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### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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Product Name: **TRA-BOND F113SC Hardener**  
TRA-CON, INC.  
45 Wiggins Avenue  
Bedford, MA 01730  
781-275-6363  
1-800-872-2661  
Emergency Telephone: 1-800-424-9300 (24 hours, CHEMTREC)

Date Printed: 6/28/2002  
Revision Date: 6/14/2002  
Revision: D

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### 2. COMPOSITION/INFORMATION ON INGREDIENTS

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Component	CAS Number	%	OSHA ACGIH	TWA ppm	mg/m <sup>3</sup>	STEL ppm	mg/m <sup>3</sup>	Ceiling ppm	mg/m <sup>3</sup>
Bisphenol A/Epichlorohydrin Based Epoxy Resin	025068-38-6	1 - 10							
1-Propanamine, 3,3'-[oxybis(2,1-ethanediyloxy)]bis-	004246-51-9	55 - 65							
Benzenemethanol, 4-amino-.alpha.,.alpha.-bis(4-aminophenyl)-, reaction products with aniline	068389-46-8	< 5							
Proprietary Epoxy polyamine adduct	NJ 05995500-(H1916U)	15 - 25							
Diethylenetriamine	000111-40-0	5 - 15							
Non-hazardous ingredients	--	< 5							

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### 3. HAZARDS IDENTIFICATION

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Effects of Overexposure: Repeated contact or breathing of vapors may cause irritation; material is also a strong sensitizer. Eye and skin contact may cause transient irritation.

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### 4. FIRST AID MEASURES

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Eyes: Flush with water, get medical attention.  
Skin: Wash with soap and water; remove contaminated clothing.  
Inhalation: Remove to fresh air.  
Ingestion: No known antidote but give milk or water; do NOT induce vomiting if swallowed; get medical attention.

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### 5. FIREFIGHTING MEASURES

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Flashpoint: > 200°F  
Flashpoint Method: CC  
Extinguishing Media: Dry chemicals, chemical foam, carbon dioxide, water.  
Special Firefighting Measures: Avoid breathing smoke. Addition of water may reduce flame intensity.  
Fire and Explosion Hazards: Toxic gases may be liberated; handle as combustible; store in a cool place.  
Flammable Limits: N/A  
LEL: N/A

UEL N/A

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#### 6. ACCIDENTAL RELEASE MEASURES

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Spill and Leak Procedures Prevent skin and eye contact. Soak up in absorbent material, or scrape up, and transfer to disposal container. Wipe up remaining residue with solvents, observing solvent flammability cautions, or use detergents.

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#### 7. HANDLING AND STORAGE

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Special Sensitivity Store in cool place in closed containers.

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#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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Local Exhaust Recommended

Mechanical Exhaust Recommended

Eye Protection Requirements Safety glasses or goggles

Glove Requirements Required

Other Protection As required to prevent all body contact; eye bath and/or safety shower.

Respirator Requirements Air supplied or organic canister, mask in confined areas.

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#### 9. PHYSICAL AND CHEMICAL PROPERTIES

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Appearance and Odor Blue, low viscosity liquid, ammoniacal odor.

Boiling Point (°F) > 295

Solubility in Water partial

Specific Gravity (H<sub>2</sub>O=1) 1.0

Evaporation Rate (BuAc=1) < 1

Vapor Pressure (mm Hg.) < 1

Vapor Density (air = 1) N/D

Percent Volatile N/D

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#### 10. STABILITY AND REACTIVITY

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Stability Stable

Conditions to Avoid (Stability) Avoid contact with metals corroded by liquid amines; avoid high temperatures.

Incompatibility (Materials to Avoid) Strong acids and bases, strong oxidizing agents.

Hazardous Decomposition Products Carbon monoxide, carbon dioxide, aldehydes, phenol.

Hazardous Polymerization Will Not Occur

Conditions to Avoid (Reactivity) Chlorinated compounds; exotherms when used to cure epoxy resins.

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#### 11. TOXICOLOGICAL INFORMATION

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Primary Entry Route(s) Skin, eyes, inhalation.

Oral, LD50 > 1080 mg/kg

Dermal, LD50 > 1090 mg/kg

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#### 12. ECOLOGICAL INFORMATION

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Not available

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#### 13. DISPOSAL CONSIDERATIONS

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Waste Disposal Methods Dispose of as hazardous waste according to local, state and federal regulations. Disposal method can be land burial or chemical incineration as regulated by all

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governmental agencies.

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#### 14. TRANSPORTATION INFORMATION

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Not Applicable

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#### 15. REGULATORY INFORMATION

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TSCA: All components are on the TSCA inventory.

