

## Elast-O-Coat Hardener SAFETY DATA SHEET

**1. IDENTIFICATION**

**Product Identifier:** Elast-O-Coat Hardener

**Recommended use:** Floor Surfacing

**Manufacturer Name:** Dur-A-Flex, Inc.  
95 Goodwin Street  
East Hartford, CT 06108

**Telephone number:** 860-528-9838

**Emergency phone number:** 1-800- 424-9300 (CHEMTREC)

**Date of Preparation:** May 19, 2014

**2. HAZARD(S) IDENTIFICATION**

This product is one part of a 2 part product. Read and understand the hazard information on the SDS for Dur-A-Gard Resin before using this product.

**Classification:**

Physical	Health
Not Hazardous	Acute Toxicity Category 4 (Oral) Skin Corrosion Category 1B Eye Damage Category 1 Skin Sensitization Category 1 Specific Target Organ Toxicity – Single Exposure Category 3 (Respiratory Irritation) Toxic to Reproduction Category 1B

**Labeling:**

**Danger!**



**Hazard statement(s)**

Harmful if swallowed.  
Causes severe skin burns and eye damage.  
May cause an allergic skin reaction.  
May cause respiratory irritation.  
May damage fertility or the unborn child.

**Precautionary statement(s)**

Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Do not breathe dusts or mists.  
Wash thoroughly after handling.  
Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.  
 Contaminated work clothing should not be allowed out of the workplace.  
 Wear protective gloves, protective clothing, eye protection and face protection.  
 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor.  
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with soap and water.  
 Wash contaminated clothing before reuse.  
 Immediately call a POISON CENTER or doctor.  
 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
 Immediately call a POISON CENTER or doctor.  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 Immediately call a POISON CENTER or doctor.  
 IF exposed or concerned: Get medical attention.  
 Store locked up.  
 Dispose of contents and container in accordance with local and national regulations.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Concentration
Benzyl Alcohol	100-51-6	30-50
3, Aminomethyl -3,5,5-Trimethylcyclohexylamine	2855-13-2	10-20
Salicylic Acid	69-72-7	1-10
Aminoethylethanolamine	111-41-1	1-10
1,3-cyclohexanedimethanamine	2579-20-6	1-5
Aminopropylamorpholine	123-00-2	1-5
Tris (2,4,6, Dimethylaminomethyl) Phenol	90-72-2	1-5
Glyceryl poly(oxypropylene)tramine	64852-22-8	1-5

The specific identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

### 4. FIRST-AID MEASURES

**Inhalation:** Remove victim to fresh air. If breathing is difficult have qualified personnel administer oxygen. If breathing has stopped, administer artificial respiration. Get medical attention.

**Skin contact:** Immediately remove contaminated clothing. Wash skin thoroughly with soap and water. Get immediate medical attention. If rash occurs, get medical attention. Launder clothing before re-use.

**Eye contact:** Immediately flush with large quantities of water for 15 minutes, holding the eyelids apart. Get immediate medical attention.

**Ingestion:** If conscious, rinse mouth with water. Never give anything by mouth to an unconscious or convulsing person. DO NOT INDUCE VOMITING. Get immediate medical attention.

**Most important symptoms/effects, acute and delayed:** May cause severe eye and skin irritation with possible burns. May cause allergic skin reaction. Inhalation of vapors or mists may cause irritation of mucous membranes and upper respiratory tract. Harmful if swallowed. Possible reproductive hazard.

**Indication of immediate medical attention and special treatment, if necessary:** For eye and skin contact, get immediate attention. If swallowed, get immediate medical attention.

## 5. FIRE-FIGHTING MEASURES

**Suitable (and unsuitable) extinguishing media:** Use water spray, foam, carbon dioxide or dry chemical. Cool fire exposed containers with water.

**Specific hazards arising from the chemical:** Combustion may produce carbon and nitrogen oxides and aldehydes,

**Special protective equipment and precautions for fire-fighters:** Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment, and emergency procedures:** Wear appropriate protective clothing as described in Section 8.

**Environmental precautions:** Prevent release to the environment. Report releases as required by local, state and federal authorities.

**Methods and materials for containment and cleaning up:** Contain and collect with an inert absorbent. Place into an appropriate container for disposal. Caution slip hazard. Wash spill site with soap and water.

## 7. HANDLING AND STORAGE

**Precautions for safe handling:** Prevent contact with eyes and skin. Do not breathe vapors or mists. Wash thoroughly after handling and before eating, drinking, smoking or using the toilet. Do not taste or swallow. Use only with adequate ventilation.

**Conditions for safe storage, including any incompatibilities:** Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from physical damage. Store away from oxidizing agents.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure guidelines:**

Benzyl Alcohol	10 ppm TWA AIHA WEEL
3, Aminomethyl -3,5,5-Trimethyl	None Established
Salicylic Acid	None Established
Aminoethylethanolamine	None Established

1,3-cyclohexanedimethanamine	None Established
Aminopropylamorpholine	None Established
Tris (2,4,6, Dimethylaminomethyl) Phenol	None Established
Glyceryl poly(oxypropylene)tramine	None Established

**Appropriate engineering controls:** Use with adequate general or local exhaust ventilation to maintain exposures below occupational exposure limits.

**Personal Protective Equipment:**

**Respiratory protection:** If the exposures are exceeded, a NIOSH approved respirator with an organic vapor cartridge and a dust/mist prefilter or supplied air respirator is recommended. Selection and use of respiratory equipment must be in accordance with OSHA 1910.134 and good industrial hygiene practice.

**Skin protection:** Wear impervious gloves such as 4H™.

**Eye protection:** Chemical safety goggles and faceshield recommended.

**Other:** Impervious clothing as needed to prevent contact. An eye wash and safety shower should be available in the immediate work area.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance (physical state, color, etc.):** Clear liquid

**Odor:** Mild amine odor

<b>Odor threshold:</b> Not available	<b>pH:</b> Not available
<b>Melting Point/Freezing Point:</b> - Not available	<b>Boiling Point:</b> 485°F / 251.6°C
<b>Flash point:</b> 220 °F / 104.4°C	<b>Evaporation rate:</b> Not available
<b>Flammability (solid, gas):</b> Not applicable	
<b>Flammable limits: LEL:</b> Not available	<b>UEL:</b> Not available
<b>Vapor pressure:</b> 0.1 mmHg	<b>Vapor density:</b> Not available
<b>Relative density:</b> <1	<b>Solubility(is):</b> Partially soluble in water
<b>Partition coefficient: n-Octanol/water:</b> Not applicable	<b>Auto-ignition temperature:</b> Not available
<b>Decomposition temperature:</b> Not available	<b>Viscosity:</b> Not available

## 10. STABILITY AND REACTIVITY

**Reactivity:** None known.

**Chemical stability:** Stable

**Possibility of hazardous reactions:** None

**Conditions to avoid:** Avoid uncontrolled reaction with epoxy resins.

**Incompatible materials:** Avoid contact with oxidizing agents, acids, bases, ketones, aldehydes, and acetaldehyde and aluminum alkyl compounds.

**Hazardous decomposition products:** Thermal decomposition may produce carbon and nitrogen oxides, and aldehydes.

## 11. TOXICOLOGICAL INFORMATION

**Inhalation:** Inhalation of vapors and mists may cause mucous membrane and upper respiratory tract irritation. Excessive vapors may cause burns to the mucous membranes and cause lung damage.

**Ingestion:** Swallowing may cause burns to the mouth, throat and stomach with nausea, vomiting and diarrhea.

**Skin contact:** May cause severe irritation or burns. May cause allergic skin reaction.

**Eye contact:** May cause severe irritation or burns with redness, tearing, stinging and swelling. May cause permanent damage.

**Chronic effects from short- and long-term exposure:** Not expected to cause adverse effects from prolonged exposure.

**Reproductive Toxicity:** Aminoethylethanolamine has been shown to cause reproductive and developmental effects in studies with animals. In a reproduction/developmental toxicity screening test aminoethylethanolamine was administered to by oral gavage at dose levels of 0, 50, 250 or 1000 mg/kg. No live pups were delivered within the 1000 mg/kg group. In the group treated with 250 mg/kg, the number of stillborn pups was increased in comparison to control. Pup necropsy revealed high incidences of abnormalities especially affecting the pericardial vessels in terms of aneurysms, dilatations, and abnormal course in pups from dams at 50 and 250 mg/kg 48 % and 89 %, respectively, of the pups were affected in 100 % of the litters. The NOAELs were as follows: Parental animals: Systemic toxicity, reproductive performance and fertility: 250 mg/kg. Progeny: no NOAEL established.

**Sensitization:** 3, Aminomethyl -3,5,5-trimethyl, 1,3-cyclohexanedimethanamine, tris (2,4,6, dimethylaminomethyl) phenol and aminoethylethanolamine have been shown to cause sensitization in studies with laboratory animals.

**Mutagenicity:** None of the components have been shown to cause mutagenic activity.

**Carcinogenicity:** None of the components are listed as a carcinogen by IARC, NTP, ACGIH or OSHA.

**Acute Toxicity Values:** No toxicity data for the product. The acute toxicity estimate for the product: Oral 1547 mg/kg.

Benzyl Alcohol: Oral rat LD50 1620 mg/kg; Inhalation rat LC50 > 4.178 mg/L

3, Aminomethyl -3,5,5-Trimethyl: Oral rat LD50 1030 mg/kg; Inhalation rat LC50 >5.01 mg/L/4 hr; Dermal rabbit LD50 >2000 mg/kg

Salicylic Acid: Oral rat LD50 891 mg/kg; Dermal rabbit LD50 > 2000 mg/kg

Aminoethylethanolamine: Oral rat LD50 1670 mg/kg; Inhalation rat LC50 51.3 mg/m<sup>3</sup>/8 hr; Dermal rabbit LD50 > 2000 mg/kg

1,3-cyclohexanedimethanamine: Oral rat LD50 >300 – 2000 mg/kg; Dermal rabbit LD50 1700 mg/kg

Aminopropylamorpholine: No toxicity data available.

Tris (2,4,6, Dimethylaminomethyl) Phenol: Oral rat LD50 2169 mg/kg; Dermal rat LD50 > 1 ml/kg

Glyceryl poly(oxypropylene)tramine: Oral rat LD50 2690 mg/kg; Dermal rabbit LD50 12500 mg/kg

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity:

Benzyl Alcohol: 96 hr LC50 Pimephales promelas 770 mg/L; 48 hr EC50 daphnia magna 230 mg/L; 72 hr EC50 Pseudokirchnerella subcapitata 770 mg/L

3, Aminomethyl -3,5,5-Trimethyl: 96 hr LC50 Leuciscus idus 110 mg/L; 48 hr EC50 daphnia magna 23 mg/L; 72 hr EC50 Desmodemus subspicatus 37 mg/L

Salicylic Acid: 48 hr EC50 daphnia magna 870 mg/L; 72 hr EC50 Desmodemus subspicatus > 100 mg/L

Aminoethylethanolamine: 96 hr LC50 Pimephales promelas 640 mg/L; 48 hr EC50 daphnia magna 22 mg/L; 72 hr EC50 Desmodemus subspicatus 358 mg/L

1,3-cyclohexanedimethanamine: 96 hr LC50 Leuciscus idus 130 mg/L; 48 hr EC50 daphnia magna 33.1 mg/L; 72 hr EC50 Pseudokirchnerella subcapitata 56.7 mg/L

Aminopropylmorpholine; No data available

Tris (2,4,6, Dimethylaminomethyl) Phenol: 72 hr EC50 Pseudokirchnerella subcapitata 84 mg/L

Glyceryl poly(oxypropylene)tramine: 96 hr :EC50 fish 68 mg/L

**Persistence and degradability:** Benzyl alcohol is readily biodegradable. Aminoethylethanolamine:, 3, aminomethyl -3,5,5-trimethyl, 1,3-cyclohexanedimethanamine and tris (2,4,6, dimethylaminomethyl) phenol are not readily biodegradable.

