



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

Material Safety Data Sheet

Date Prepared 8/2/2014

SECTION I - IDENTIFICATION

IDENTITY (As Used on Label) Dur-A-Glaze #4 Hardener: Regular, Fast, Cold Cure, CR4, Damp-Primer, Water Clear

COMMON NAME Epoxy Resin Curatives

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
Benzyl Alcohol	100-51-6	N.E. ¹	N.E.
3, Aminomethyl -3,5,5-Trimethyl	2855-13-2	N.E.	N.E.
1, 5 Pentanediamine, 2 Methyl	15520-10-2	N.E.	N.E.
N, Aminoethyl Piperazine	140-31-8	N.E.	N.E.
Diglycidyl Ether Bisphenol A Epoxy Resin	25085-99-8	N.E.	N.E.
Salicylic Acid	69-72-7	N.E.	N.E.
1, 5 Pentanediamine, 2 Methyl	15520-10-2	N.E.	N.E.
Benzene-1,3-Dimethaneamine	1477-550	N.E.	N.E.
Phenol	108-95-2	N.E.	N.E.
Triphenyl phosphite	101-02-0	N.E.	N.E.

¹None 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	485°F	Specific Gravity (H2O = 1)	<1
Vapor Pressure (mm Hg)	0.02	Melting Point	N/A
Vapor Density (AIR = 1)	N/A	Evaporation rate (Butyl Acetate = 1)	N/A
Volatile Organic Compounds (VOC)	0 g/l		

Solubility in Water Partially soluble.

Appearance and Odor Pale yellow colored liquid. Amine odor.

SECTION IV - FIRE and EXPLOSION HAZARD DATA

Flash Point (Closed Cup Method)	220°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.

Unusual Fire and Explosion Hazards

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
	Stable	X	Keep container closed when not in use.

Incompatibility (Materials to Avoid) Strong oxidizers and acids.

Hazardous Decomposition or Byproducts By Fire- carbon monoxide, carbon dioxide, aldehydes, nitrogen.

Hazardous Polymerization	May Occur		Conditions to Avoid Uncontrolled reaction with epoxy resins. Avoid breathing fumes generated by hardener and epoxy mixture when not used within established pot life.
	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.

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

SKIN - 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.
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Other Protective Clothing or Equipment

Use rubber apron, face shield and appropriate clothing to prevent contact with skin. Launder contaminated clothing before reuse. Discard contaminated leather shoes and canvas sneakers. Protective skin creams help cleaning with soap and water, gloves must be 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 Murty Bhamidipati - Chemist

PLEASE "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."

NOTE



DUR-A-FLEX
INNOVATION FROM THE FLOOR UP

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

Material Safety Data Sheet

Date Prepared 8/2/2014

SECTION I - IDENTIFICATION	HAZARD RATING	Health	1
	0 = Least	Flammability	1
	1 = Slight	Reactivity	0
	2 = Moderate	Personal Protection	G
3 = High			
4 = Extreme			
IDENTITY (As Used on Label)	Dur-A-Glaze #4 RESIN/ Bio-Pruf®		
COMMON NAME	Epoxy Resin		

SECTION II - PRODUCT COMPONENTS	CAS.#	OSHA PEL	ACGIH TLV
Diglycidyl Ether Bisphenol A Epoxy Resin	25085-99-8	N.E. ¹	N.E.
Aliphatic Glycidyl Ether Diluent	68609-97-2	N.E.	N.E.
Film Additives	Proprietary ²	N.E.	N.E.

¹Not Established

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

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

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SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point	N/A	Specific Gravity (H2O = 1)	>1
Vapor Pressure (mm Hg)	N/A	Melting Point	N/A
Vapor Density (AIR = 1)	N/A	Evaporation rate (Butyl Acetate = 1)	N/A
Volatile Organic Compounds (VOC)	0 g/L		
Solubility in Water	None		
Appearance and Odor	Viscous liquid. Mild characteristic odor.		