STATE LAWS:

The information given and the recommendations made herein apply to our product(s) alone and are not combined with other product(s). Such are based on our research and on data from other reliable sources and are believed to be accurate. no guaranty of accuracy is made. it is the purchaser's responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes

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#### 16. OTHER INFORMATION

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MSDS Date: 6/14/2002

Revision: D

HMIS Coding: H: 3 F: 1 R: 0

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: **TRA-BOND F113SC Pre-Mixed and Frozen**  
TRA-CON, INC.  
45 Wiggins Avenue  
Bedford, MA 01730  
781-275-6363  
1-800-872-2661  
Emergency Telephone: 1-800-424-9300 (24 hours, CHEMTREC)

Date Printed: 6/28/2002  
Revision Date: 6/14/2002  
Revision: D

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Number	%	OSHA ACGIH	TWA ppm	mg/m3	STEL ppm	mg/m3	Ceiling ppm	mg/m3
Bisphenol A/Epichlorohydrin Based Epoxy Resin	025068-38-6	75 - 85							
1-Propanamine, 3,3'-[oxybis(2,1-ethanedioxy)]bis-	004246-51-9	10 - 20							
Diethylenetriamine	000111-40-0	< 5							
Proprietary Epoxy polyamine adduct	NJ 05995500-(H1916U)	1 - 10							
Methyl alcohol	000067-56-1	> 1		200	260	--	--	--	--
				200	262	250	328	--	--

COMMENTS: SYN - Methanol.

3. HAZARDS IDENTIFICATION

Effects of Overexposure: Repeated contact or breathing of vapors may cause irritation; material is also a strong sensitizer. Eye and skin contact may cause transient irritation.

4. FIRST AID MEASURES

Ingestion: No known antidote but give milk or water; do NOT induce vomiting if swallowed; get medical attention.

5. FIREFIGHTING MEASURES

Flashpoint: > 212°F  
Flashpoint Method: CC  
Extinguishing Media: Dry chemicals, chemical foam, carbon dioxide, water.  
Special Firefighting Measures: Avoid breathing smoke. Addition of water may reduce flame intensity.  
Fire and Explosion Hazards: Toxic gases may be liberated; handle as combustible; store in a cool place.  
Flammable Limits: N/A  
LEL: N/A  
UEL: N/A

6. ACCIDENTAL RELEASE MEASURES

Spill and Leak Procedures                      Prevent skin and eye contact. Soak up in absorbent material, or scrape up, and transfer to disposal container. Wipe up remaining residue with solvents, observing solvent flammability cautions, or use detergents.

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#### 7. HANDLING AND STORAGE

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Special Sensitivity                              Store in cool place in closed containers.

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#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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Local Exhaust                                  Recommended  
Mechanical Exhaust                          Recommended  
Eye Protection Requirements              Safety glasses or goggles  
Glove Requirements                          Required  
Respirator Requirements                    Air supplied or organic canister, mask in confined areas.

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#### 9. PHYSICAL AND CHEMICAL PROPERTIES

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Appearance and Odor                        Blue, low viscosity liquid, ammoniacal odor.  
Boiling Point (°F)                            > 295  
Solubility in Water                            neg  
Specific Gravity (H<sub>2</sub>O=1)                    1.1  
Evaporation Rate (BuAc=1)                < 1  
Vapor Pressure (mm Hg.)                    ND  
Vapor Density (air = 1)                      NA  
Percent Volatile                              ND

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#### 10. STABILITY AND REACTIVITY

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Stability                                        Stable  
Conditions to Avoid (Stability)            Avoid contact with metals corroded by liquid amines; avoid high temperatures.  
Incompatibility (Materials to Avoid)    Strong acids and bases, strong oxidizing agents.  
Hazardous Decomposition Products    Carbon monoxide, carbon dioxide, aldehydes, phenol.  
Hazardous Polymerization                Will Not Occur  
Conditions to Avoid (Reactivity)        High temperatures, strong acids; certain organics, metallic acids.

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#### 11. TOXICOLOGICAL INFORMATION

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Primary Entry Route(s)                    Skin, eyes, inhalation.  
Oral, LD50                                    > 1080 mg/kg  
Dermal, LD50                                > 1090 mg/kg

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#### 12. ECOLOGICAL INFORMATION

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Not available

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#### 13. DISPOSAL CONSIDERATIONS

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Waste Disposal Methods                    Dispose of as hazardous waste according to local, state and federal regulations. Disposal method can be land burial or chemical incineration as regulated by all governmental agencies.

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#### 14. TRANSPORTATION INFORMATION

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Not Applicable

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15. REGULATORY INFORMATION

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TSCA: All components are on the TSCA inventory.