**Bioaccumulative potential:** Benzyl alcohol and salicylic acid has a BCF of <5.

**Mobility in soil:** Benzyl alcohol is highly mobility in soil. Salicylic Acid is moderately mobile is soil.

**Other adverse effects:** None known.

### 13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all local, state and federal regulations.

### 14. TRANSPORT INFORMATION

	UN Number	Proper shipping name	Hazard Class	Packing Group	Environmental Hazard
<b>DOT</b>	UN 2735	Amines, liquid, corrosive n.o.s. (1,3-cyclohexanedimethanamine, Aminoethylethanolamine)	8	PG II	None
<b>TDG</b>	UN 2735	Amines, liquid, corrosive n.o.s. (1,3-cyclohexanedimethanamine, Aminoethylethanolamine)	8	PG II	None
<b>IMDG</b>	UN 2735	Amines, liquid, corrosive n.o.s. (1,3-cyclohexanedimethanamine, Aminoethylethanolamine)	8	PG II	None
<b>IATA</b>	UN 2735	Amines, liquid, corrosive n.o.s. (1,3-cyclohexanedimethanamine, Aminoethylethanolamine)	8	PG II	None

**Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):** Not applicable – product is transported only in packaged form.

**Special precautions:** None known.

### 15. REGULATORY INFORMATION

**CERCLA:** This product is not subject to CERCLA reporting requirements. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

**SARA Hazard Category (311/312):** Acute Health, Chronic Health

**SARA 313 Information:** This product contains the following chemicals subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372): None

**California Proposition 65**

This product contains the following chemicals known to the State of California to cause cancer or reproductive toxicity (birth defects): None

**EPA TSCA Inventory:** All of the ingredients in this product are listed on the EPA TSCA Inventory.

**CANADA:**

**Canadian WHMIS Classification:** Class E (Corrosive), Class D Division 2 Subdivision A (Very Toxic Material Causing other Toxic Effects), Class D Division 2 Subdivision B (Toxic Material Causing other Toxic Effects)

This product has been classified under the CPR and this MSDS discloses information elements required by the CPR.

<b>16. OTHER INFORMATION</b>
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**NFPA Rating:** Health = 3    Flammability = 1    Instability = 0  
**HMIS Rating:** Health = 3    Flammability = 1    Physical Hazard = 0

**SDS Revision History:** Converted to GHS format. All sections revised.

**Date of preparation:** May 19, 2014

**Date of last revision:** New SDS

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.

**Elast-O-Coat Resin  
Elast-O-Coat Resin, Pigmented  
SAFETY DATA SHEET**

**1. IDENTIFICATION**

**Product Identifier:** Elast-O-Coat Resin, Elast-O-Coat Resin Pigmented  
**Product Code:**

**Recommended use:** Floor Surfacing

**Manufacturer Name:** Dur-A-Flex, Inc.  
95 Goodwin Street  
East Hartford, CT 06108  
**Telephone number:** 860-528-9838

**Emergency phone number:** 1-800- 424-9300 (CHEMTREC)

**Date of Preparation:** September 8, 2014

**2. HAZARD(S) IDENTIFICATION**

This product is one part of a two part product. Read and understand the hazard information on the SDS for Elast-O-Coat Hardener before using this product.

**Classification:**

Physical	Health
Not Hazardous	Eye Irritation Category 2 Skin Irritation Category 2 Skin Sensitization Category 1 Respiratory Sensitization Category 1 Toxic to Reproduction Category 2

**Labeling:**

**Danger!**



**Hazard statement(s)**

Causes skin irritation.  
May cause an allergic skin reaction.  
Causes serious eye irritation.  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
Suspected of damaging fertility or the unborn

**Precautionary statement(s)**

Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Avoid breathing mist, vapors or spray.  
Wash thoroughly after handling.  
Contaminated work clothing should not be allowed out of the  
Page 1 of 8



child.

workplace.

Wear protective gloves, protective clothing and eye protection.

In case of inadequate ventilation wear respiratory protection.

IF INHALED: remove person to fresh air and keep comfortable for breathing.

If experiencing respiratory symptoms: Call a POISON CENTER or doctor.

IF ON SKIN: Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical attention.

Wash contaminated clothing before reuse.

IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical attention.

IF exposed or concerned: Get medical attention.

Store locked up.

Dispose of contents and container in accordance with local and national regulations.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Concentration
Diglycidyl Ether Bisphenol A Epoxy Resin	25068-38-6	40-60%
Alkyl Phenol Blocked Polyisocyanate	Proprietary	20-40%
Aliphatic Glycidyl Ether Diluent (Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.)	68609-97-2+	1-10%
Polymer of Epichlorohydrin-Polyglycol	Proprietary	1-5%
Epoxy Resin	25085-99-8	1-10%
Titanium Dioxide*	13463-67-7	0-5%
Carbon Black*	1333-86-4	0-5% %
Phenol, nonyl-, branched	84852-15-3	0.1-2

\* The titanium dioxide and carbon black in this product are inextricably bound in a manner that no exposure occurs during normal use and handling. Therefore this product is not classified as a carcinogen.

**The specific identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.**

### 4. FIRST-AID MEASURES

**Inhalation:** Immediately remove to fresh air. If breathing is difficult have qualified personnel administer oxygen. If breathing has stopped, administer artificial respiration. Get immediate medical attention. Asthma-like symptoms may develop immediately or delayed up to several hours.

**Skin contact:** Immediately remove contaminated clothing. Wash skin thoroughly with soap and water. If rash or irritation develops, get medical attention. Launder clothing before re-use.

**Eye contact:** Immediately flush with large quantities of water for 15 minutes, holding the eyelids apart. Get medical attention if irritation develops.

**Ingestion:** If conscious, rinse mouth with water. Never give anything by mouth to an unconscious or convulsing person. Get medical attention.

**Most important symptoms/effects, acute and delayed:** Irritating to eyes, skin and respiratory system. May cause allergic skin and respiratory reaction. If an allergic respiratory reaction occurs, get immediate medical attention. Symptoms may be delayed. Individuals sensitized to isocyanates may have a life-threatening allergic reaction.

**Indication of immediate medical attention and special treatment, if necessary:** If respiratory sensitization occurs, get immediate medical attention. Symptoms may be delayed for several hours after exposure. Respiratory sensitization may be life threatening.

## 5. FIRE-FIGHTING MEASURES

**Suitable (and unsuitable) extinguishing media:** Use foam, carbon dioxide and dry chemical. Cool fire exposed containers with water.

**Specific hazards arising from the chemical:** This product reacts with water producing heat and gases. Reaction may be violent. Closed containers may rupture when exposed to extreme heat or contaminated with water. Combustion may produce isocyanate vapors and other irritating, highly toxic gases. Exposure to heated diisocyanates can be extremely dangerous.

**Special protective equipment and precautions for fire-fighters:** Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing. Do not allow run-off from fire fighting to enter drains or water courses. Decontaminate equipment and protective clothing before reuse.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment, and emergency procedures:** Wear appropriate protective clothing as described in Section 8. Isolate the area and prevent access. Ventilate and remove ignition sources.

**Methods and materials for containment and cleaning up:** Contain and collect with an inert absorbent. Place into an appropriate container for disposal. Do not allow spilled material or wash waters to enter sewers, surface waters or groundwater systems.

## 7. HANDLING AND STORAGE

**Precautions for safe handling:** Do not breathe vapors or mists. Use only with adequate ventilation. Wear respiratory protection if material is heated, sprayed, used in a confined space, or if the exposure limit is exceeded. Warning properties are not adequate to prevent overexposure from inhalation. Avoid contact with skin and eyes. Wear appropriate eye and skin protection. Wash thoroughly after handling. Do not breathe off gases generated during heat curing.

**Conditions for safe storage, including any incompatibilities:** Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected. Protect from physical damage.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure guidelines:**

Diglycidyl Ether Bisphenol A Epoxy Resin	None Established
Alkyl Phenol Blocked Polyisocyanate	None Established
Aliphatic Glycidyl Ether Diluent (Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.)	None Established
Polymer of Epichlorohydrin-Polyglycol	None Established
Epoxy Resin	None Established
Titanium Dioxide	15 mg/m <sup>3</sup> TWA OSHA PEL (total dust) 10 mg/m <sup>3</sup> TWA ACGIH TLV
Carbon Black	3.5 mg/kg TWA OSHA PEL 3 mg/kg TWA ACGIH TLV (inhalable)
Phenol, nonyl-, branched	None Established

**Appropriate engineering controls:** Use with adequate general or local exhaust ventilation to maintain exposures below occupational exposure limits.

**Personal Protective Equipment:**

**Respiratory protection:** If the exposure limits are exceeded or if exposure levels are unknown, a NIOSH approved positive pressure air supplied respirator with a full facepiece or air supplied hood should be used. In some situations where exposure levels are known to be below 10 times the exposure limit an air purifying respirator (organic vapor with particulate prefilter) can be used. A change schedule for cartridges is required. Selection and use of respiratory equipment must be in accordance with OSHA 1910.134 and good industrial hygiene practice.

**Skin protection:** Wear impervious gloves such as butyl rubber.

**Eye protection:** Chemical safety goggles recommended.

**Other:** Impervious clothing as needed to prevent contact. A safety shower and eye wash should be available in the immediate work area.

**Medical Surveillance:** A pre-placement physical should be given to all employees that will work with isocyanates. Employees with a prior isocyanate sensitization should be excluded from working with this product. A history of adult asthma, eczema and respiratory allergies are possible reasons for excluding or restricting the employee from working with this product. A comprehensive annual medical surveillance program should be instituted for all employees who work with isocyanates. Once a worker has been diagnosed as sensitized, no further exposure can be permitted.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance (physical state, color, etc.):** Clear viscous liquid

**Odor:** Mild characteristic odor

<b>Odor threshold:</b> 10 ppm (TDI)	<b>pH:</b> Not applicable
<b>Melting Point/Freezing Point:</b> Not available	<b>Boiling Point:</b> >392°F / >200°C
<b>Flash point:</b> 490°F / 254°C	<b>Evaporation rate:</b> Not available
<b>Flammability (solid, gas):</b> Not applicable	
<b>Flammable limits: LEL:</b> Not applicable	<b>UEL:</b> Not applicable
<b>Vapor pressure:</b> 1 mmHg @ 356°F	<b>Vapor density:</b> Not available
<b>Relative density:</b> >1	<b>Solubility(is):</b> Insoluble in Water
<b>Partition coefficient: n-Octanol/water:</b> Not available	<b>Auto-ignition temperature:</b> Not available

**Decomposition temperature:** Not available

**Viscosity:** Not available

## 10. STABILITY AND REACTIVITY

**Reactivity:** May react with excessive heat and amines.

**Chemical stability:** Stable under normal use.

**Possibility of hazardous reactions:** Contact with water or temperature greater than 400°F may cause polymerization.

**Conditions to avoid:** Temperatures above 248°F may release toluene diisocyanate. Certain amines may cause unblocking at lower temperatures

**Incompatible materials:** Avoid contact with water, alcohols, amines, acids and strong bases. May damage plastics and rubber.

**Hazardous decomposition products:** Thermal decomposition may produce carbon and nitrogen oxides, dense black smoke, hydrogen cyanide, isocyanate, isocyanic acid and other undetermined compounds.

## 11. TOXICOLOGICAL INFORMATION

**Inhalation:** Inhalation of vapors or mists may cause mucous membrane and respiratory irritation. This product contains a blocked polyisocyanate which is considered essentially unreactive at room temperature. Generation of free diisocyanate and blocking agent vapors is expected to occur if the product is heated above the unblocking temperature. Exposure to diisocyanates may cause respiratory sensitization. Symptoms include dryness of the throat, tightness of chest and difficulty in breathing. Symptoms may be delayed for several hours after exposure. This product can produce asthmatic sensitization upon a single inhalation exposure to a relatively high concentration or upon repeated inhalation exposures to lower concentrations. Individuals with lung or breathing problems or prior allergic reactions to isocyanates must not be exposed to vapor or spray mist. The allergic respiratory reaction may be life threatening.

**Ingestion:** Swallowing may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

**Skin contact:** Skin contact may cause irritation with redness, itching and swelling. May cause allergic skin reaction. Animal tests have indicated that respiratory sensitization can result from skin contact with isocyanates.

**Eye contact:** May cause irritation with redness, tearing, stinging and swelling.

**Chronic effects from short- and long-term exposure:** Prolonged exposure to isocyanates may cause chronic irritation, decreased lung function and lung damage, and conjunctivitis.

**Reproductive Toxicity:** Phenol, nonyl-, branched has been shown to cause fertility and developmental toxicity in animals.

