# SAFETY DATA SHEET

 Product:
 556-A

 Revision Date:
 6/01/2015

## **1. MATERIAL IDENTIFICATION**

Product Name:	Aremco-Bond 556-A Activator
Product Description:	Amine Mixture, Silver, Amine Odor
Product Use:	High Performance Electrically Conductive Adhesive Hardener
Manufacturer:	Aremco Products, Inc. 707-B Executive Blvd. Valley Cottage, NY 10989
Telephone:	845-268-0039
Emergency Phone:	845-268-0039 or Infotrac (24/7) 800-535-5053

# 2. HAZARDS IDENTIFICATION

#### GHS Classification:

Skin Corrosion	Category 1A
Skin Sensitization	Category 1
Eye Damage/Irritation	Category 1
Aquatic, Chronic	Category 1

#### GHS Label Elements:



GHS Signal Word: Danger

#### GHS Hazard Determining Component:

Fatty Acids, C18-Unsaturated, Dimers, Reaction Products with Polyethylenpolyamines TOFA, Reaction Products with TEPA 3,6,9-Triazaundecamethylenediamine 3,6-Diazaoctanethylenediamine

#### GHS Hazard Statements for Health Hazards:

H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H410	Very toxic to aquatic life with long lasting effects.

#### GHS Precautionary Statements - Prevention

GHS Precautionary Statements - Prevention:		
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.	
P264	Wash hands thoroughly after handling.	
P272	Contaminated work clothing should not be allowed out of the workplace.	
P273	Avoid release to the environment.	
P280	Wear protective gloves and eye/face protection.	

#### GHS Precautionary Statements – Response:

P301+P330+P331	IF SWALLOWED: Rinse mouth. Do not induce vomiting.
P303+P361+P353	IF ON SKIN: Remove immediately all contaminated clothing. Rinse skin with water.
P333+P313	If skin irritation or rash occurs, get medical attention.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes.
	Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a poison center or doctor.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.

#### GHS Storage/Disposal:

P501
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Dispose in accordance with local, regional, national or international regulations.

## 3. COMPOSITION

Chemical Name	CAS No.	EC No.	Concentration	GHS Product Identifier
TOFA, Reaction Products with TEPA	68953-36-6	273-201-6	10.0-25.0%	H315, Skin Corrosion/Irritation, Cat 2 H317 Sensitization, Skin, Cat 1 H319 Eye Damage/Irritation, Cat 2A H335 STOT, SE; Respiratory Tract Irritation, Cat 3 H400 Aquatic Acute, Cat 1 H410 Aquatic Chronic, Cat 1
Fatty Acids, C18-Unsaturated, Dimers, Reaction Products with Polyethylenepolyamines	68410-23-1	614-452-7	10.0-25.0%	H312 Acute Toxicity, Dermal, Cat 4 H314 Skin Corrosion//Irritation, Cat 1A H317 Sensitization, Skin, Cat 1 H318 Eye Damage/Irritation, Cat 1 H400 Aquatic Acute, Cat 1 H410 Aquatic Chronic, Cat 1
3,6-Diazaoctanethylenediamine	112-24-3	203-950-6	2.5-10.0%	H302 Acute Toxicity, Oral, Cat 4 H312 Acute Toxicity, Dermal, Cat 4 H314 Skin Corrosion//Irritation, Cat 1B H317 Sensitization, Skin, Cat 1
3,6,9-Triazaundecamethylenediamine	112-57-2	203-986-2	2.5-10.0%	H302 Acute Toxicity, Oral, Cat 4 H312 Acute Toxicity, Dermal, Cat 4 H314 Skin Corrosion//Irritation, Cat 1B H317 Sensitization, Skin, Cat 1 H318 Eye Damage/Irritation, Cat 1
Silver	7440-22-4	231-131-3	50.0-80.0%	None

## 4. FIRST AID MEASURES

#### Eye Exposure:

Hold evelids open and flush with a steady, gentle stream of water for at least 15 minutes. Seek immediate medical attention, preferably with an ophthalmologist. If a physician is not immediately available, eye irrigation should be continued for an additional 15 minutes.

