

## Dur-A-Shield II Hardener SAFETY DATA SHEET

**1. IDENTIFICATION**

**Product Identifier:** Dur-A-Shield II 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:** December 5, 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-Shield II Resin before using this product.

**Classification:**

Physical	Health
Flammable Liquid Category 3	Skin Corrosion Category 1B Eye Damage Category 1 Skin Sensitization Category 1 Toxic to Reproduction Category 2 Carcinogen Category 2 Specific Target Organ Toxicity Single Exposure Category 3 (Respiratory Irritation) Specific Target Organ Toxicity Repeat Exposure Category 2

**Labeling:**

**Danger!**



**Hazard statement(s)**

Flammable Liquid and vapor.  
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.  
Keep away from heat, sparks, open flames, and hot surfaces.  
No smoking.

May cause damage to central nervous system, kidneys and liver through prolonged or repeated exposure.

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 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, 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. Immediately call a POISON CENTER or doctor.  
 Wash contaminated clothing before reuse.  
 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.  
 In case of fire: Use water spray, foam, carbon dioxide or dry chemical to extinguish.  
 Store in a well-ventilated place. Keep cool. Keep container tightly closed  
 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	10-30
Triethyleneglycol diamine	929-59-9	10-20
Xylene	1330-20-7	1-10
Bisphenol A Epoxy Resin	25068-38-6	1-10
1-Methoxy-1 propanol (PGME)	107-98-2	1-5
Polyethylenepolyamine-fatty acids, C18-unsaturated, dimer condensate	68410-23-1	1-5
Salicylic Acid	69-72-7	1-5
1,3-cyclohexanedimethanamine	2579-20-6	1-5
Ethylbenzene	100-41-4	1-5
4-tert-butylphenol	98-54-4	<2

Benzene-1,3-Dimethanamine	1477-55-0	<1
Trimethylhexamethylenediamine	25620-58-0	<1
Triethylenetetramine	112-24-3	<1
4-Nonyl-phenol	25154-52-3	<0.5

**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 immediate 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 20 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. Permanent damage may occur. May cause allergic skin reaction. Inhalation of vapors or mists may cause severe respiratory irritation or burns with coughing and difficulty in breathing. Ingestion may cause burns to the mouth, throat and stomach. Possible reproductive hazard. May cause cancer based on animal data.

**Indication of immediate medical attention and special treatment, if necessary:** If contact occurs, 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:** Vapors are heavier than air and may travel to ignition source and flash back. Closed containers may explode due to pressure build up when exposed to extreme heat. Combustion may produce carbon oxides, nitrogen oxides and ammonia.

**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
Triethyleneglycol diamine	None Established
Xylene	100 ppm TWA OSHA PEL 100 ppm TWA ACGIH TLV, 150 ppm ACGIH STEL
Bisphenol A Epoxy Resin	None Established
1-Methoxy-1 propanol (PGME)	50 ppm TWA ACGIH TLV 100 ppm STEL ACGIH TLV
Polyethylenepolyamine-fatty acids, C18-unsaturated, dimer condensate	None Established
Salicylic Acid	None Established
1,3-cyclohexanedimethanamine	None Established
Ethylbenzene	100 ppm TWA OSHA PEL 20 ppm TWA ACGIH TLV
4-tert-butylphenol	None Established
Benzene-1,3-Dimethanamine	0.1 mg/m <sup>3</sup> Ceiling ACGIH TLV
Trimethylhexamethylenediamine	None Established
Triethylenetetramine	1 ppm AIHA WEEL
4-Nonyl-phenol	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:** Amine and aromatic odor

<b>Odor threshold:</b> 0.3 ppm (xylene)	<b>pH:</b> Not available
<b>Melting Point/Freezing Point:</b> Not available	<b>Boiling Point:</b> 290°C / 143.3°C (xylene)
<b>Flash point:</b> 82°F / 27.8°C	<b>Evaporation rate (butyl acetate =1):</b> 0.7
<b>Flammability (solid, gas):</b> Not applicable	
<b>Flammable limits: LEL:</b> 1% (xylene)	<b>UEL:</b> 7% (xylene)
<b>Vapor pressure:</b> 6 mmHg (xylene)	<b>Vapor density (air =1):</b> 3.7
<b>Relative density:</b> <1	<b>Solubility(is):</b> Negligible 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:** Reacts with epoxy resins.

