



95 Goodwin Street, East Hartford, CT., 06108 (860) 528-9838

Material Safety Data Sheet

Date Prepared 12/17/2010

SECTION I - IDENTIFICATION

IDENTITY (As Used on Label) **Armor Top Resin**
COMMON NAME Blocked Cycloaliphatic Diamine

HAZARD RATING 0 = Least 1 = Slight 2 = Moderate 3 = High 4 = Extreme	Health	3
	Flammability	1
	Reactivity	0
	Personal Protection	G

SECTION II - PRODUCT COMPONENTS

	CAS.#	OSHA PEL	ACGIH TLV
Blocked Cycloaliphatic Diamine	Proprietary ²	N.E. ¹	N.E.

¹None Established

²The manufacturer of the component states that they will provide additional information to a health professional in the event of a medical emergency.

T.S.C.A. Status - O.K. on all above components.

FOR SPILL, LEAK, FIRE, OR ACCIDENT, CALL CHEMTREC 24-HOUR EMERGENCY NUMBER 1-800-424-9300

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point	N.E.	Specific Gravity (H ₂ O = 1)	0.8-0.9
Vapor Pressure (mm Hg)	N.E.	Melting Point	N/A
Vapor Density (AIR = 1)	N/A	Evaporation rate (Butyl Acetate = 1)	N/A

Volatile Organic Compounds = Zero grams/liter

Solubility in Water Minimal, Reacts slowly with water

Appearance and Odor Pale yellow colored liquid. Amine odor.

SECTION IV - FIRE and EXPLOSION HAZARD DATA

Flash Point (Closed Cup Method)	171°F	Flammable Limits	LEL	UEL
			N/A	N/A

Extinguishing Media Dry chemicals, carbon dioxide, foam, water spray.

Special Firefighting Procedures

Firefighters should wear full emergency equipment with self-contained breathing apparatus. Irritating gases may be generated by fire.

Cool exposed containers with cold water spray to prevent pressure buildup that may rupture the containers.

SECTION V - REACTIVITY DATA

Stability	Unstable		Conditions to Avoid Keep container closed when not in use, protect from moisture.
	Stable	X	
Incompatibility (Materials to Avoid)		Strong oxidizers, alkaline materials and acids. Avoid moisture prior to use	
Hazardous Decomposition or Byproducts		By Fire- carbon monoxide, carbon dioxide, aldehydes, nitrogen.	
Hazardous Polymerization	May Occur		Conditions to Avoid Decomposition products from hydrolysis in water isophorone diamine and isobutylaldehyde
	Will Not Occur	X	

SECTION VI - HEALTH HAZARD DATA

Route(s) of Entry:	Inhalation?	Skin?	Ingestion?
	YES	YES	YES

Signs and Symptoms of Exposure Irritation on skin.

Health Hazards (Acute and Chronic) Note: Persons with lung disorders or who are sensitized should not use this product.

ACUTE - Irritation on skin and dermatitis. Corrosive

CHRONIC - Repeated overexposure will cause severe skin irritation, dermatitis and sensitization.

Sensitized persons may experience rapid irritation of skin upon exposure.

Carcinogenicity:	NTP?	IARC Monographs?	OSHA Regulated?
	NO	NO	NO

Medical Conditions Generally Aggravated by Exposure
Allergy, skin disorders.

Emergency and First Aid Procedures

EYES - **CORROSIVE**: Flush with water, holding lids open for 15 minutes or more. Call physician for advice if necessary.

SKIN - **CORROSIVE**; PROMPTLY wash with soap and water. DO NOT wash with solvents. Seek medical advice if irritation develops or persists.

INHALATION - Move person to fresh air if effects occur. If needed, give oxygen or artificial respiration to improve breathing. Consult physician.

INGESTION - Get medical attention immediately. Never give liquids to an unconscious or convulsing person.

SECTION VII - CONTROL MEASURES

Respiratory Protection (Specify Type)

Provide adequate exhaust ventilation; use a NIOSH - approved respirator if PELs/TLVs are exceeded.

Ventilation	Local Exhaust	If needed.	Special	None known.
	Mechanical	Adequate exhaust ventilation must exhaust AWAY from applicator.		