**Sensitization:** Polymer of epichlorohydrin-polyglycol, diglycidyl ether bisphenol A epoxy resin, alkyl phenol blocked polyisocyanate and aliphatic glycidyl ether diluent have has been shown to cause sensitization in studies with laboratory animals.

**Mutagenicity:** None of the other components have been shown to cause mutagenic activity. .

**Carcinogenicity:** Titanium dioxide is listed by IARC as a group 2B carcinogen (possible human carcinogen). Carbon black is listed by IARC as a group 2B carcinogen (possibly carcinogenic to humans), and by ACGIH as an A3 (confirmed animal carcinogen with unknown relevance to humans). These components are encapsulated in a polymer matrix so no inhalable exposure occurs during use or disposal. None of the other components >0.1 are listed by OSHA, IARC, NTP or ACGIH as a carcinogen.

**Acute Toxicity Values:**

Diglycidyl Ether Bisphenol A Epoxy Resin: Oral rat LD50 > 2000 mg/kg; Inhalation rat LC0 – no deaths at saturation; Dermal rabbit LD50 > 2000 mg/kg  
Alkyl Phenol Blocked Polyisocyanate: Oral rat LD50 >5000 mg/kg  
Aliphatic Glycidyl Ether Diluent: Oral rat LD50 26.8 g/kg  
Polymer of Epichlorohydrin-Polyglycol: Oral rat LD50 >2000 mg/kg, Dermal rabbit LD50 >2000 mg/kg  
Epoxy Resin: No toxicity data available  
Titanium Dioxide: Oral rat LD50 > 5000 mg/kg, Inhalation rat LC50 6.82 mg/L/4 hr,  
Carbon Black: Oral rat LD50 > 8000 mg/kg, Inhalation rat LC50 > 4.6 mg/m<sup>3</sup>/4 hr.  
Phenol, nonyl-, branched: Oral rat LD50 1412 mg/kg

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity:**

Diglycidyl Ether Bisphenol A Epoxy Resin: 96 hr LC50 Oncorhynchus mykiss 1.2 mg/L; 48 hr EC50 daphnia magna 1.1 mg/L; 72 hr EC50 Scenedesmus capricornutum 9.4 mg/L  
Alkyl Phenol Blocked Polyisocyanate:  
Aliphatic Glycidyl Ether Diluent: 96 hr LC50 Oncorhynchus mykiss > 5000 mg/L; 72 hr IC50 Pseudokirchnerella subcapitata 843.75 mg/L  
Polymer of Epichlorohydrin-Polyglycol: 96 hr LC50 Leuciscus idus 67 mg/L; 48 hr EC50 daphnia magna 90 mg/L  
Epoxy Resin: No data available  
Titanium Dioxide: 72 hr EC50 Pseudokirchnerella subcapitata 61 mg/L  
Carbon Black: 96 hr LC0 Danio rerio 1000 mg/L, 24 hr EC50 daphnia magna > 5600 mg/L, EC50 Desmodesmus subspicatus > 10000 mg/L  
Phenol, nonyl-, branched: 96 hr LC50 Pimephales promelas 128 µg/L, 48 hr EC50 daphnia magna 218 µg/L, 72 hr EC50 Desmodesmus subspicatus 1.3 mg/L

**Persistence and degradability:** Diglycidyl ether bisphenol A epoxy resin and alkyl phenol blocked polyisocyanate are not readily biodegradable. Aliphatic glycidyl ether diluent is readily biodegradable.

**Bioaccumulative potential:** Diglycidyl ether bisphenol A epoxy resin has a BCF of 31. Aliphatic glycidyl ether diluent has a BCF 160-263.

**Mobility in soil:** No data available.

**Other adverse effects:** None known.

**13. DISPOSAL CONSIDERATIONS**

Dispose in accordance with all local, state and federal regulations. Incineration is the preferred method.

**14. TRANSPORT INFORMATION**

	UN Number	Proper shipping name	Hazard Class	Packing Group	Environmental Hazard
<b>DOT</b>	None	Not Regulated	None	None	None
<b>TDG</b>	None	Not Regulated	None	None	None
<b>IMDG</b>	UN 3082	Environmentally hazardous substances, liquid, n.o.s. (Diglycidyl Ether Bisphenol A Epoxy Resin)	9	PG III	Marine Pollutant
<b>IATA</b>	UN 3082	Environmentally hazardous	9	PG III	Yes

		substances, liquid, n.o.s. (Diglycidyl Ether Bisphenol A Epoxy Resin)			
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**Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):** Not applicable – product is transported only in packaged form.

**Special precautions:**

**15. REGULATORY INFORMATION**

**CERCLA:** This product is not subject to CERCLA reporting requirements as it is sold. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

**SARA Hazard Category (311/312):** Acute Health, Chronic Health, Reactivity

**SARA 313 Information: This product contains the following chemicals subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372):** None

**California Proposition 65**

This product contains the following chemicals known to the State of California to cause cancer or reproductive toxicity (birth defects):

Epichlorhydrin	106-89-8	<0.06%	cancer, male reproductive toxicity
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**EPA TSCA Inventory:** All of the ingredients in this product are listed on the EPA TSCA Inventory.

**CANADA:**

**Canadian CEPA:** All of the ingredients in this product are listed on the Canadian DSL.

**Canadian WHMIS Classification:** Class D Division 2 Subdivision A (Very Toxic Material Causing other Toxic Effects), Class D Division 2 Subdivision B (Toxic Material Causing other Toxic Effects)

This product has been classified under the CPR and this SDS discloses information elements required by the CPR.

**16. OTHER INFORMATION**

**NFPA Rating:** Health = 2    Flammability = 1    Instability = 1  
**HMIS Rating:** Health = 2\*    Flammability = 1    Physical Hazard = 1

**SDS Revision History:** Converted to GHS format. All sections revised.

**Date of preparation:** September 8, 2014

**Date of last revision:** New SDS

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.

## Shop Floor Resin SAFETY DATA SHEET

**1. IDENTIFICATION**

**Product Identifier:** Shop Floor Resin

**Recommended use:** Floor Surfacing

**Manufacturer Name:** Dur-A-Flex, Inc.  
95 Goodwin Street  
East Hartford, CT 06108

**Telephone number:** 860-528-9838

**Emergency phone number:** 1-800- 424-9300 (CHEMTREC)

**Date of Preparation:** September 8, 2014

**2. HAZARD(S) IDENTIFICATION**

**Classification:**

Physical	Health
Not Hazardous	Skin Irritation Category 2 Eye Irritation Category 2A Skin Sensitization Category 1

**Labeling:**

**Warning!**



**Hazard statement(s)**

Causes skin irritation.  
Causes serious eye irritation.  
May cause an allergic skin reaction.

**Precautionary statement(s)**

Avoid breathing mist, vapors or spray.  
Wash thoroughly after handling.  
Contaminated work clothing should not be allowed out of the workplace.  
Wear protective gloves, eye protection and face protection.  
IF ON SKIN: Wash with plenty of soap and water.  
If skin irritation or rash occurs: Get medical attention.  
Take off contaminated clothing and wash it before reuse.  
IF IN EYES: Rinse cautiously with water for several minutes.  
Remove contact lenses, if present and easy to do. Continue rinsing.  
If eye irritation persists: Get medical attention.  
Dispose of contents and container in accordance with local

and national regulations.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Concentration
Diglycidyl Ether Bisphenol A Epoxy Resin	25068-38-6	40-85%
Aliphatic Glycidyl Ether Diluent (Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.)	68609-97-2	5-25%
Epoxy Resin	25085-99-8	1-5%
Titanium Dioxide*	13463-67-7	1-5

\*The titanium dioxide in this product are inextricably bound in a manner that no exposure occurs during normal use and handling. Therefore this product is not classified as a carcinogen.

**The specific identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.**

### 4. FIRST-AID MEASURES

**Inhalation:** Remove victim to fresh air. If irritation occurs or breathing is difficult, get medical attention.

**Skin contact:** Remove contaminated clothing. Wash with soap and water. If irritation or rash develops, get medical attention.

**Eye contact:** Immediately flush with large quantities of water for several minutes, holding the eyelids apart. Get medical attention if irritation persists.

**Ingestion:** If conscious, rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious or convulsing person. Get medical attention.

**Most important symptoms/effects, acute and delayed:** May cause eye and skin irritation. May cause allergic skin reaction.

**Indication of immediate medical attention and special treatment, if necessary:** None expected under normal conditions of use. If allergic skin reaction occurs, discontinue use and get medical attention.

### 5. FIRE-FIGHTING MEASURES

**Suitable (and unsuitable) extinguishing media:** Use media appropriate for the surrounding fire.

**Specific hazards arising from the chemical:** Combustion may produce carbon oxides.

**Special protective equipment and precautions for fire-fighters:** Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing. Cool fire exposed containers with water.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment, and emergency procedures:** Wear appropriate protective clothing as described in Section 8.

**Environmental precautions:** Avoid release to the environment. Report releases as required by local, state and federal authorities.



**Methods and materials for containment and cleaning up:** Contain and collect with an inert absorbent. Place into an appropriate container for disposal. Caution slip hazard. Wash spill site with soap and water.

## 7. HANDLING AND STORAGE

**Precautions for safe handling:** Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Wash thoroughly after handling and before eating, drinking, smoking or using the toilet. Use with adequate ventilation.

**Conditions for safe storage, including any incompatibilities:** Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from physical damage. Store away from oxidizing agents, acids and bases.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Exposure guidelines:

Diglycidyl Ether Bisphenol A Epoxy Resin	None Established
Aliphatic Glycidyl Ether Diluent (Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.)	None Established
Epoxy Resin	None Established
Titanium Dioxide	15 mg/m <sup>3</sup> TWA OSHA PEL (total dust) 10 mg/m <sup>3</sup> TWA ACGIH TLV

**Appropriate engineering controls:** Use with adequate general or local exhaust ventilation to minimize exposures.

### Personal Protective Equipment:

**Respiratory protection:** If the exposures are excessive, a NIOSH approved respirator with an organic vapor cartridge and a dust/mist prefilter or supplied air respirator is recommended. Selection and use of respiratory equipment must be in accordance with OSHA 1910.134 and good industrial hygiene practice.

**Skin protection:** Wear impervious gloves such as butyl rubber.

**Eye protection:** Chemical safety goggles recommended.

**Other:** Impervious clothing as needed to prevent contact. An eye wash and safety shower should be available in the immediate work area.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance (physical state, color, etc.):** Viscous colored liquid

**Odor:** Mild characteristic odor

<b>Odor threshold:</b> Not available	<b>pH:</b> Not available
<b>Melting Point/Freezing Point:</b> - Not available	<b>Boiling Point:</b> Not available
<b>Flash point:</b> 485 °F / 251.6°C	<b>Evaporation rate:</b> Not available
<b>Flammability (solid, gas):</b> Not applicable	
<b>Flammable limits: LEL:</b> Not available	<b>UEL:</b> Not available
<b>Vapor pressure:</b> Not available	<b>Vapor density:</b> Not available
<b>Relative density:</b> >1	<b>Solubility(is):</b> Insoluble
<b>Partition coefficient: n-Octanol/water:</b> Not	<b>Auto-ignition temperature:</b> Not available

applicable	
<b>Decomposition temperature:</b> Not available	<b>Viscosity:</b> Not available

## 10. STABILITY AND REACTIVITY

**Reactivity:** None known.

**Chemical stability:** Stable.

**Possibility of hazardous reactions:** May polymerize with amines, mercaptans and Lewis acids.

**Conditions to avoid:** Avoid excessive heat.

**Incompatible materials:** Avoid contact with oxidizing agents, acids and bases.

**Hazardous decomposition products:** Thermal decomposition may produce carbon oxides.

## 11. TOXICOLOGICAL INFORMATION

**Inhalation:** Excessive inhalation of mists may cause mucous membrane and upper respiratory tract irritation.

**Ingestion:** Swallowing may cause gastrointestinal irritation, nausea and diarrhea.

**Skin contact:** May cause skin irritation with redness, itching and pain. May cause allergic skin reaction (sensitization).

**Eye contact:** May cause irritation with redness, tearing, stinging and swelling.

**Chronic effects from short- and long-term exposure:** None known.

**Reproductive Toxicity:** This product is not expected to cause adverse reproductive or developmental effects.

**Sensitization:** Diglycidyl ether bisphenol A epoxy resin and aliphatic glycidyl ether diluent causes sensitization in laboratory animals.