**Chemical stability:** Stable.

**Possibility of hazardous reactions:** Reacts with epoxy to cause heat.

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

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

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

## 11. TOXICOLOGICAL INFORMATION

**Inhalation:** Inhalation of mists may cause mucous membrane and upper respiratory tract irritation. Excessive mists 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:** Over exposure to xylenes may cause liver damage. In repeated dose studies, the principle effects of xylenes were adaptive changes in the liver, body weight changes, organ weight changes and altered motor coordination.

**Reproductive Toxicity:** In a 2 generational reproduction study, rats were administered 70, 200 and 600 mg/kg of 4-tert-butylphenol in their diet. At 600 mg/kg, slight decrease in the number of implantation sites, live pups born and viability of the pups were reported. Furthermore, a statistically significant decrease in pup body weights and litter weights in the F1 and F2 generation from 200 mg/kg group was reported, and a smaller litter size. A delay in vaginal opening and preputial separation in the F1 generation was reported as well at 600 mg/kg. In the F0 and F1 female generation a marked increase in atrophy of the vaginal epithelium was reported at 200 mg/kg. NOAEL at 70 mg/kg bw/day was derived for effect on reproduction and developmental toxicity

**Sensitization:** Bisphenol A epoxy resin, trimethylhexamethylenediamine, triethylenetetramine and benzene-1,3-dimethanamine have been shown to cause sensitization in studies with laboratory animals.

**Mutagenicity:** None of the components have been shown to cause mutagenicity in bacterial or animal studies.

**Carcinogenicity:** Ethylbenzene is listed by IARC as “Possibly Carcinogenic to Humans” Group 2B and by ACGIH as a “Confirmed Animals Carcinogen with Unknown Relevance to Humans”, A3. None of the other components are listed as a carcinogen by IARC, NTP, OSHA or ACGIH.