Protective Gloves	Natural or Neoprene gloves.	Eye Protection	Splash goggles or face shield.
-------------------	-----------------------------	----------------	--------------------------------

Other Protective Clothing or Equipment

Use rubber apron, face shield and appropriate clothing to prevent contact with skin. Launder contaminated clothing before reuse. Protective skin creams help cleaning with soap and water, gloves must still be worn.

An eye wash station or an adequate supply of clean water must be available at work area.

Work/Hygienic Practices Enforce careful handling to prevent splashing. Wash thoroughly after use.

SECTION VIII - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken in Case Material is Released or Spilled

Wear protective equipment to prevent exposure. Stop spill and dike to prevent spreading. Cover spill with absorbent materials and collect into containers. Clean contaminated area with detergent and water or a steam cleaner for best results.

Waste Disposal Method

Dispose in accordance with Federal, State, and Local requirements.

Precautions to be Taken in Handling and Storing

Keep containers tightly closed when not in use.

Other Precautions NONE KNOWN.

Prepared by William H. Greider, Jr. Technical Director

PLEASE NOTE "The above information is accurate to the best of our knowledge. However, since data, safety standards, and government regulations are subject to change and the conditions of handling and use, or misuse, are beyond our control, Dur-A-Flex, Inc. MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR RELIANCE THEREON. User should satisfy himself that he has all current data relevant to his particular use."



95 Goodwin Street, East Hartford, CT., 06108 (860) 528-9838

Material Safety Data Sheet

Date Prepared 12/17/2010

SECTION I - IDENTIFICATION	HAZARD RATING 0 = Least 1 = Slight 2 = Moderate 3 = Serious 4 = Extreme	Health	2
		Flammability	2
		Reactivity	1
		Personal Protection	G
IDENTITY (As Used on Label)		Armor Top Hardener	
COMMON NAME		Aliphatic Polyisocyanate Resin Solution	

SECTION II - PRODUCT COMPONENTS	CAS.#	OSHA PEL	ACGIH TLV
Homopolymer of HDI	28182-81-2	N.E. ¹	N.E.
Hexamethylene Diisocyanate (HDI) ²	822-06-0	N.E.	0.005ppm
Dipropylene glycol monomethyl ether acetate	88917-22-0	N.E.	N.E.
Methyl-1,3-dioxolan-2-one	108-32-7	N.E.	N.E.

¹not established

²Residual monomer content is less than 0.5% based on resin solids at the time of manufacture.

T.S.C.A. Status - O.K. on all above components.

FOR SPILL, LEAK, FIRE, OR ACCIDENT, CALL CHEMTREC 24-HOUR EMERGENCY NUMBER 1-800-424-9300

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS				
Boiling Point	DPMA	392°F	Specific Gravity (H ₂ O = 1)	1.11
Vapor Pressure (mm Hg)	HDI	4.7 x 10 ⁻⁷	Melting Point	N/A
Vapor Density (AIR = 1)	DPMA	6.6	Evaporation rate (Butyl Acetate = 1)	0.015
Volatile Organic Compounds (VOC) = 74 grams/liter				
Solubility in Water NOT SOLUBLE.				
Appearance and Odor Clear, mild ester-like odor.				

SECTION IV - FIRE and EXPLOSION HAZARD DATA				
Flash Point (Closed Cup Method)		186°F	Flammable Limits	LEL UEL
				1.21 vol% 5.35 vol%

Extinguishing Media Dry Chemicals, CO₂, Universal Type Foam.

Special Firefighting Procedures

Wear full protective equipment including self-contained breathing apparatus. During a fire, HDI vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. Closed container may explode when exposed to extreme heat or burst when contaminated with water (CO₂ evolved).

Unusual Fire and Explosion Hazards

Spills of this on hot fibrous insulations may lead to lowering of the autoignition temperatures resulting in possible spontaneous combustion

SECTION V - REACTIVITY DATA			
Stability	Unstable		Conditions to Avoid
	Stable	X	Keep containers closed when not in use. Avoid static discharge. Flammable vapors released at elevated temps.
Incompatibility (Materials to Avoid) Avoid oxidizers and phosphorus-containing materials.			
Hazardous Decomposition or Byproducts Fire may yield carbon monoxide and/or carbon dioxide.			
Hazardous Polymerization	May Occur	X	Conditions to Avoid
	Will Not Occur		Contact with moisture or other materials which react with isocyanates or temperatures above 400F.