**Mutagenicity:** This product is not expected to cause mutagenic activity.

**Carcinogenicity:** Titanium dioxide is listed by IARC as "Probably Carcinogenic to Humans" (Group 2B). The titanium dioxide in this product is bound in the epoxy so there is no exposure expected during the use of this product. None of the other components greater than 0.1% are listed as a carcinogen by IARC, NTP ACGIH or OSHA.

### Acute Toxicity Values:

Diglycidyl Ether Bisphenol A Epoxy Resin: Oral rat LD50 > 2000 mg/kg; Inhalation rat LC0 – no deaths at saturation; Dermal rabbit LD50 > 2000 mg/kg

Aliphatic Glycidyl Ether Diluent: Oral rat LD50 26.8 g/kg

Epoxy Resin: No toxicity data available

Titanium Dioxide: Oral mouse LD50 >5000 mg/kg; Inhalation rat LC50 >6.82 mg/L/4 hr;

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity:

Diglycidyl Ether Bisphenol A Epoxy Resin: 96 hr LC50 *Oncorhynchus mykiss* 1.2 mg/L; 48 hr EC50 *daphnia magna* 1.1 mg/L; 72 hr EC50 *Scenedesmus capricornutum* 9.4 mg/L

Aliphatic Glycidyl Ether Diluent: 96 hr LC50 *Oncorhynchus mykiss* > 5000 mg/L; 72 hr IC50

*Pseudokirchnerella subcapitata* 843.75 mg/L

Epoxy Resin: No data available

Titanium Dioxide: 72 hr EC50 *Pseudokirchnerella subcapitata* 12.7 mg/L

**Persistence and degradability:** Diglycidyl ether bisphenol A epoxy resin is not readily biodegradable. Aliphatic glycidyl ether diluent is readily biodegradable.

**Bioaccumulative potential:** Diglycidyl ether bisphenol A epoxy resin has a BCF of 31. Aliphatic glycidyl ether diluent has a BCF 160-263.

**Mobility in soil:** No data available.

**Other adverse effects:** None known.

### 13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all local, state and federal regulations.

### 14. TRANSPORT INFORMATION

	UN Number	Proper shipping name	Hazard Class	Packing Group	Environmental Hazard
<b>DOT</b>	None	Not Regulated	None	None	None
<b>TDG</b>	None	Not Regulated	None	None	None
<b>IMDG</b>	UN 3082	Environmentally hazardous substances, liquid, n.o.s. (Diglycidyl Ether Bisphenol A Epoxy Resin)	9	PG III	Marine Pollutant
<b>IATA</b>	UN 3082	Environmentally hazardous substances, liquid, n.o.s. (Diglycidyl Ether Bisphenol A Epoxy Resin)	9	PG III	Yes

**Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):** Not applicable – product is transported only in packaged form.

**Special precautions:** None known

### 15. REGULATORY INFORMATION

**CERCLA:** This product is not subject to CERCLA reporting requirements as it is sold. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

**SARA Hazard Category (311/312):** Acute Health

**SARA 313 Information: This product contains the following chemicals subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372):** None

**California Proposition 65**

This product contains the following chemicals known to the State of California to cause cancer or reproductive toxicity (birth defects): epichlorohydrin 106-89-8 <0.0.095% (cancer, male reproductive toxicity)

**EPA TSCA Inventory:** All of the ingredients in this product are listed on the EPA TSCA Inventory.

**CANADA:**

**Canadian WHMIS Classification:** Class D Division 2 Subdivision B (Toxic Material Causing other Toxic Effects)

This product has been classified under the CPR and this SDS discloses information elements required by the CPR.

<b>16. OTHER INFORMATION</b>
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**NFPA Rating:** Health = 2    Flammability = 1    Instability = 0  
**HMIS Rating:** Health = 2    Flammability = 1    Physical Hazard = 0

**SDS Revision History:** Converted to GHS format. All sections revised.

**Date of preparation:** September 8, 2014

**Date of last revision:** New SDS

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.

## Armor Top Grit SAFETY DATA SHEET

### 1. IDENTIFICATION

**Product Identifier:** Armor Top Grit

**Recommended use:** Floor Surfacing

**Manufacturer Name:** Dur-A-Flex, Inc.  
95 Goodwin Street  
East Hartford, CT 06108

**Telephone number:** 860-528-9838

**Emergency phone number:** 1-800- 424-9300 (CHEMTREC)

**Date of Preparation:** October 22, 2014

### 2. HAZARD(S) IDENTIFICATION

**Classification:**

Physical	Health
Not Hazardous	Not Hazardous

**Labeling:** None Required

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Concentration
Aluminum Oxide	1344-28-1	95-100%

### 4. FIRST-AID MEASURES

**Inhalation:** Remove victim to fresh air. If breathing is difficult, have qualified personnel administer oxygen. Seek medical attention if irritation or other symptoms persist.

**Skin contact:** Remove contaminated clothing. Wash with soap and water. If irritation develops, get medical attention.

**Eye contact** Remove contact lenses if present and easy to do. Flush eyes thoroughly with large amounts of water, holding eyelids open. If irritation persists, seek medical attention.

**Ingestion:** If conscious, rinse mouth with water. Never give anything by mouth to an unconscious or convulsing person. Get medical attention.

**Most important symptoms/effects, acute and delayed:** Dust may cause eye and respiratory irritation. Prolonged inhalation of high concentration of dust may cause adverse effects on the lungs.

**Indication of immediate medical attention and special treatment, if necessary:** None required under normal conditions of use.

## 5. FIRE-FIGHTING MEASURES

**Suitable (and unsuitable) extinguishing media:** Use media appropriate for the surrounding fire.

**Specific hazards arising from the chemical:** None known. This product is not flammable.

**Special protective equipment and precautions for fire-fighters:** Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing. Cool fire exposed containers with water.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment, and emergency procedures:** Wear appropriate protective clothing as described in Section 8. Avoid breathing dust.

**Environmental precautions:** Avoid release to the environment. Report releases as required by local, state and federal authorities.

**Methods and materials for containment and cleaning up:** Scoop or sweep up and place into a container for disposal. Avoid generating dust.

## 7. HANDLING AND STORAGE

**Precautions for safe handling:** Avoid contact with eyes, skin and clothing. Avoid breathing dust. Wash thoroughly after handling. Use with adequate ventilation.

**Conditions for safe storage, including any incompatibilities:** No special storage required.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure guidelines:**

Aluminum Oxide	5 mg/m <sup>3</sup> TWA (respirable), 15 mg/m <sup>3</sup> TWA (total dust) OSHA PEL
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**Appropriate engineering controls:** Use with adequate general or local exhaust ventilation to maintain exposure levels below the occupational exposure limits.

**Personal Protective Equipment:**

**Respiratory protection:** If the exposures are excessive, a NIOSH approved respirator with a dust/mist filter or supplied air respirator is recommended. Selection and use of respiratory equipment must be in accordance with OSHA 1910.134 and good industrial hygiene practice.

**Skin protection:** Wear rubber gloves if required to avoid skin contact.

**Eye protection:** Chemical safety glasses recommended to avoid eye contact.

**Other:** None required.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance (physical state, color, etc.):** White powder.

**Odor:** No odor.

<b>Odor threshold:</b> Not available	<b>pH:</b> Not applicable
<b>Melting Point/Freezing Point:</b> 2070°C	<b>Boiling Point:</b> Not applicable
<b>Flash point:</b> Not applicable	<b>Evaporation rate:</b> Not applicable
<b>Flammability (solid, gas):</b> Not flammable	
<b>Flammable limits: LEL:</b> Not applicable	<b>UEL:</b> Not applicable
<b>Vapor pressure:</b> Not applicable	<b>Vapor density:</b> Not applicable
<b>Relative density:</b> 3.95	<b>Solubility(is):</b> Insoluble
<b>Partition coefficient: n-Octanol/water:</b> Not applicable	<b>Auto-ignition temperature:</b> Not applicable
<b>Decomposition temperature:</b> Not available	<b>Viscosity:</b> Not applicable

## 10. STABILITY AND REACTIVITY

**Reactivity:** None known.

**Chemical stability:** Stable.

**Possibility of hazardous reactions:** Not expected to be reactive.

**Conditions to avoid:** None known.

**Incompatible materials:** None known.

**Hazardous decomposition products:** None known.

## 11. TOXICOLOGICAL INFORMATION

**Inhalation:** Excessive inhalation of dust may cause upper respiratory tract irritation, coughing and difficulty in breathing.

**Ingestion:** Swallowing large quantities may cause gastrointestinal irritation, nausea and diarrhea.

**Skin contact:** May cause mechanical skin irritation with redness and pain.

**Eye contact:** May cause mechanical irritation with redness and tearing.

**Chronic effects from short- and long-term exposure:** Prolonged inhalation of respirable dust may cause adverse lung effects.

**Reproductive Toxicity:** This product is not expected to cause adverse reproductive or developmental effects.

**Sensitization:** This product has not been shown to cause sensitization in animals or humans.

**Mutagenicity:** This product is not expected to cause mutagenic activity.

**Carcinogenicity:** None of the components are listed as a carcinogen by IARC, NTP, ACGIH or OSHA.

### Acute Toxicity Values:

Aluminum Oxide: Oral rat LD50 >10000 mg/kg; LC50 Inhalation rat >2.3 mg/L/4 hr

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity:

Aluminum oxide: NOEC 96 hr Salmo trutta >100 mg/L; NOEC 48 hr daphnia magna >100 mg/L;

NOEC 72 hr Selenastrum capricornutum >100 mg/L

**Persistence and degradability:** Biodegradation is not applicable to inorganic substances.

**Bioaccumulative potential:** No data available

**Mobility in soil:** No data available.

**Other adverse effects:** None known.

### 13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all local, state and federal regulations.

### 14. TRANSPORT INFORMATION

	UN Number	Proper shipping name	Hazard Class	Packing Group	Environmental Hazard
<b>DOT</b>	None	Not Regulated	None	None	None
<b>TDG</b>	None	Not Regulated	None	None	None
<b>IMDG</b>	None	Not Regulated	None	None	None
<b>IATA</b>	None	Not Regulated	None	None	None

**Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):** Not applicable – product is transported only in packaged form.

**Special precautions:** None known

### 15. REGULATORY INFORMATION

**CERCLA:** This product is not subject to CERCLA reporting requirements as it is sold. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

**SARA Hazard Category (311/312):** Not hazardous

**SARA 313 Information:** This product contains the following chemicals subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372): None

#### California Proposition 65

This product contains the following chemicals known to the State of California to cause cancer or reproductive toxicity (birth defects): None known

**EPA TSCA Inventory:** All of the ingredients in this product are listed on the EPA TSCA Inventory.

#### CANADA:

**Canadian CEPA:** All of the ingredients in this product are listed on the Canadian DSL.

**Canadian WHMIS Classification:** Not a controlled product

This product has been classified under the CPR and this MSDS discloses information elements required by the CPR.

### 16. OTHER INFORMATION

**NFPA Rating:** Health = 1      Flammability = 0      Instability = 0  
**HMIS Rating:** Health = 1      Flammability = 0      Physical Hazard = 0



**SDS Revision History:** Converted to GHS format. All sections revised.

**Date of preparation:** October 6, 2014

**Date of last revision:** New SDS

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.

## Armor Top Gloss Resin / Armor Top LH Gloss Resin SAFETY DATA SHEET

### 1. IDENTIFICATION

**Product Identifier:** Armor Top Gloss Resin /Armor Top LH Gloss Resin

**Recommended use:** Floor Surfacing

**Manufacturer Name:** Dur-A-Flex, Inc.  
95 Goodwin Street  
East Hartford, CT 06108

**Telephone number:** 860-528-9838

**Emergency phone number:** 1-800- 424-9300 (CHEMTREC)

**Date of Preparation:** January 31, 2014

### 2. HAZARD(S) IDENTIFICATION

This product is one part of a 4 part product. Read and understand the hazard information on the SDS for Armor Top Hardener, Armor Top Colorant and Armor Top Grit before using this product.

**Classification:**

Physical	Health
Flammable Liquid Category 4	Skin Corrosion Category 1C Eye Damage Category 1 Skin Sensitization Category 1 Acute Toxicity Category 4 (Inhalation)

**Labeling:**

**Danger!**



**Hazard statement(s)**

Combustible liquid.  
Causes severe skin burns and eye damage.  
May cause an allergic skin reaction.  
Harmful if inhaled.