SECTION IV - FIRE and EXPLOSION HAZARD DATA

Flash Point (Closed Cup Method)	485°F	Flammable Limits	LEL	UEL
			N/A	N/A

Extinguishing Media Foam, CO₂, Dry Chemical, Water Spray.

Special Firefighting Procedures

Firefighters should wear full emergency equipment with self-contained breathing apparatus.

Unusual Fire and Explosion Hazards

Cool fire - exposed containers with cold water spray to prevent pressure build - up that may rupture the container. Combustion products may be toxic.

SECTION V - REACTIVITY DATA

Stability	Unstable		Conditions to Avoid
	Stable	X	Excess heating over long periods of time degrades the resin.

Incompatibility (Materials to Avoid) Uncontrolled reaction with amines.

Hazardous Decomposition or Byproducts Fire- Carbon Monoxide, Carbon Dioxide, Nitrogen Oxide, Aldehydes.

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	Uncontrolled reaction with amines.

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)			
ACUTE - Irritation on skin and dermatitis.			
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 - Flush with water, holding lids open for 15 minutes or more. Call physician for advice if necessary.

SKIN - 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.

Note: Persons with lung disorders or who are sensitized should not use this product.

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.
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Other Protective Clothing or Equipment

Use rubber apron, face shield and appropriate clothing to prevent contact with skin. Launder contaminated clothing before reuse. Discard contaminated leather shoes and canvas sneakers. Protective skin creams help cleaning with soap and water, gloves must be 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 **Murty Bhamidipati - Chemist**

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INNOVATION FROM THE FLOOR UP

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Date Prepared 8/2/2014

SECTION I - IDENTIFICATION

IDENTITY (As Used on Label) Dur-A-Glaze #4 WB Primer-Sealer Hardener
COMMON NAME Emulsified Amine Curative

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
Water	7732-18-5	N.E. ¹	N.E.
Polyamine Curative	Proprietary ²	N.E.	N.E.
Modified Epoxy Resin Adhesion Promotor	Proprietary	N.E.	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	>400°F	Specific Gravity (H2O = 1)	1.07
Vapor Pressure (mm Hg)	not known	Melting Point	N/A
Vapor Density (AIR = 1)	not known	Evaporation rate (Butyl Acetate = 1)	not known
Volatile Organic Compounds (VOC) = < 2 grams/liter			
Solubility in Water	Soluble		
Appearance and Odor	Pale yellow viscous liquid. Mild ester-like odor.		

SECTION IV - FIRE and EXPLOSION HAZARD DATA

Flash Point (Closed Cup Method)	212°F	Flammable Limits	LEL	UEL
			N/A	N/A
Extinguishing Media	Water spray, Foam, CO ₂ , Dry Chemicals.			
Special Firefighting Procedures	Wear full protective equipment including self-contained breathing apparatus.			
Unusual Fire and Explosion Hazards	Cool storage containers with water spray to prevent pressure build-up that may rupture the containers. Combustion products may be toxic.			

SECTION V - REACTIVITY DATA

Stability	Unstable		Conditions to Avoid
	Stable	X	None known
Incompatibility (Materials to Avoid)	None known		
Hazardous Decomposition or Byproducts	By Fire - Carbon monoxide, Carbon dioxide, Nitrogen oxides.		
Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	None known.

SECTION VI - HEALTH HAZARD DATA

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

Signs and Symptoms of Exposure Irritation of skin.

Health Hazards (Acute and Chronic)

ACUTE - Irritation of skin and dermatitis.

CHRONIC - Repeated overexposure will cause severe skin irritation, dermatitis and sensitization. Sensitized persons may experience rapid irritation of skin upon exposure.

Persons with lung disorders or who are sensitized should not use this product.