STATE LAWS:

FLORIDA TOXIC SUBSTANCE LIST

000067-56-1 Methyl > 1  
alcohol

The information given and the recommendations made herein apply to our product(s) alone and are not combined with other product(s). Such are based on our research and on data from other reliable sources and are believed to be accurate. no guaranty of accuracy is made. it is the purchaser's responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes

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16. OTHER INFORMATION

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MSDS Date: 6/14/2002      Revision: D      HMIS Coding: H: 3   F: 1   R: 0

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: **TRA-BOND F113SC Resin**

Date Printed: 6/28/2002

TRA-CON, INC.  
45 Wiggins Avenue  
Bedford, MA 01730  
781-275-6363  
1-800-872-2661

Revision Date: 6/14/2002

Revision: D

Emergency Telephone: 1-800-424-9300 (24 hours, CHEMTREC)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Number	%	OSHA		STEL		Ceiling		
			ACGIH	TWA	ppm	mg/m3	ppm	mg/m3	ppm
Phenol,4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl) oxirane	025068-38-6	90 - 100							
Methyl alcohol	000067-56-1	> 1		200	260	--	--	--	--
				200	262	250	328	--	--

COMMENTS: SYN -  
Methanol.

3. HAZARDS IDENTIFICATION

Effects of Overexposure: Repeated contact or breathing of vapors may cause irritation; material is also a strong sensitizer. Eye and skin contact may cause transient irritation.

4. FIRST AID MEASURES

Eyes: Flush with water, get medical attention.  
Skin: Wash with soap and water; remove contaminated clothing.  
Inhalation: Remove to fresh air.  
Ingestion: No known antidote but give milk or water; induce vomiting if large amount swallowed.

5. FIREFIGHTING MEASURES

Flashpoint: > 480°F  
Flashpoint Method: PMCC  
Extinguishing Media: Dry chemicals, chemical foam, carbon dioxide, water.  
Special Firefighting Measures: Avoid breathing smoke. Addition of water may reduce flame intensity.  
Fire and Explosion Hazards: Toxic gases may be liberated; handle as combustible; store in a cool place.  
Flammable Limits: N/A  
LEL: N/A  
UEL: N/A

6. ACCIDENTAL RELEASE MEASURES

Spill and Leak Procedures: Prevent skin and eye contact. Soak up in absorbent material or scrape up and transfer to disposal container. Wipe up remaining residue with solvents observing solvent flammability cautions, or use detergents.

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## 7. HANDLING AND STORAGE

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Special Sensitivity                      Store in cool place in closed containers.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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Local Exhaust                              Recommended  
Mechanical Exhaust                      Recommended  
Eye Protection Requirements           Safety glasses or goggles  
Glove Requirements                      Rubber or plastic disposable  
Other Protection                          As required to prevent all body contact; eye or bath and/or safety shower  
Respirator Requirements                Air supplied or organic canister, mask in confined areas.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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Appearance and Odor                    Light amber liquid, mild odor.  
Boiling Point (°F)                        > 500  
Solubility in Water                        low  
Specific Gravity (H<sub>2</sub>O=1)                1.17  
Evaporation Rate (BuAc=1)            N/A  
Vapor Pressure (mm Hg.)                < 1  
Vapor Density (air = 1)                 N/D  
Percent Volatile                         N/D

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## 10. STABILITY AND REACTIVITY

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Stability                                    Stable  
Conditions to Avoid (Stability)        Avoid uncontrolled excess heating over long periods; avoid uncontrolled amine reactor  
Incompatibility (Materials to Avoid)   Strong acids and bases, strong oxidizing agents.  
Hazardous Decomposition Products   Carbon monoxide, carbon dioxide, aldehydes, phenol.  
Hazardous Polymerization            Will Not Occur  
Conditions to Avoid (Reactivity)      High temperatures, strong acids; certain organics, metallic acids.

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## 11. TOXICOLOGICAL INFORMATION

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Primary Entry Route(s)                Skin, eyes, inhalation.  
Oral, LD50                                 > 11.4 g/kg  
Dermal, LD50                              > 20 ml/kg

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## 12. ECOLOGICAL INFORMATION

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Not available

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## 13. DISPOSAL CONSIDERATIONS

---

Waste Disposal Methods                Dispose of as hazardous waste according to local, state and federal regulations.  
Disposal method can be land burial or chemical incineration as regulated by all governmental agencies.

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## 14. TRANSPORTATION INFORMATION

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Not Applicable

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## 15. REGULATORY INFORMATION

---

TSCA: All components are on the TSCA inventory.

STATE LAWS:

FLORIDA TOXIC SUBSTANCE LIST

000067-56-1 Methyl  
alcohol

> 1

The information given and the recommendations made herein apply to our product(s) alone and are not combined with other product(s). Such are based on our research and on data from other reliable sources and are believed to be accurate. no guaranty of accuracy is made. it is the purchaser's responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes.

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16. OTHER INFORMATION

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MSDS Date: 6/14/2002

Revision: D

HMIS Coding: H: 1 F: 1 R: 0