**Precautionary statement(s)**

Keep away from flames and hot surfaces. No smoking.  
Do not breathe mists, vapors and spray.  
Wash thoroughly after handling.  
Use only outdoors or in a well-ventilated area.  
Contaminated work clothing should not be allowed out of the workplace.  
Wear protective gloves, protective clothing, eye protection and face protection.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with soap and water. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or doctor.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

In case of fire: Use water spray, foam, carbon dioxide or dry chemical to extinguish.

Store in a well-ventilated place. Keep cool. Store locked up.

Dispose of contents and container in accordance with local and national regulations

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Concentration
Blocked Cycloaliphatic Diamine	Proprietary	100%

The specific identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

### 4. FIRST-AID MEASURES

**Inhalation:** Immediately remove victim to fresh air. If breathing is difficult have qualified personnel administer oxygen. If breathing has stopped, administer artificial respiration. Get immediate medical attention.

**Skin contact:** Immediately flush skin with plenty of soap and water for 15 minutes while removing contaminated clothing and shoes. Get immediate medical attention. Launder clothing before re-use. (Discard contaminated shoes).

**Eye contact:** Immediately flush victim's eyes with large quantities of water for at least 15 minutes, holding the eyelids apart. Get immediate medical attention.

**Ingestion:** If conscious, rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious or convulsing person. Get immediate medical attention.

**Most important symptoms/effects, acute and delayed:** Corrosive to eye and skin. May cause severe irritation or burns to mucous membranes and upper respiratory tract. Ingestion may cause burns to the mouth, throat and stomach.

**Indication of immediate medical attention and special treatment, if necessary:** If eye and skin burns occur, get immediate medical attention. If vapors or mists are inhaled and symptoms occur, get immediate medical attention. . If swallowed, get immediate medical attention.

## 5. FIRE-FIGHTING MEASURES

**Suitable (and unsuitable) extinguishing media:** Use water spray, foam, carbon dioxide or dry chemical. Do not use water jet. Cool fire exposed containers with water.

**Specific hazards arising from the chemical:** Runoff from fire may be corrosive. Containers contaminated with water may rupture explosively.

**Special protective equipment and precautions for fire-fighters:** Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment, and emergency procedures:** Evacuate the area and ventilate the area. Remove all ignition sources. Wear appropriate protective clothing as described in Section 8.

**Environmental precautions:** Do not allow spilled material or wash water to enter sewers, surface water or ground water. Report releases as required by local, state and federal authorities.

**Methods and materials for containment and cleaning up:** Contain and collect with an inert absorbent. Place into an appropriate container for disposal.

## 7. HANDLING AND STORAGE

**Precautions for safe handling:** Prevent contact with eyes, skin and clothing. Do not breathe vapors or mists. Do not taste or swallow. Wash thoroughly after handling and before eating, drinking, smoking or using the toilet. Use only with adequate ventilation.

**Conditions for safe storage, including any incompatibilities:** Store in a cool, dry and well-ventilated place. Keep away from heat, sparks and flames. Store in original containers. Keep away from moisture and water. Protect from physical damage. Store away from oxidizing agents and other incompatible materials.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Exposure guidelines:

Blocked Cycloaliphatic Diamine	None Established
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**Appropriate engineering controls:** Use with adequate general or local exhaust ventilation to minimize exposures levels.

### Personal Protective Equipment:

**Respiratory protection:** If the exposures are excessive, a NIOSH approved respirator with an organic vapor cartridge and a dust/mist prefilter or supplied air respirator is recommended. Selection and use of respiratory equipment must be in accordance with OSHA 1910.134 and good industrial hygiene practice.

**Skin protection:** Wear impervious gloves such as nitrile rubber, butyl rubber or neoprene.

**Eye protection:** Chemical safety goggles and faceshield should be worn to prevent contact.

**Other:** Impervious clothing such as long sleeved shirt and pants, rubber apron and rubber boots should be worn if contact is possible. An eye wash and safety shower should be available in the immediate work area.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance (physical state, color, etc.):** Colorless to pale yellow liquid

**Odor:** Slight amine odor

<b>Odor threshold:</b> Not available	<b>pH:</b> 10.5-11
<b>Melting Point/Freezing Point:</b> - Not available	<b>Boiling Point:</b> >392°F / >200°C
<b>Flash point:</b> 170.6 °F / 77°C	<b>Evaporation rate:</b> Not available
<b>Flammability (solid, gas):</b> Not applicable	
<b>Flammable limits: LEL:</b> Not available	<b>UEL:</b> Not available
<b>Vapor pressure:</b> 9 mmHg @ 20°C	<b>Vapor density:</b> Not available
<b>Relative density:</b> 0.86 @ 20°C	<b>Solubility(is):</b> Insoluble
<b>Partition coefficient: n-Octanol/water:</b> Not applicable	<b>Auto-ignition temperature:</b> 472°F / 245°C
<b>Decomposition temperature:</b> Not available	<b>Viscosity:</b> 25 mPas @ 20°C

## 10. STABILITY AND REACTIVITY

**Reactivity:** Not reactive under normal use conditions.

**Chemical stability:** Stable

**Possibility of hazardous reactions:** Contact with moisture or water may produce aliphatic amines and highly flammable vapors.

**Conditions to avoid:** Avoid moisture and excessive humidity.

**Incompatible materials:** Avoid contact with oxidizing agents, alkaline earth metals and acid.

**Hazardous decomposition products:** Thermal decomposition may produce carbon and nitrogen oxides and traces of hydrogen cyanide.

## 11. TOXICOLOGICAL INFORMATION

**Inhalation:** Inhalation of mists may cause severe irritation of the nose throat and upper respiratory tract. Severe exposures may cause pulmonary edema.

**Ingestion:** Swallowing may cause irritation or burns to the mouth, throat and stomach, with nausea, vomiting and diarrhea. Aspiration during ingestion or vomiting may cause chemical pneumonia.

**Skin contact:** Liquid or mists may cause severe irritation and burns. May cause allergic skin reaction.

**Eye contact:** Corrosive. Liquid or mists may cause severe irritation or burns with redness, tearing and stinging of the eyes. May cause permanent eye damage.

**Chronic effects from short- and long-term exposure:** None known.

**Reproductive Toxicity:** This product is not expected to cause adverse reproductive or developmental effects.

**Sensitization:** Blocked cycloaliphatic diamine has been shown to cause sensitization in a guinea pig maximization test

**Mutagenicity:** Blocked cycloaliphatic diamine was negative in the AMES test.

**Carcinogenicity:** None of the components are listed as a carcinogen by IARC, NTP, ACGIH or OSHA.

**Acute Toxicity Values:**

Blocked Cycloaliphatic Diamine: Oral rat LD50 4150 mg/kg; Dermal rat LD50 >5000 mg/kg; Inhalation rat LC50 1.276 mg/L

<b>12. ECOLOGICAL INFORMATION</b>
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**Ecotoxicity:**

Blocked Cycloaliphatic Diamine: 96 hr LC50 Danio rerio > 69.2 mg/L; 48 hr EC50 30.7 mg/L; 72 hr EC50 Desmodemus subspicatus 257.5 mg/L

**Persistence and degradability:** Blocked cycloaliphatic diamine is not readily biodegradable.

**Bioaccumulative potential:** No data available.

**Mobility in soil:** No data available.

**Other adverse effects:** None known.

<b>13. DISPOSAL CONSIDERATIONS</b>
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Dispose in accordance with all local, state and federal regulations.

<b>14. TRANSPORT INFORMATION</b>
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	UN Number	Proper shipping name	Hazard Class	Packing Group	Environmental Hazard
<b>DOT</b>	UN 2735	Amines, Liquid, Corrosive, n.o.s. (Cycloaliphatic Diamine)	8	PG III	None
<b>TDG</b>	UN 2735	Amines, Liquid, Corrosive, n.o.s. (Cycloaliphatic Diamine)	8	PG III	None
<b>IMDG</b>	UN 2735	Amines, Liquid, Corrosive, n.o.s. (Cycloaliphatic Diamine)	8	PG III	None
<b>IATA</b>	UN 2735	Amines, Liquid, Corrosive, n.o.s. (Cycloaliphatic Diamine)	8	PG III	None

\*This product qualifies for “Limited Quantity” for any package less than 1.3 gallons.

**Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):** Not applicable – product is transported only in packaged form.

**Special precautions:** None known

## 15. REGULATORY INFORMATION

**CERCLA:** This product is not subject to CERCLA reporting requirements as it is sold. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

**SARA Hazard Category (311/312):** Acute Health, Chronic Health, Fire Hazard

**SARA 313 Information: This product contains the following chemicals subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372):** None

### **California Proposition 65**

This product contains the following chemicals known to the State of California to cause cancer or reproductive toxicity (birth defects): None

**EPA TSCA Inventory:** All of the ingredients in this product are listed on the EPA TSCA Inventory.

### **CANADA:**

**Canadian WHMIS Classification:** Class B Division 3 (Combustible Liquid); Class D Division 2 Subdivision B (Toxic material causing other chronic effects); Class E (Corrosive)

This product has been classified under the CPR and this MSDS discloses information elements required by the CPR.

## 16. OTHER INFORMATION

**NFPA Rating:** Health = 3    Flammability = 2    Instability = 0  
**HMIS Rating:** Health = 3    Flammability = 2    Physical Hazard = 0

**SDS Revision History:** Converted to GHS format. All sections revised.

**Date of preparation:** January 31, 2014

**Date of last revision:** New SDS

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.

## Armor Top Colorants SAFETY DATA SHEET

<b>1. IDENTIFICATION</b>
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**Product Identifier:** Armor Top Colorants

**Recommended use:** Floor Surfacing

**Manufacturer Name:** Dur-A-Flex, Inc.  
95 Goodwin Street  
East Hartford, CT 06108

**Telephone number:** 860-528-9838

**Emergency phone number:** 1-800- 424-9300 (CHEMTREC)

**Date of Preparation:** February 27, 2015

<b>2. HAZARD(S) IDENTIFICATION</b>
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**Classification:**

Physical	Health
Flammable Liquid Category 4	Not Hazardous

**Labeling:**

**Warning!**

**Hazard statement(s)**

Combustible liquid.

**Precautionary statement(s)**

Keep away from flames and hot surfaces. No smoking.  
Wear protective gloves.  
In case of fire: Use water spray, carbon dioxide, alcohol foam or dry chemical to extinguish Store in a well-ventilated place.  
Keep cool.  
Store locked up.  
Dispose of contents and container in accordance with local and national regulations.

<b>3. COMPOSITION / INFORMATION ON INGREDIENTS</b>
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Chemical name	CAS No.	Concentration
Dipropylene Glycol Ether Acetate (DPM Acetate)	88917-22-0	0-100%
1-Methoxy-2-propyl acetate (PGMEA)	108-65-6	40-60%
Titanium Dioxide	13463-67-7	0-70%
Carbon Black	1333-86-4	0-10%



\* The titanium dioxide and carbon black in this product is inextricably bound in a manner that no exposure occurs during normal use and handling. Therefore this product is not classified as a carcinogen.

**The specific identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.**

#### 4. FIRST-AID MEASURES

**Inhalation:** Remove victim to fresh air. If irritation occurs or breathing is difficult, get medical attention.

**Skin contact:** Remove contaminated clothing. Wash skin with soap and water for several minutes. If irritation persists, get medical attention. Launder clothing before re-use.

**Eye contact:** Flush with large quantities of water, holding the eyelids apart. Get medical attention if irritation persists.

**Ingestion:** If conscious, rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious or convulsing person. Get medical attention if symptoms develop.

**Most important symptoms/effects, acute and delayed:** May cause mild eye irritation. Prolonged skin contact may cause irritation. Inhalation of vapors or mists may cause upper respiratory tract irritation. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

**Indication of immediate medical attention and special treatment, if necessary:** None expected under normal conditions of use.

#### 5. FIRE-FIGHTING MEASURES

**Suitable (and unsuitable) extinguishing media:** Use water spray, carbon dioxide, alcohol foam or dry chemical. Cool fire exposed containers with water.

**Specific hazards arising from the chemical:** Combustible liquid. Vapors are heavier than air and will travel along surfaces to remote ignition sources and flash back. Closed containers may explode if exposed to extreme heat. Combustion may produce aldehydes and carbon and nitrogen oxides.