SECTION VI - HEALTH HAZARD DATA

Route(s) of Entry:	Inhalation?	Skin?	Ingestion?
	Yes	YES	Yes

Signs and Symptoms of Exposure Irritation and redness of skin and eyes. Breathing difficulty.

Health Hazards (Acute and Chronic)

ACUTE - prolonged skin exposure can cause irritation, dermatitis. Inhalation of vapors can cause nasal and respiratory irritation, dizziness, headache, nausea.

CHRONIC - prolonged or repeated exposure to vapors may cause lung damage as well as increased sensitivity.

Carcinogenicity:	NTP?	IARC Monographs?	OSHA Regulated?
	NO	NO	NO

Medical Conditions Generally Aggravated by Exposure

Asthma and other respiratory disorders(bronchitis, emphysema, hyperreactivity), skin allergies, eczema.

Emergency and First Aid Procedures

EYES - Flush with water, holding lids open for 15 minutes or more. Call physician for advice if necessary.

Skin - remove contaminate clothing. Clean affected area with mild soap and water. If irritation or redness develops, seek medical attention.

INHALATION- move person away from source of exposure and into fresh air. If person is not breathing, give artificial respiration and seek medical attention immediately. If breathing difficulty develops, give oxygen and seek medical attention immediately.

****NOTE** PERSONS WITH LUNG DISORDERS OR WHO ARE SENSITIZED SHOULD NOT USE THIS PRODUCT.**

SECTION VII - CONTROL MEASURES

Respiratory Protection (Specify Type) Use NIOSH approved respirator as outlined in 30CFR11 and 29CFR 1910.134 effective for solvent and diisocyanate vapors.

Ventilation	Local Exhaust	Use in confined areas.	Special	Explosion proof fans when needed.
	Mechanical	Must be sufficient to maintain area below established TLV/PEL.		

Protective Gloves	Neoprene rubber gloves.	Eye Protection	Splash proof goggles.
-------------------	-------------------------	----------------	-----------------------

Other Protective Clothing or Equipment

Use other protective equipment such as rubber aprons and a face shield if danger of splashing is possible.

Eye wash station or clear water must be readily available. ENFORCE GOOD HYGIENE PRACTICES. No smoking or open lights in work area. Exposure to liquid, vapors, mists or fumes must be minimized.

Work/Hygienic Practices Launder contaminated clothing before use. Dispose contaminated leather shoes

SECTION VIII - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken in Case Material is Released or Spilled

Shut off and eliminate all ignition sources. Keep people away. Add sand, earth or other absorbent to spill area. Ventilate confined spaces. Open windows and doors, minimize breathing vapors and skin contact. Keep spill out of sewers by diking. Observe precautions for volatile, flammable vapors from absorbed material.

Waste Disposal Method

Incineration in accordance with local, state, and federal regulations.

Precautions to be Taken in Handling and Storing Keep containers tightly closed when not in use and away from excessive heat and flame. DO NOT pressurize, cut, weld, solder, drill or grind the containers.

Other Precautions Store in an OSHA approved area for flammable materials.

Prepared by William H. Greider, Jr. Technical Director

PLEASE NOTE "The above information is accurate to the best of our knowledge. However, since data, safety standards, and government regulations are subject to change and the conditions of handling and use, or misuse, are beyond our control, Dur-A-Flex, Inc. MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR RELIANCE THEREON. User should satisfy himself that he has all current data relevant to his particular use."