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

Medical Conditions Generally Aggravated by Exposure

Allergy, skin disorders

Emergency and First Aid Procedures

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

SKIN - 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 rubber or Neoprene.	Eye Protection	Splash goggles or face shield.
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Other Protective Clothing or Equipment

Use rubber apron, face shield and appropriate clothing to prevent contact with skin. Launder contaminated clothing before reuse. Discard contaminated leather shoes and canvas sneakers. Protective skin creams help cleaning with soap and water, but 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 Murty Bhamidipati - Chemist

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Material Safety Data Sheet

Date Prepared 8/2/2014

SECTION I - IDENTIFICATION

IDENTITY (As Used on Label) Flintshot, Qrok, 290 Flour, 1/4 NJ, 1/2 NJ, F-70, Q28 all colors, Q11 all colors

COMMON NAME: Natural Sands/Quartz/Color Quartz

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

SECTION II - PRODUCT COMPONENTS

	CAS.#	OSHA PEL	ACGIH TLV
Crystalline Silica (Quartz) ¹	14808-60-7	10mg/m ³	0.05 mg/m ³
		%SiO ₂ +2	
Titanium Dioxide Pigment	13463-67-7	15mg/m ³	10mg/m ³
Iron Oxide Pigment	1309-37-1	15mg/m ³	10mg/m ³
Kaolin Clay	1332-58-7	15mg/m ³	2mg/m ³
Chromium Oxide Green (trivalent chromium) ²	1308-38-9	1.0mg/m ³	0.5mg/m ³

¹Crystalline silica can be a lung injury and cancer hazard. Do not breathe dust. May cause delayed lung injury. Long term exposure can cause silicosis, a respiratory disease which can result in a delayed, disabling, and sometimes fatal lung injury. Crystalline silica inhaled from occupational sources can from occupational sources can cause cancer in humans. Risk of injury is dependent on the duration and level of exposure. A single exposure will not result in serious and adverse effects.

² In Green quartz ONLY This product only 1-3ppm (0.0003%) leachable hexavalent chromium. Trivalent chromium is not specifically listed as a possible carcinogen. It is regulated under SARA III, 40CFR Part 372, Section 313.

T.S.C.A. Status - O.K.

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

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point	4046°F	Specific Gravity (H ₂ O = 1)	2.65
Vapor Pressure (mm Hg)	N/A	Melting Point	2930°F
Vapor Density (AIR = 1)	N/A	Evaporation rate (Butyl Acetate = 1)	N/A
Volatile Organic Compounds	0 g/L		
Solubility in Water	INSOLUBLE		
Appearance and Odor	Naturally rounded sand. Various sizes. No odor.		

SECTION IV - FIRE and EXPLOSION HAZARD DATA

Flash Point (Closed Cup Method)	N/A	Flammable Limits	LEL	UEL
			N/A	N/A
Extinguishing Media	Compatible with all extinguishing media. Use any media appropriate for the surrounding fire.			
Special Firefighting Procedures	N/A			
Unusual Fire and Explosion Hazards	N/A			

SECTION V - REACTIVITY DATA

Stability	Unstable		Conditions to Avoid
	Stable	X	NONE KNOWN
Incompatibility (Materials to Avoid)	Hydrofluoric Acid and powerful oxidizing agents		
Hazardous Decomposition or Byproducts	NONE KNOWN		
Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	NONE KNOWN.

SECTION VI - HEALTH HAZARD DATA

Route(s) of Entry:	Inhalation?	Skin?	Ingestion?
	Yes	NO	NO

Signs and Symptoms of Exposure Shortness of breath and reduced pulmonary function.

Health Hazards (Acute and Chronic)

ACUTE - NO SYMPTOMS.

CHRONIC - excessive inhalation of dust may result in respiratory disease such as silicosis, pulmonary fibrosis, etc. The IARC has evaluated in Vol.42 (monographs) that there is "sufficient evidence for the Carcinogenicity of crystalline silica dust to experimental animal" and "limited evidence" with respect to humans.

Carcinogenicity:	NTP?	IARC Monographs?	OSHA Regulated?
	Yes (Respirable Silica)	YES*Level 2A Grouping	NO

Medical Conditions Generally Aggravated by Exposure

Lung disorders and persons subject to eye irritation.