**Special protective equipment and precautions for fire-fighters:** Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing.

#### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment, and emergency procedures:** Avoid contact with skin, eyes or clothing. Avoid breathing vapors. Wear appropriate protective clothing as described in Section 8. Eliminate all ignition sources. Ventilate the area. Provide explosion-proof ventilation.

**Environmental precautions:** Avoid release to the environment. Report releases as required by local, state and federal authorities.

**Methods and materials for containment and cleaning up:** Contain and collect with an inert absorbent. Place into an appropriate container for disposal. Use non-sparking tools and equipment. If spill has not ignited, use water spray to disperse the vapors and protect personnel attempting to stop leak.

## 7. HANDLING AND STORAGE

**Precautions for safe handling:** Avoid contact with eyes, skin, and clothing. Avoid breathing vapors or mist. Wash thoroughly after handling. Wear protective clothing and equipment as described in Section 8. Use with adequate ventilation. Ground container when pouring. Keep away from heat, sparks, flames and all sources of ignition. Do not expose to direct sunlight. Empty containers retain product residues and can be hazardous. Follow all SDS precautions when handling empty containers.

**Conditions for safe storage, including any incompatibilities:** Store in a cool, dry, well ventilated area. Keep container tightly closed when not in use. Protect from physical damage. Keep away from oxidizers and other incompatible materials.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Exposure guidelines:

Dipropylene Glycol Ether Acetate (DPM Acetate)	None Established
1-Methoxy-2-propyl acetate (PGMEA)	50 ppm AIHA WEEL
Titanium Dioxide	15 mg/m <sup>3</sup> TWA OSHA PEL (total dust) 10 mg/m <sup>3</sup> TWA ACGIH TLV
Carbon Black	3.5 mg/kg TWA OSHA PEL 3 mg/kg TWA ACGIH TLV (inhalable)

**Appropriate engineering controls:** Use with adequate general or local exhaust ventilation to maintain exposures below occupational exposure limits. Use explosion-proof equipment where required.

### Personal Protective Equipment:

**Respiratory protection:** In operations where exposure limits are exceeded, an approved respirator with organic vapor cartridges or supplied air respirator should be used. Selection and use of respiratory equipment must be in accordance with appropriate regulations and good industrial hygiene practice.

**Skin protection:** Wear impervious gloves such as butyl rubber, nitrile or neoprene to prevent skin contact. .

**Eye protection:** Wear safety chemical goggles if contact is possible.

**Other:** Impervious clothing as needed to prevent contact and prevent contamination of personal clothing. Suitable washing facilities should be available in the work area.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance (physical state, color, etc.):** Clear liquid

**Odor:** Fruity, aromatic odor

<b>Odor threshold:</b> Not available	<b>pH:</b> Not available
<b>Melting Point/Freezing Point:</b> Not available	<b>Boiling Point:</b> 392°F / 200°C
<b>Flash point:</b> 186 °F / 85.5°C	<b>Evaporation rate:</b> 0.015
<b>Flammability (solid, gas):</b> Not applicable	
<b>Flammable limits: LEL:</b> 1.5% (PGMEA)	<b>UEL:</b> 10.0 % (PGMEA)
<b>Vapor pressure:</b> 0.5 mmHg (PGMEA)	<b>Vapor density (air =1):</b> 6.6
<b>Relative density:</b> 1.11	<b>Solubility(is):</b> Insoluble
<b>Partition coefficient: n-Octanol/water:</b> Not applicable	<b>Auto-ignition temperature:</b> 518°F (270°C) (PGMEA)

<b>Decomposition temperature:</b> Not available	<b>Viscosity:</b> Not available
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## 10. STABILITY AND REACTIVITY

**Reactivity:** May react with oxygen.

**Chemical stability:** Stable under normal conditions of use.

**Possibility of hazardous reactions:** May react with oxygen to form peroxides.

**Conditions to avoid:** Avoid heat, sparks and open flames.

**Incompatible materials:** Avoid contact with oxidizing agents, reducing agents and peroxides.

**Hazardous decomposition products:** Thermal decomposition may produce aldehydes, carbon and nitrogen oxides.

## 11. TOXICOLOGICAL INFORMATION

**Inhalation:** Vapors or mists may cause irritation of the nose, throat and upper respiratory tract.

**Ingestion:** Swallowing may cause gastrointestinal irritation, nausea and diarrhea.

**Skin contact:** Prolonged skin contact may cause redness and drying of the skin.

**Eye contact:** May cause mild eye irritation with redness, tearing and swelling.

**Chronic effects from short- and long-term exposure:** None known.

**Reproductive Toxicity:** None of the components have been shown to cause reproductive or developmental effects.

**Sensitization:** None of the components have been shown to cause sensitization in animals or humans.

**Mutagenicity:** None of the components have been shown to cause mutagenic activity.

**Carcinogenicity:** Titanium dioxide is listed by IARC as a group 2B carcinogen (possible human carcinogen). Carbon black is listed by IARC as a group 2B carcinogen (possibly carcinogenic to humans), and by ACGIH as an A3 (confirmed animal carcinogen with unknown relevance to humans). These component is encapsulated in a polymer matrix so no inhalable exposure occurs during use or disposal. None of the other components greater than 0.1% are listed by OSHA, IARC, NTP or ACGIH as a carcinogen.

**Acute Toxicity Values:** No toxicity data for the product. Acute Toxicity Estimate: Oral rat LD50 14285 mg/kg, Dermal >2000 mg/kg

Dipropylene Glycol Ether Acetate: Oral rat LD50 >5000 mg/kg, Dermal rabbit LD50 >2000 mg/kg

1-Methoxy-2-propyl acetate: Oral rat LD50 8532 mg/kg, Dermal rat LD50 >2000 mg/kg, Inhalation rat LC0 >23.4 mg/L/6 hr

Titanium Dioxide: Oral rat LD50 > 5000 mg/kg, Inhalation rat LC50 6.82 mg/L/4 hr,

Carbon Black: Oral rat LD50 > 8000 mg/kg, Inhalation rat LC50 > 4.6 mg/m<sup>3</sup>/4 hr.

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity:

Dipropylene Glycol Ether Acetate: 96 hr LC50 *Oncorhynchus mykiss* 111 mg/kg. 48 hr *daphnia magna* 2701 mg/L, 70 hr EC50 *Selenastrum capricornutum* >1000 mg/L

1-Methoxy-2-propyl acetate: 96 hr LC50 *Oncorhynchus mykiss* 100 mg/L, 48 hr EC50 *daphnia magna* > 500 mg/L, 72 hr EC50 *Pseudokirchnerella subcapitata* > 1000 mg/L

Titanium Dioxide: 72 hr EC50 Pseudokirchnerella subcapitata 61 mg/L  
Carbon Black: 96 hr LC0 Danio rerio 1000 mg/L, 24 hr EC50 daphnia magna > 5600 mg/L, EC50

**Persistence and degradability:** 1-Methoxy-2-propyl acetate and dipropylene glycol ether acetate are readily biodegradable.

**Bioaccumulative potential:** -Methoxy-2-propyl acetate has a calculated BCF of 3.16. This suggests the potential for bioaccumulation is low.

**Mobility in soil:** -Methoxy-2-propyl acetate and dipropylene glycol ether acetate are highly mobility on soil.

**Other adverse effects:** None known.

### 13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all local, state and federal regulations.

### 14. TRANSPORT INFORMATION

	UN Number	Proper shipping name	Hazard Class	Packing Group	Environmental Hazard
<b>DOT</b>	UN1866	Resin Solution	3	III	None
<b>TDG</b>	UN1866	Resin Solution	3	III	None
<b>IMDG</b>	UN1866	Resin Solution	3	III	None
<b>IATA</b>	UN1866	Resin Solution	3	III	None

**Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):** Not applicable – product is transported only in packaged form.

**Special precautions:** None known

### 15. REGULATORY INFORMATION

**CERCLA:** This product is not subject to CERCLA reporting requirements as it is sold. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

**SARA Hazard Category (311/312):** Chronic Health, Fire Hazard

**SARA 313 Information:** This product contains the following chemicals subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372): None

**California Proposition 65**

This product contains the following chemicals known to the State of California to cause cancer or reproductive toxicity (birth defects):

Ethylbenzene	100-41-4	<0.023	Cancer
Titanium Dioxide	13463-67-7	0-70%	Cancer
Carbon Black	1333-86-4	0-10%	Cancer

**EPA TSCA Inventory:** All of the ingredients in this product are listed on the EPA TSCA Inventory.

**CANADA:**

**Canadian WHMIS Classification:** Class B-3 (Combustible Liquid), Class D Division 2 Subdivision A (Very toxic Material Causing other Toxic Effects)

This product has been classified under the CPR and this SDS discloses information elements required by the CPR.

<b>16. OTHER INFORMATION</b>
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**NFPA Rating:** Health = 2    Flammability = 2    Instability = 0  
**HMIS Rating:** Health = 2\*    Flammability = 2    Physical Hazard = 0

**SDS Revision History:** Converted to GHS format. All sections revised.

**Date of preparation:** February 27, 2015

**Date of last revision:** New SDS

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.

## Armor Top Hardener, Armor Top LH Hardener SAFETY DATA SHEET

### 1. IDENTIFICATION

**Product Identifier:** Armor Top Hardener, Armor Top LH Hardener

**Recommended use:** Floor Surfacing

**Manufacturer Name:** Dur-A-Flex, Inc.  
95 Goodwin Street  
East Hartford, CT 06108

**Telephone number:** 860-528-9838

**Emergency phone number:** 1-800- 424-9300 (CHEMTREC)

**Date of Preparation:** January 30, 2014

### 2. HAZARD(S) IDENTIFICATION

This product is one part of a 4 part product. Read and understand the hazard information on the SDS for Armor Top Resin, Armor Top Colorant and Armor Top Grit before using this product.

**Classification:**

Physical	Health
Flammable Liquid Category 3	Acute Toxicity Category 4 – Inhalation Eye Irritation Category 2A Skin Sensitization Category 1 Respiratory Sensitization Category 1 Specific Target Organ Toxicity – Single Exposure Category 3 (Respiratory Irritation)

**Labeling:**

**Danger!**



**Hazard statement(s)**

Flammable Liquid and vapor.  
 Harmful if inhaled.  
 Causes serious eye irritation.  
 May cause an allergic skin reaction.  
 May cause allergy or asthma symptoms or

**Precautionary statement(s)**

Keep away from heat, sparks, open flames, and hot surfaces.  
 No smoking.  
 Keep container tightly closed.  
 Ground and bond container and receiving equipment  
 Use explosion-proof electrical, ventilating and lighting

breathing difficulties if inhaled.  
May cause respiratory irritation.

equipment.  
Use only non-sparking tools.  
Take precautionary measures against static discharge.  
Avoid breathing mist, vapors or spray.  
Wash thoroughly after handling.  
Use only outdoors or in a well-ventilated area.  
Contaminated work clothing should not be allowed out of the workplace.  
Wear protective gloves and eye protection.  
In case of inadequate ventilation wear respiratory protection.  
IF IN EYES: Rinse cautiously with water for several minutes.  
Remove contact lenses, if present and easy to do. Continue rinsing.  
If eye irritation persists: Get medical attention.  
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.  
If skin irritation or rash occurs: Get medical attention.  
Take off contaminated clothing and wash it before reuse.  
IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
If experiencing respiratory symptoms: Call a POISON CENTER or doctor.  
In case of fire: Use dry chemical, carbon dioxide and foam to extinguish.  
Store in a well-ventilated place. Keep cool.  
Store locked up.  
Dispose of contents and container in accordance with local and national regulations.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Concentration
Homopolymer of Hexamethylene Diisocyanate	28182-81-2	70-90%
Dimethyl Ester	Proprietary	5-20%
Propylene Carbonate	108-32-7	5-15%
UV Absorber	Proprietary	1-5%
Hexamethylene-1,6-Diisocyanate	822-06-0	<0.55%

**The specific identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.**

### 4. FIRST-AID MEASURES

**Inhalation:** Immediately remove to fresh air. If breathing is difficult have qualified personnel administer oxygen. If breathing has stopped, administer artificial respiration. Get immediate medical attention. Asthma-like symptoms may develop immediately or delayed up to several hours.

**Skin contact:** Immediately remove contaminated clothing. Wash skin thoroughly with soap and water. If rash or irritation develops, get medical attention. Launder clothing before re-use.