DUR-A-FLEX
INNOVATION FROM THE FLOOR UP

95 Goodwin Street, East Hartford, CT., 06108 (860) 528-9838

Material Safety Data Sheet

Date Prepared 12/17/2010

SECTION I - IDENTIFICATION	HAZARD RATING 0 = Least 1 = Slight 2 = Moderate 3 = High 4 = Extreme	Health	1
		Flammability	2
		Reactivity	0
		Personal Protection	G
IDENTITY (As Used on Label)	Armor Top Colorant: all colors		
COMMON NAME	Liquid Colorant Additive for Urethane		

SECTION II - PRODUCT COMPONENTS	CAS.#	OSHA PEL	ACGIH TLV
--	--------------	-----------------	------------------

SECTION II - PRODUCT COMPONENTS	CAS.#	OSHA PEL	ACGIH TLV
Dipropylene glycol monomethyl ether acetate	88917-22-0	NE ¹	NE
Titanium Dioxide	13463-67-7	15mg/m ³ (Dust)	10mmg/m ³
Red Iron Oxide	1332-37-2	10mg/m ³	5mg/m ³
Yellow Iron Oxide	51274-00-1	NE	NE
Carbon Black	1333-86-4	3.5mg/m ³ (dust)	3.5mg/m ³ (dust)

¹not established

T.S.C.A. Status - O.K. on all above components.

FOR SPILL, LEAK, FIRE, OR ACCIDENT, CALL CHEMTREC 24-HOUR EMERGENCY NUMBER 1-800-424-9300

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point	DPMA	392°F	Specific Gravity (H2O = 1)	1.11
Vapor Pressure (mm Hg)	77 °F	0.05	Melting Point	N/A
Vapor Density (AIR = 1)	DPMA	6.6	Evaporation rate (Butyl Acetate = 1)	0.015

Volatile Organic Compounds (VOC) = 74 grams/liter

Solubility in Water NOT SOLUBLE.

Appearance and Odor Clear, mild ester-like odor.

SECTION IV - FIRE and EXPLOSION HAZARD DATA

Flash Point (Closed Cup Method)	186°F	Flammable Limits	LEL	UEL
			1.21 vol%	5.35 vol%

Extinguishing Media Dry Chemicals, CO₂, Universal Type Foam.

Special Firefighting Procedures

Wear full protective equipment including self-contained breathing apparatus. During a fire, HDI vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. Closed container may explode when exposed to extreme heat or burst when contaminated with water (CO₂ evolved).

Unusual Fire and Explosion Hazards

Spills of this on hot fibrous insulations may lead to lowering of the autoignition temperatures resulting in possible spontaneous combustion

SECTION V - REACTIVITY DATA

Stability	Unstable		Conditions to Avoid Keep containers closed when not in use. Avoid static discharge. Flammable vapors released at elevated temps.
	Stable	X	

Incompatibility (Materials to Avoid) Avoid oxidizers and phosphorus-containing materials.

Hazardous Decomposition or Byproducts Fire may yield carbon monoxide and/or carbon dioxide.

Hazardous Polymerization	May Occur	X	Conditions to Avoid Contact with moisture or other materials which react with isocyanates or temperatures above 400F.
	Will Not Occur		

SECTION VI - HEALTH HAZARD DATA

Route(s) of Entry:	Inhalation?	Skin?	Ingestion?
	Yes	YES	Yes

Signs and Symptoms of Exposure Irritation and redness of skin and eyes. Breathing difficulty.

Health Hazards (Acute and Chronic)

ACUTE - prolonged skin exposure can cause irritation, dermatitis. Inhalation of vapors can cause nasal and respiratory irritation, dizziness, headache, nausea.

CHRONIC - prolonged or repeated exposure to vapors may cause lung damage as well as increased sensitivity.

Carcinogenicity:	NTP?	IARC Monographs?	OSHA Regulated?
	NO	NO	NO

Medical Conditions Generally Aggravated by Exposure

Asthma and other respiratory disorders (bronchitis, emphysema, hyperreactivity), skin allergies, eczema.

Emergency and First Aid Procedures

EYES - Flush with water, holding lids open for 15 minutes or more. Call physician for advice if necessary.

Skin - remove contaminated clothing. Clean affected area with mild soap and water. If irritation or redness develops, seek medical attention.

INHALATION - move person away from source of exposure and into fresh air. If person is not breathing, give artificial respiration and seek medical attention immediately. If breathing difficulty develops, give oxygen and seek medical attention immediately.

