VOC content:	Not available
Viscosity	385 cps at 21°C (69.8°F)

10. CHEMICAL STABILITY AND REACTIVITY INFORMATION

Chemical stability	Stable at normal conditions.
Conditions to avoid	Excessive heat.
Incompatible materials	Strong oxidizing agent. Strong acids. Copper. Isocyanates
Hazardous decomposition products	Carbon monoxide. Nitrogen Oxides Nitrates. Formaldehyde. Acetaldehyde. Furan. Dioxalane.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Toxicological data

Components

Diethanolamine (111-42-2)

Test Results

Acute Dermal LD50 Rabbit: 11.9 mg/kg
Acute Oral LD50 Rat: 710 mg/kg

2-[2-(Dimethylamino)ethoxy]ethanol (1704-62-7)

Acute Dermal LD50 Rabbit: 1345 mg/kg
Acute Oral LD50 Rat: 2347 mg/kg

Acute effects

Causes severe eye irritation. Causes skin irritation. May cause respiratory tract irritation. May be harmful if absorbed through skin or swallowed.

Local effects

Risk of serious damage to eyes. May cause redness and pain.

US ACGIH Threshold Limit Values: Skin designation

Diethanolamine (111-42-2) Can be absorbed through the skin.

Sensitization

May cause allergic skin reaction.



Material Safety Data Sheet

DUNAPACK™ B 5504 Universal POLYOL

<u>Chronic effects</u>	May cause damage to the liver and kidneys.
<u>Carcinogenicity</u>	This product is NOT considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
<i>ACGIH Carcinogens</i>	
Diethanolamine (111-42-2): Group A3 Confirmed animal carcinogen with unknown relevance to humans.	
<i>IARC Monographs. Overall Evaluation of Carcinogenicity</i>	
Diethanolamine (111-42-2): 3 Not classifiable as to carcinogenicity to humans.	
Epidemiology	Not available.
Mutagenicity	Not available.
Neurological effects	Not available.
Reproductive effects	Not available.
Teratogenicity	Not available.

12. ECOLOGICAL INFORMATION

Ecotoxicological data

Diethanolamine (111-42-2)	EC50 Water flea (Ceriodaphnia dubia): 61.8 - 86.04 mg/l 48 Hours. LC50 Fathead minnow (Pimephales promelas): > 100 mg/l 96 Hours
Ecotoxicity	The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	Not available.
Bioaccumulation / Accumulation	No data available.
Mobility in environmental media	The product is miscible with water. May spread in water systems.

13. DISPOSAL CONSIDERATIONS

Disposal instruction:	Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.
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14. TRANSPORT INFORMATION

<u>DOT Classification:</u>	Not regulated
<u>TDG Classification, IMDG Class, IATA-DGR Class:</u>	Not regulated.



Material Safety Data Sheet

DUNAPACK™ B 5504 Universal POLYOL

15. REGULATORY INFORMATION

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

Diethanolamine (CAS 111-42-2) 1.0 %

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

Diethanolamine (CAS 111-42-2) Listed.

CERCLA (Superfund) reportable quantity (lbs)

Diethanolamine (CAS 111-42-2) 100

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
 Delayed Hazard - Yes
 Fire Hazard - No
 Pressure Hazard - No
 Reactivity Hazard - No

Section 302 extremely hazardous substance - No

Section 311 hazardous chemical - Yes

Drug Enforcement Agency (DEA) - Not controlled

WHMIS status

Controlled

WHMIS classification

D2B - Other Toxic Effects - TOXIC



WHMIS labeling

Inventory status

<i>Country(s) or region</i>	<i>Inventory name</i>	<i>On inventory (yes/no)*</i>
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes



Material Safety Data Sheet

DUNAPACK™ B 5504 Universal POLYOL

Philippines Philippine Inventory of Chemicals and Chemical Substances (PICCS) Yes

United States & Puerto Rico Toxic Substances Control Act (TSCA) Inventory Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - California Hazardous Substances (Director's): Listed substance
Diethanolamine (CAS 111-42-2) Listed.

US - Massachusetts RTK - Substance: Listed substance
Diethanolamine (CAS 111-42-2) Listed.

US - New Jersey Community RTK (EHS Survey): Reportable threshold
Diethanolamine (CAS 111-42-2) 500 LBS

US - New Jersey RTK - Substances: Listed substance
Diethanolamine (CAS 111-42-2) Listed.

US - Pennsylvania RTK - Hazardous Substances: Listed substance
Diethanolamine (CAS 111-42-2) Listed.

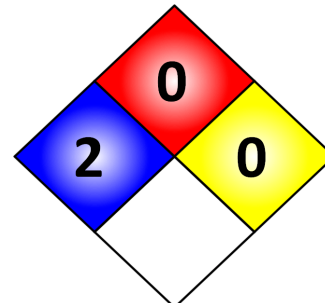
16. OTHER INFORMATION

Further information HMIS® is a registered trade and service mark of the NPCA. G - Safety Glasses, Gloves, Vapor respirator.

Disclaimer The information in the sheet was written based on the best knowledge and experience currently available.

Hazardous Material Information System (U.S.A.): National Fire Protection Association (U.S.A.):

2	Health
0	Flammability
0	Reactivity
G	Protective Equipment





Material Safety Data Sheet

DUNAPACK™ B 5504 Universal POLYOL

Notice to reader

While the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.