**Eye contact:** Immediately flush with large quantities of water for 15 minutes, holding the eyelids apart. Get medical attention if irritation develops.

**Ingestion:** If conscious, rinse mouth with water. Never give anything by mouth to an unconscious or convulsing person. DO NOT INDUCE VOMITING. Get medical attention.

**Most important symptoms/effects, acute and delayed:** May be irritating to eyes, skin and respiratory system. May cause allergic skin and respiratory reaction. If an allergic respiratory reaction occurs, get immediate medical attention. Symptoms may be delayed. Individuals sensitized to isocyanates may have a life-threatening allergic reaction.

**Indication of immediate medical attention and special treatment, if necessary:** If skin or respiratory sensitization occurs, get immediate medical attention. Symptoms may be delayed for several hours after exposure. Respiratory sensitization may be life threatening.

**Notes to Physicians:** If cornea is burned, instill antibiotic/steroid preparation as needed. Workplace vapors could produce reversible corneal epithelial edema impairing vision. This compound is a skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burn. Inducing vomiting is contraindicated because of the irritating nature of the compound. There is no specific antidote for ingestions. An individual having a dermal or pulmonary sensitization reaction to this material should be removed from further exposure to any diisocyanate. Treatment is essentially symptomatic.

## 5. FIRE-FIGHTING MEASURES

**Suitable (and unsuitable) extinguishing media:** Use foam, carbon dioxide and dry chemical. Cool fire exposed containers with water.

**Specific hazards arising from the chemical:** Flammable liquid and vapors. Vapors are heavier than air and will travel along surfaces to remote ignition sources and flash back. This product reacts with water producing heat and gases. Reaction may be violent. Closed containers may rupture when exposed to extreme heat or contaminated with water. Combustion may produce isocyanate vapors and other irritating, highly toxic gases. Exposure to heated diisocyanates can be extremely dangerous.

**Special protective equipment and precautions for fire-fighters:** Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing. Do not allow run-off from fire fighting to enter drains or water courses. Decontaminate equipment and protective clothing before reuse.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment, and emergency procedures:** Evacuate spill area and keep unprotected personnel away. Remove all sources of ignition. Ventilate area with explosion proof equipment. Wear appropriate protective clothing as described in Section 8.

**Environmental Precautions:** Avoid release into the environment. Do not flush to sewer! Report releases as required by local, state and federal authorities.

**Methods and materials for containment and cleaning up:** Contain and collect with an inert absorbent. Use non-sparking tools and equipment. Neutralize with a decontamination solution made up of 80% water and 20% non-ionic surfactant (such as Plurafac SL-60 or Tergitol TMN-10) or 90% water and 3-8% ammonium hydroxide or concentrated ammonia and 2% detergent. Wait 15 minutes. Collect into an open-head metal



container. Repeat until the surface is completely decontaminated. Cover loosely with lid and allow container to vent for 72 hours to allow carbon dioxide to escape.

## 7. HANDLING AND STORAGE

**Precautions for safe handling:** Do not breathe vapors or mists. Use only with adequate ventilation. Wear respiratory protection if material is heated, sprayed, used in a confined space, or if the exposure limit is exceeded. Warning properties are not adequate to prevent overexposure from inhalation. Avoid contact with skin and eyes. Wear appropriate eye and skin protection. Wash thoroughly after handling. Do not breathe smoke and gases created by overheating or burning this material. Decomposition products can be highly toxic and irritating.

Keep product away from heat, sparks, flames and all other sources of ignition. Do not permit smoking in use or storage areas. Use with non-sparking tools and explosion proof equipment. Electrically bond and ground containers for transfer.

**Conditions for safe storage, including any incompatibilities:** Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected. Protect from physical damage.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Exposure guidelines:

Homopolymer of Hexamethylene Diisocyanate	0.5 mg/m <sup>3</sup> TWA Manufacturer 1.0 mg/m <sup>3</sup> STEL Manufacturer
Dimethyl Ester	None Established
Propylene Carbonate	None Established
UV Absorber	None Established
Hexamethylene-1,6-Diisocyanate	0.005 ppm TWA ACGIH TLV 0.02 ppm Ceiling Manufacturer

**Appropriate engineering controls:** Use with adequate general or local exhaust ventilation to maintain exposures below the occupational exposure limits.

### Individual protection measures, such as personal protective equipment:

**Respiratory protection:** If the exposure limits are exceeded or if exposure levels are unknown, a NIOSH approved positive pressure air supplied respirator with a full facepiece or air supplied hood should be used. In some situations where exposure levels are known to be below 10 times the exposure limit an air purifying respirator (organic vapor with particulate prefilter) can be used. A change schedule for cartridges is required. Selection and use of respiratory equipment must be in accordance with OSHA 1910.134 and good industrial hygiene practice.

**Skin protection:** Wear impervious gloves such as butyl rubber, neoprene or nitrile rubber.

**Eye protection:** Chemical safety goggles recommended.

**Other:** Impervious clothing as needed to prevent contact. An eye wash should be available in the immediate work area.

**Medical Surveillance:** A pre-placement physical should be given to all employees that will work with isocyanates. Employees with a prior isocyanate sensitization should be excluded from working with this product. A history of adult asthma, eczema and respiratory allergies are possible reasons for excluding or restricting the employee from working with this product. A comprehensive annual medical surveillance

program should be instituted for all employees who work with isocyanates. Once a worker has been diagnosed as sensitized, no further exposure can be permitted.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance (physical state, color, etc.):** Clear liquid  
**Odor:** Ester-like odor

<b>Odor threshold:</b> 0.01 (HDI)	<b>pH:</b> Not applicable
<b>Melting Point/Freezing Point:</b> Not available	<b>Boiling Point:</b> 392°F / 200°C (dimethyl ester)
<b>Flash point:</b> 110 °F / 43.3°C	<b>Evaporation rate:</b> 0.015
<b>Flammability (solid, gas):</b> Not flammable	
<b>Flammable limits: LEL:</b> 4.22% (dimethyl ester)	<b>UEL:</b> 12.87% (dimethyl ester)
<b>Vapor pressure:</b> 0.00000047 (HDI)	<b>Vapor density:</b> 6.6
<b>Relative density:</b> 1.11	<b>Solubility(is):</b> Insoluble in Water
<b>Partition coefficient: n-Octanol/water:</b> Not available	<b>Auto-ignition temperature</b> Not available
<b>Decomposition temperature:</b> Not available	<b>Viscosity:</b> Not available

## 10. STABILITY AND REACTIVITY

**Reactivity:** None known.

**Chemical stability:** Stable

**Possibility of hazardous reactions:** Contact with water or temperatures above 350°F may cause polymerization.

**Conditions to avoid:** Keep away from heat, sparks and flames.

**Incompatible materials:** Avoid contact with water, alcohols, amines, oxidizing agents, reducing agents, acids and bases.

**Hazardous decomposition products:** Thermal decomposition may produce carbon and nitrogen oxides, hydrogen cyanide and isocyanate vapors.

## 11. TOXICOLOGICAL INFORMATION

**Inhalation:** Inhalation of vapors or mists may cause mucous membrane and respiratory irritation. Homopolymer of hexamethylene diisocyanate has been shown to cause respiratory sensitization. Symptoms include dryness of the throat, tightness of chest and difficulty in breathing. Symptoms may be delayed for several hours after exposure. This product can produce asthmatic sensitization upon a single inhalation exposure to a relatively high concentration or upon repeated inhalation exposures to lower concentrations. Individuals with lung or breathing problems or prior allergic reactions to isocyanates must not be exposed to vapor or spray mist. The allergic respiratory reaction may be life threatening.

**Ingestion:** Swallowing may cause gastrointestinal irritation abdominal pain, nausea, vomiting and diarrhea.

**Skin contact:** Skin contact may cause mild irritation with redness, itching and swelling. May cause allergic skin reaction. Homopolymer of hexamethylene diisocyanate has been shown to be mildly irritating to rabbit skin. Animal tests have indicated that respiratory sensitization can result from skin contact with isocyanates.

**Eye contact:** May cause mild irritation with redness, tearing, stinging and swelling. Homopolymer of hexamethylene diisocyanate has been shown to be slightly irritating to rabbit eyes.

**Chronic effects from short- and long-term exposure:** Prolonged exposure to diisocyanates or polyisocyanates may cause chronic irritation, decreased lung function and lung damage and conjunctivitis.

**Reproductive Toxicity:** This product is not expected to cause adverse reproductive or developmental effects.

**Sensitization:** Hexamethylene-1,6-diisocyanate has been shown to cause sensitization in a guinea pig maximization test.

**Mutagenicity:** Homopolymer of hexamethylene diisocyanate was negative the in the AMES test (with/without metabolic activation)

**Carcinogenicity:** None of the components are listed as a carcinogen by IARC, NTP, ACGIH or OSHA.

**Acute Toxicity Values:** Not acute toxicity data for the product. Acute Toxicity Estimate (ATE) Oral LD50 5614 mg/kg; Derma; 5135 mg/kg; Inhalation 1.91 mg/L  
 Homopolymer of hexamethylene diisocyanate: Oral rat LD50 >5,000 mg/kg; Inhalation rat LC50 1.5 mg/L/4h hr (acute toxicity point estimate); Dermal rabbit LD50 >5,000 mg/kg.  
 Dimethyl Ester: Oral rat LD50 6 g/kg; Dermal rat LD50 >2500 mg/kg; Inhalation rat LC50 >140 mg/L/4 hr.  
 Propylene Carbonate: Oral rat LD50 > 5000 mg/kg; Dermal rabbit LD50 >2000 mg/kg.  
 UV Absorber: Oral rat LD50 >2000 mg/kg

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity:**

Homopolymer of hexamethylene diisocyanate: 96 hr LC0 Brachydanio rerio >100 mg/L; 48 hr EC0 daphnia magna >100 mg/L; 72 hr EC50 Scenedesmus subspicatus >1,000 mg/L

Dimethyl Ester: No data available

Propylene Carbonate: 96 hr LC50 Cyprinus carpio > 1000 mg/L; 48 hr EC50 daphnia magna > 1000 mg/L; 72 hr EC50 desmodesmus subspicatus > 900 mg/L

UV Absorber: No data available

**Persistence and degradability:** Homopolymer of hexamethylene diisocyanate is not readily biodegradable. Dimethyl Ester is readily biodegradable.

**Bioaccumulative potential:** Not expected to bioaccumulate. Dimethyl Ester has a BCF of 3.

**Mobility in soil:** Dimethyl Ester is highly mobile in soil.

**Other adverse effects:** None known.

**13. DISPOSAL CONSIDERATIONS**

Dispose in accordance with all local, state and federal regulations. Incineration is the preferred method.

**14. TRANSPORT INFORMATION**

	UN Number	Proper shipping name	Hazard Class	Packing Group	Environmental Hazard
<b>DOT</b>	None	Exempted from HazMat Regulations (49CFR 173.150f) *	None	None	None
<b>TDG</b>	None	Exempted from Regulation	None	None	None

		(Section 1.33) *			
<b>IMDG</b>	UN1993	Flammable Liquid n.o.s. (Dimethyl Ester)	3	PG III	None
<b>IATA</b>	UN1993	Flammable Liquid n.o.s. (Dimethyl Ester)	3	PG III	None

\* **Containers Not Over 450 Liters (119 gal):**

**Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):** Not applicable – product is transported only in packaged form.

**Special precautions:** None known.

<b>15. REGULATORY INFORMATION</b>
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**CERCLA:** This product has a Reportable Quantity (RQ) of 18,182 lbs. based on the RQ for Hexamethylene-1,6-Diisocyanate of 100 lbs. Releases above the RQ must be reported to the National Response Center. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

**SARA Hazard Category (311/312):** Acute Health, Chronic Health

**SARA 313 Information: This product contains the following chemicals subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372):**

Hexamethylene-1,6-Diisocyanate	822-06-0	<0.55%
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**California Proposition 65**

This product contains the following chemicals known to the State of California to cause cancer or reproductive toxicity (birth defects): None

**EPA TSCA Inventory:** All of the ingredients in this product are listed on the EPA TSCA Inventory.

**CANADA:**

**Canadian WHMIS Classification:** Class B Division 3 (Combustible Liquid), Class D Division 2 Subdivision A (Very Toxic Material Causing other Toxic Effects), Class D Division 2 Subdivision B (Toxic Material Causing other Toxic Effects)

This product has been classified under the CPR and this MSDS discloses information elements required by the CPR.