**Acute Toxicity Values:** No toxicity data for the product. The acute toxicity estimate for the product: Oral 4166 mg/kg, Dermal 47619 mg/kg  
Benzyl Alcohol: Oral rat LD50 1620 mg/kg; Inhalation rat LC50 > 4.178 mg/L  
Triethyleneglycol diamine: Oral rat LD50 1600 mg/kg, Dermal rabbit LD50 >8000 mg/kg.  
Xylene: Oral rat LD50 5251 mg/kg, Inhalation rabbit LD50, Inhalation rat LC50 29091 mg/m<sup>3</sup>, Dermal rabbit LD50 >4200 mg/kg.  
Bisphenol A Epoxy Resin: Oral rat LD50 > 2000 mg/kg; Dermal rabbit LD50 >2000 mg/kg  
1-Methoxy-1 propanol: Oral rat LD50 4016 mg/kg; Inhalation rat LC50 > 7000 ppm/6 hr; Dermal rabbit LD50 > 2000 mg/kg  
Polyethylenepolyamine-fatty acids, C18-unsaturated, dimer condensate: Oral rat LD50 > 2000 mg/kg, Dermal rat LD50 >2000 mg/kg  
Salicylic Acid: Oral rat LD50 891 mg/kg; Dermal rabbit LD50 > 2000 mg/kg  
1,3-Cyclohexanedimethanamine: Oral rat LD50 >300 – 2000 mg/kg; Dermal rabbit LD50 1700 mg/kg  
Ethylbenzene: Oral rat LD50 3500 mg/kg, Dermal rabbit LD50 15.4 g/kg  
4-tert-butylphenol: Oral rat LD50 >2000 mg/kg, Inhalation rat LC50 5.6 mg/L/4 hr, Dermal rabbit LD0 16 g/kg  
Benzene-1,3-Dimethanamine: Oral rat LD50 500 mg/kg; Inhalation rat LC50 1.34 mg/L/4 hr; Dermal rat LD50 > 3100 mg/kg  
Trimethylhexamethylenediamine: No toxicity data available  
Triethylenetetramine: Oral rat LD50 1080 mg/kg, Dermal rabbit LD50 675 mg/kg  
4-Nonyl-phenol: Oral rat LD50 1412 mg/kg, Dermal rabbit LD50 2031 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  
Triethyleneglycol diamine: No data available  
Xylene: 96 hr LC50 *Oncorhynchus mykiss* 2.6 mg/L, 24 hr LC50 *daphnia magna* 3.6 mg/L, 72 hr EC50 *Pseudokirchnerella subcapitata* 4.36 mg/L  
Bisphenol A Epoxy Resin: : 96 hr LC50 *Oryzias latipes* > 15 mg/L; 48 hr EC50 *daphnia magna* > 100 mg/L; 72 hr EC50 *Desmodesmus subspicatus* > 100 mg/L  
1-Methoxy-1 propanol: 96 hr LC50 *Pimephales promelas* 20800 mg/L; 48 hr EC50 *daphnia magna* 23,300 mg/L;  
Polyethylenepolyamine-fatty acids, C18-unsaturated, dimer condensate: 96 hr LC50 *Danio rerio* 7.07 mg/L 48 hr EC50 *daphnia magna* 5.18 mg/L, 72 hr EC50 *Pseudokirchnerella subcapitata* 4.11 mg/L  
Salicylic Acid: 48 hr EC50 *daphnia magna* 870 mg/L; 72 hr EC50 *Desmodesmus subspicatus* > 100 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  
Ethylbenzene: 96 hr EC50 *Oncorhynchus mykiss* 4.2 mg/L, 48 hr EC50 *daphnia magna* 1.8 mg/L, 72 hr EC50 *Skeletonema costatum* 4.9 mg/L.  
4-tert-butylphenol: 96 hr LC50 *Oncorhynchus mykiss* >1 mg/L, 48 hr EC50 *daphnia magna* 4.8 mg/L, 72 hr EC50 *Pseudokirchnerella subcapitata* 14 mg/L  
Benzene-1,3-Dimethanamine: 96 hr LC50 fish 87.6 mg/L, 48 hr EC50 *daphnia magna* 20.3 mg/L, 72 hr EC50 Algae 20.3 mg/L  
Trimethylhexamethylenediamine: No data available

Triethylenetetramine: No data available

4-Nonyl-phenol: 96 hr LC50 fish 0.128 mg/L, 48 hr EC50 daphnia magna 0.085 mg/L, 72 hr Eb50 algae 1.3 mg/L

**Persistence and degradability:** Benzyl alcohol, 1-methoxy-1 propanol, 4-tert-butylphenol and xylene are readily biodegradable.

**Bioaccumulative potential:** Benzyl alcohol, salicylic acid and 1-methoxy-1 propanol have a BCF of <5. Xylene has a calculated BCF of <25.

**Mobility in soil:** Benzyl alcohol and 1-methoxy-1 propanol are highly mobility in soil. Xylene has a moderate to high 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 2734	Amines, liquid, corrosive, flammable n.o.s. (Xylene, Triethyleneglycol diamine)	8 (3)	PG II	None
<b>TDG</b>	UN 2734	Amines, liquid, corrosive, flammable n.o.s. (Xylene, Triethyleneglycol diamine)	8 (3)	PG II	None
<b>IMDG</b>	UN 2734	Amines, liquid, corrosive, flammable n.o.s. (Xylene, Triethyleneglycol diamine)	8 (3)	PG II	None
<b>IATA</b>	UN 2734	Amines, liquid, corrosive, flammable n.o.s. (Xylene, Triethyleneglycol diamine)	8 (3)	PG II	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. 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

**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	Cancer	1-5%
Epichlorohydrin	106-89-8	Cancer, male reproductive toxicity	45 ppm

**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 SDS discloses information elements required by the CPR.

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

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

**Date of preparation:** December 5, 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.