Emergency and First Aid Procedures

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

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

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

INGESTION - Expected to be slightly toxic by ingestion. If swallowed, induce vomiting immediately as directed by a physician. Get medical attention immediately. Never give liquids to an unconscious or convulsing person.

OTHER HEALTH EFFECTS - Medical conditions which may be aggravated by exposure to this product include, conjunctivitis of the eye, dermatitis of the skin, asthma and respiratory diseases. Sensitization may occur by skin contact.

****NOTE**** persons with lung disorders or who are sensitized should not use this product.

SECTION VII - CONTROL MEASURES

Respiratory Protection (Specify Type): Atmospheric levels should be maintained below the exposure limits listed in section II by using engineering controls. Provide adequate exhaust ventilation and/or NIOSH approved cartridge respirator.

Ventilation	Local Exhaust	To meet PEL requirements.	Special	None Known.
	Mechanical	Adequate to meet PEL requirements.		

Protective Gloves	Recommended.	Eye Protection	Recommended
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Other Protective Clothing or Equipment

Use adequate ventilation and dust collection. To minimize exposure, wear a respirator approved for silica dust when using, handling, storing or disposing of this product. Refer to the most recent standards of ANSI (Z88.2), OSHA (29 CFR 1910.134), MSHA (30 CFR Parts 56 and 57), and NIOSH Respirator Decision Logic. Maintain, clean and fit test respirators in accordance with OSHA regulations.

Work/Hygienic Practices Avoid creating and breathing dust.

SECTION VIII - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken in Case Material is Released or Spilled

Do not breathe dust. Do not rely on your sight to determine if dust is in the air. Silica may be in the air without a visible dust cloud. Avoid creation of respirable dust

Waste Disposal Method

Dispose waste material in a sanitary land fill or as regulated by local, state and federal regulations.

Precautions to be Taken in Handling and Storing

Avoid creation of respirable dust. Take precaution against bag breakage.

Other Precautions None Known.

Prepared by Murty Bhamidipati - Chemist

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

Material Safety Data Sheet

Date Prepared 7/17/2014

SECTION I - IDENTIFICATION

IDENTITY (As Used on Label) **Armor Top Grit**

COMMON NAME WHITE ALUMINUM OXIDE

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

SECTION II - PRODUCT COMPONENTS

	CAS.#	OSHA PEL	ACGIH TLV
Aluminum Oxide	1344-28-1	5 mg/m ³ (resp)	10 mg/m ³

Other Oxides (Total) (SiO₂+Fe₂O₃+Na₂O+MgO+TiO₂)=1%

T.S.C.A. Status - O.K. on above component.

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

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point	N/A	Specific Gravity (H ₂ O = 1)	3.95
Vapor Pressure (mm Hg)	N/A	Melting Point	2070
Vapor Density (AIR = 1)	N/A	Evaporation rate (Butyl Acetate = 1)	N/A

Volatile Organic Compounds (VOC) = Zero grams/liter

Solubility in Water INSOLUBLE

Appearance and Odor Granular, White, Odorless

SECTION IV - FIRE and EXPLOSION HAZARD DATA

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

Extinguishing Media N/A

Special Firefighting Procedures

None Known.

Unusual Fire and Explosion Hazards

None Known.

SECTION V - REACTIVITY DATA

Stability	Unstable		Conditions to Avoid
	Stable	X	

Incompatibility (Materials to Avoid) None known.

Hazardous Decomposition or Byproducts None Known.

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	

SECTION VI - HEALTH HAZARD DATA

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

Signs and Symptoms of Exposure	Temporary Inhalation Discomfort.
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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?	IARC Monographs?	OSHA Regulated?
	NO	NO	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.
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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 Murty Bhamidipati - Chemist

**PLEASE
NOTE**

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

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 redn 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.
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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 Murty Bhamidipati - Chemist

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."



Material Safety Data Sheet

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

Date Prepared 7/17/2014

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

Proprietary²

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 (H2O = 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
	Stable	X	Keep container closed when not in use, protect from moisture
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.
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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 Murty Bhamidipati - Chemist

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