<b>16. OTHER INFORMATION</b>
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**NFPA Rating:** Health = 2    Flammability = 2    Instability = 1  
**HMIS Rating:** Health = 2    Flammability = 2    Physical Hazard = 1

**SDS Revision History:** Converted to GHS format. All sections revised.

**Date of preparation:** January 30, 2014

**Date of last revision:** New SDS

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.

## Armor Top Satin Resin SAFETY DATA SHEET

**1. IDENTIFICATION**

**Product Identifier:** Armor Top Satin Resin

**Recommended use:** Floor Surfacing

**Manufacturer Name:** Dur-A-Flex, Inc.  
95 Goodwin Street  
East Hartford, CT 06108

**Telephone number:** 860-528-9838

**Emergency phone number:** 1-800- 424-9300 (CHEMTREC)

**Date of Preparation:** January 31, 2014

**2. HAZARD(S) IDENTIFICATION**

This product is one part of a 4 part product. Read and understand the hazard information on the SDS for Armor Top Hardener, Armor Top Colorant and Armor Top Grit before using this product.

**Classification:**

Physical	Health
Flammable Liquid Category 3	Skin Corrosion Category 1C Eye Damage 1 Skin Sensitization Category 1 Acute Toxicity Category 4 (Inhalation)

**Labeling:**

**Danger!**



**Hazard statement(s)**

Flammable Liquid and vapor.  
Causes severe skin burns and eye damage.  
May cause an allergic skin reaction.  
Harmful if inhaled.

**Precautionary statement(s)**

Keep away from flames and hot surfaces. No smoking.  
Keep container tightly closed  
Ground and bond container and receiving equipment  
Use explosion-proof electrical, ventilating and lighting equipment.  
Use only non-sparking tools.  
Take precautionary measures against static discharge  
Do not breathe mists, vapors and spray.

Wash thoroughly after handling.

Use only outdoors or in a well-ventilated area.

Contaminated work clothing should not be allowed out of the workplace.

Wear protective gloves, protective clothing, eye protection and face protection.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Immediately call a POISON CENTER or doctor.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with soap and water.

Wash contaminated clothing before reuse.

Immediately call a POISON CENTER or doctor.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Immediately call a POISON CENTER or doctor.

IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a POISON CENTER or doctor.

In case of fire: Use water spray, foam, carbon dioxide or dry chemical to extinguish.

Store in a well-ventilated place. Keep cool.

Store locked up.

Dispose of contents and container in accordance with local and national regulations

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Concentration
Blocked Cycloaliphatic Diamine	Proprietary	40-60%
Dimethyl Ester	Proprietary	10-30%

**The specific identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.**

### 4. FIRST-AID MEASURES

**Inhalation:** Immediately remove victim to fresh air. If breathing is difficult have qualified personnel administer oxygen. If breathing has stopped, administer artificial respiration. Get immediate medical attention.

**Skin contact:** Immediately flush skin with plenty of soap and water for 15 minutes while removing contaminated clothing and shoes. Get immediate medical attention. Launder clothing before re-use. (Discard contaminated shoes).

**Eye contact:** Immediately flush victim's eyes with large quantities of water for at least 15 minutes, holding the eyelids apart. Get immediate medical attention.

**Ingestion:** If conscious, rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious or convulsing person. Get immediate medical attention.

**Most important symptoms/effects, acute and delayed:** Corrosive to eye and skin. May cause severe irritation or burns to mucous membranes and upper respiratory tract. Ingestion may cause burns to the mouth, throat and stomach.

**Indication of immediate medical attention and special treatment, if necessary:** If eye and skin burns occur, get immediate medical attention. If vapors or mists are inhaled and symptoms occur, get immediate medical attention. . If swallowed, get immediate medical attention.

## 5. FIRE-FIGHTING MEASURES

**Suitable (and unsuitable) extinguishing media:** Use water spray, foam, carbon dioxide or dry chemical. Do not use water jet. Cool fire exposed containers with water.

**Specific hazards arising from the chemical:** This product is flammable and forms explosive mixtures with air. Vapors are heavier than air and will travel along surfaces to remote ignition sources and flash back. Closed containers may explode if exposed to extreme heat. Runoff from fire may be corrosive. Containers contaminated with water may rupture explosively.

**Special protective equipment and precautions for fire-fighters:** Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment, and emergency procedures:** Evacuate the area and ventilate the area. Remove all ignition sources. Wear appropriate protective clothing as described in Section 8.

**Environmental precautions:** Do not allow spilled material or wash water to enter sewers, surface water or ground water. Report releases as required by local, state and federal authorities.

**Methods and materials for containment and cleaning up:** Contain and collect with an inert absorbent. Place into an appropriate container for disposal. Use non-sparking tools and equipment.

## 7. HANDLING AND STORAGE

**Precautions for safe handling:** Prevent contact with eyes, skin and clothing. Do not breathe vapors or mists. Do not taste or swallow. Wash thoroughly after handling and before eating, drinking, smoking or using the toilet. Use only with adequate ventilation. Keep product away from heat, sparks, flames and all other sources of ignition. Do not permit smoking in use or storage areas. Use with non-sparking tools and explosion proof equipment. Electrically bond and ground containers for transfer.

**Conditions for safe storage, including any incompatibilities:** Store in a cool, dry and well-ventilated place. Keep away from heat, sparks and flames. Store in original containers. Keep away from moisture and water. Protect from physical damage. Store away from oxidizing agents and other incompatible materials.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Exposure guidelines:

Blocked Cycloaliphatic Diamine	None Established
Dimethyl Ester	None Established



**Appropriate engineering controls:** Use with adequate general or local exhaust ventilation to minimize exposures levels. Use explosion proof equipment where required.

**Personal Protective Equipment:**

**Respiratory protection:** If the exposures are excessive, a NIOSH approved respirator with an organic vapor cartridge and a dust/mist prefilter or supplied air respirator is recommended. Selection and use of respiratory equipment must be in accordance with OSHA 1910.134 and good industrial hygiene practice.

**Skin protection:** Wear impervious gloves such as nitrile rubber, butyl rubber or neoprene.

**Eye protection:** Chemical safety goggles and faceshield should be worn to prevent contact.

**Other:** Impervious clothing should be worn if contact is possible. An eye wash and safety shower should be available in the immediate work area.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance (physical state, color, etc.):** Pale yellow liquid

**Odor:** Amine odor

<b>Odor threshold:</b> Not available	<b>pH:</b> Not available
<b>Melting Point/Freezing Point:</b> Not available	<b>Boiling Point:</b> Not available
<b>Flash point:</b> 110°F / 43.3°C	<b>Evaporation rate:</b> Not available
<b>Flammability (solid, gas):</b> Not applicable	
<b>Flammable limits: LEL:</b> 4.22% (dimethyl ester)	<b>UEL:</b> 12.87% (dimethyl ester)
<b>Vapor pressure:</b> Not available	<b>Vapor density:</b> Not available
<b>Relative density:</b> 0.8-0.9	<b>Solubility(is):</b> Minimal solubility in water
<b>Partition coefficient: n-Octanol/water:</b> Not applicable	<b>Auto-ignition temperature:</b> Not available
<b>Decomposition temperature:</b> Not available	<b>Viscosity:</b> Not available

**10. STABILITY AND REACTIVITY**

**Reactivity:** Not reactive under normal use conditions.

**Chemical stability:** Stable

**Possibility of hazardous reactions:** Contact with moisture or water may produce aliphatic amines and highly flammable vapors.

**Conditions to avoid:** Avoid moisture and excessive humidity. Keep away from heat, sparks and open flames.

**Incompatible materials:** Avoid contact with oxidizing agents, alkaline earth metals and acid.

**Hazardous decomposition products:** Thermal decomposition may produce carbon and nitrogen oxides and traces of hydrogen cyanide.

**11. TOXICOLOGICAL INFORMATION**

**Inhalation:** Inhalation of mists may cause severe irritation of the nose throat and upper respiratory tract. Severe exposures may cause pulmonary edema.

**Ingestion:** Swallowing may cause irritation or burns to the mouth, throat and stomach, with nausea, vomiting and diarrhea. Aspiration during ingestion or vomiting may cause chemical pneumonia.

**Skin contact:** Liquid or mists may cause severe irritation and burns. May cause allergic skin reaction.

**Eye contact:** Corrosive. Liquid or mists may cause severe irritation or burns with redness, tearing and stinging of the eyes. May cause permanent eye damage.

**Chronic effects from short- and long-term exposure:** None known.

**Reproductive Toxicity:** This product is not expected to cause adverse reproductive or developmental effects.

**Sensitization:** Blocked cycloaliphatic diamine has been shown to cause sensitization in a guinea pig maximization test

**Mutagenicity:** Blocked cycloaliphatic diamine was negative in the AMES test.

**Carcinogenicity:** None of the components are listed as a carcinogen by IARC, NTP, ACGIH or OSHA.

**Acute Toxicity Values:**

Blocked Cycloaliphatic Diamine: Oral rat LD50 4150 mg/kg; Dermal rat LD50 >5000 mg/kg; Inhalation rat LC50 1.276 mg/L/4 hr.

Dimethyl Ester: Oral rat LD50 6 g/kg; Dermal rat LD50 >2500 mg/kg; Inhalation rat LC50 >140 mg/L/4 hr.

<b>12. ECOLOGICAL INFORMATION</b>
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**Ecotoxicity:**

Blocked Cycloaliphatic Diamine: 96 hr LC50 Danio rerio > 69.2 mg/L; 48 hr EC50 30.7 mg/L; 72 hr EC50 Desmodesmus subspicatus 257.5 mg/L

Dimethyl Ester: No data available

**Persistence and degradability:** Blocked cycloaliphatic diamine is not readily biodegradable. Dimethyl ester is readily biodegradable.

**Bioaccumulative potential:** Dimethyl ester has an estimated BCF of 3.2.

**Mobility in soil:** Dimethyl ester is highly mobile in soil.

**Other adverse effects:** None known.

<b>13. DISPOSAL CONSIDERATIONS</b>
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Dispose in accordance with all local, state and federal regulations.

<b>14. TRANSPORT INFORMATION</b>
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	UN Number	Proper shipping name	Hazard Class	Packing Group	Environmental Hazard
<b>DOT</b>	UN 2924	Flammable liquids, corrosive, n.o.s. (Cycloaliphatic Diamine, Dimethyl Ester)	3 (8)	PG III	None
<b>TDG</b>	UN 2924	Flammable liquids, corrosive n.o.s. (Cycloaliphatic Diamine, Dimethyl Ester)	3 (8)	PG III	None
<b>IMDG</b>	UN 2924	Flammable liquids, corrosive n.o.s. (Cycloaliphatic Diamine, Dimethyl Ester)	3 (8)	PG III	None
<b>IATA</b>	UN 2924	Flammable liquids, corrosive n.o.s. (Cycloaliphatic Diamine, Dimethyl Ester)	3 (8)	PG III	None

\*This product qualifies for "Limited Quantity" for any package less than 1.3 gallons.

**Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):** Not applicable – product is transported only in packaged form.

**Special precautions:** None known

## 15. REGULATORY INFORMATION

**CERCLA:** This product is not subject to CERCLA reporting requirements as it is sold. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

**SARA Hazard Category (311/312):** Acute Health, Fire Hazard

**SARA 313 Information: This product contains the following chemicals subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372):** None

### California Proposition 65

This product contains the following chemicals known to the State of California to cause cancer or reproductive toxicity (birth defects): None

**EPA TSCA Inventory:** All of the ingredients in this product are listed on the EPA TSCA Inventory.

### CANADA:

**Canadian WHMIS Classification:** Class B Division 3 (Combustible Liquid); Class D Division 2 Subdivision B (Toxic material causing other chronic effects); Class E (Corrosive)

This product has been classified under the CPR and this MSDS discloses information elements required by the CPR.

## 16. OTHER INFORMATION

**NFPA Rating:** Health = 3      Flammability = 2      Instability = 0  
**HMIS Rating:** Health = 3      Flammability = 2      Physical Hazard = 0

**SDS Revision History:** Converted to GHS format. All sections revised.

**Date of preparation:** January 31, 2014

**Date of last revision:** New SDS

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.