****NOTE** PERSONS WITH LUNG DISORDERS OR WHO ARE SENSITIZED SHOULD NOT USE THIS PRODUCT.**

SECTION VII - CONTROL MEASURES

Respiratory Protection (Specify Type) Use NIOSH approved respirator as outlined in 30CFR11 and 29CFR 1910.134

effective for solvent and diisocyanate vapors.

Ventilation	Local Exhaust	Use in confined areas.	Special	Explosion proof fans when needed.
	Mechanical	Must be sufficient to maintain area below established TLV/PEL.		

Protective Gloves	Neoprene rubber gloves.	Eye Protection	Splash proof goggles.
-------------------	-------------------------	----------------	-----------------------

Other Protective Clothing or Equipment

Use other protective equipment such as rubber aprons and a face shield if danger of splashing is possible.

Eye wash station or clear water must be readily available. ENFORCE GOOD HYGIENE PRACTICES. No smoking or open lights in work area. Exposure to liquid, vapors, mists or fumes must be minimized.

Work/Hygienic Practices Launder contaminated clothing before use. Dispose contaminated leather shoes

SECTION VIII - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken in Case Material is Released or Spilled

Shut off and eliminate all ignition sources. Keep people away. Add sand, earth or other absorbent to spill area. Ventilate confined spaces. Open windows and doors, minimize breathing vapors and skin contact. Keep spill out of sewers by diking. Observe precautions for volatile, flammable vapors from absorbed material.

Waste Disposal Method

Incineration in accordance with local, state, and federal regulations.

Precautions to be Taken in Handling and Storing Keep containers tightly closed when not in use and away from excessive heat and flame. DO NOT pressurize, cut, weld, solder, drill or grind the containers.

Other Precautions Store in an OSHA approved area for flammable materials.

Prepared by William H. Greider, Jr. Technical Director

PLEASE

NOTE

"The above information is accurate to the best of our knowledge. However, since data, safety standards, and government regulations are subject to change and the conditions of handling and use, or misuse, are beyond our control, Dur-A-Flex, Inc. MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND use."

SECTION VI - HEALTH HAZARD DATA

Route(s) of Entry:	Inhalation? Yes	Skin?	Ingestion? Eyes
Signs and Symptoms of Exposure	Temporary Inhalation Discomfort.		
Health Hazards (Acute and Chronic)			
ACUTE - None known other than possible temporary discomfort due to inhalation of dust concentration.			
CHRONIC - Potential chronic respiratory distress/irritation. Can aggravate pre-existing lung conditions.			

Carcinogenicity:	NTP? NO	IARC Monographs? NO	OSHA Regulated? NO
------------------	------------	------------------------	-----------------------

Medical Conditions Generally Aggravated by Exposure
None Known.

Emergency and First Aid Procedures

EYES - hold eyes apart and flush with clean water for 15 minutes. If irritation or redness develops and persists seek medical attention.

INHALATION - For inhalation discomfort move person to fresh air.

SECTION VII - CONTROL MEASURES

Respiratory Protection (Specify Type)
Provide adequate exhaust ventilation; use a NIOSH - approved respirator if PELS/TLVS are exceeded.

Ventilation	Local Exhaust	If necessary.	Special	None Known
	Mechanical	Adequate for dusty environments		

Protective Gloves Wear gloves Eye Protection Safety goggles, do not wear contact lenses.

Other Protective Clothing or Equipment
NONE KNOWN.

Work/Hygienic Practices Avoid unnecessary formation of dust.

SECTION VIII - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken in Case Material is Released or Spilled
Non - Skid Grit may be swept or vacuumed for normal disposal.

Waste Disposal Method
Non - Skid Grit is not a hazardous waste under U.S. Federal RCRA regulations.

Precautions to be Taken in Handling and Storing
Same as given in Section VII (ventilation, gloves, and goggles.)

Other Precautions Dry powders can build static charges when subjected to friction.

Prepared by William H. Greider, Jr. Technical Director

PLEASE NOTE "The above information is accurate to the best of our knowledge. However, since data, safety standards, and government regulations are subject to change and the conditions of handling and use, or misuse, are beyond our control, Dur-A-Flex, Inc. MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND use."