#### Skin Exposure:

Immediately wipe excess material off skin with a dry cloth then wash with plenty of soap and water for at least 5 minutes. See medical attention if irritation develops or persists. Remove contaminated clothing and shoes and clean thoroughly before re-use.

#### Inhalation:

Remove from immediate source of exposure and assure that victim is breathing. If not breathing, administer cardio-pulmonary resuscitation (CPR). If breathing is difficult, administer oxygen if available. Seek medical attention. Symptoms can be delayed several hours.

#### Ingestion:

If swallowed, do not induce vomiting. If victim is conscious and alert, give 1-2 glasses of milk or water to drink. Do not give anything by mouth to an unconscious person. Seek medical attention immediately. Do not leave victim unattended. To prevent aspiration of swallowed product, lay victim on side with head lower than waist. Vomiting may occur spontaneously. If vomiting occurs and the victim is conscious, give additional milk or water to further dilute the chemical.

#### Medical Conditions Possibly Aggravated by Exposure:

Inhalation of product may aggravate existing chromic respiratory problems such as asthma, emphysema or bronchitis. Skin contact may aggravate existing skin disease.

5. FIRE FIGHTING MEASURES	
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Extinguishing Media: Special Fire Fighting Procedures: Use carbon dioxide, dry chemical, or appropriate foam.

Firefighters should wear NIOSH/MSHA approved positive pressure breathing apparatus with full face-piece and full chemical resistant protective clothing. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later. Extreme heat or water contamination may cause closed containers to explode.

## 6. ACCIDENTAL RELEASE MEASURES

Personal Protection:	Wear chemical goggles, body-covering protective clothing, chemical resistant gloves, and rubber boots. Use NIOSH approved respirator where mist occurs.
Spill Cleanup:	Mop up liquid and dispose in accordance with federal, state and local regulations or permits. Flush area with solvent then water to complete cleanup.

# 7. HANDLING AND STORAGE

Handling:

Storage:

Avoid contact with eyes, skin and clothing. Avoid breathing vapors. Keep container closed. Promptly clean residue from closures with cloth and solvent. Promptly clean up spills. Store at room temperature in a dry, well ventilated area, away from combustible material, and away from ignition sources. Keep containers closed. Store in clean plastic or steel containers.

# 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

#### Components with limit values that require monitoring at the workplace:

CAS No. EC No. TLV (	ng/m <sup>3</sup> ) PEL (mg/m <sup>3</sup> )	
112-24-3 203-950-6 6	6	
mine 112-57-2 203-986-2 5	5	
Normal ventilation for good working conditions should be used. A eyewash fountain should be within direct access.	eep containers closed. Safety shower and	
eyewash fountain should be within direct access. This product is not considered respirable in either the liquid or cured forms. However, if the cured product is polished, ground or chipped during processing, handling or use, powders may be released as airborne respirable particles. In these instances, appropriate personal protection equipment and local ventilation controls must be employed. If exposure limits are exceeded and local ventilation is unavailable, a supplied-air respirator or a self-contained NIOSH-approved vapor respirator is required. Wear body-covering protective clothing and gloves.		

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Form:	Paste
Color:	Silver
Odor:	Amine-Like
Odor Threshold:	Not Determined
pH:	Not Determined
Melting Point Range:	Not Determined
Boiling Point Range:	631 °F (333 °C)
Flash Point (Closed Cup):	325 °F (163 °C)
Flammability (solid, gaseous):	Not Applicable
Decomposition Temperature:	Not Determined
Auto Igniting:	Product is not self-igniting
Danger of Explosion:	Product does not present an explosion hazard
Explosion Limits	
Lower:	Not Determined
Upper:	Not Determined
Vapor Pressure (mm Hg):	< 1 @ 25 °C
Density:	0.98 g/cc @ 20 °C
Relative Density:	Not Determined
Vapor Density:	Not Determined
Evaporation Rate:	Not Determined
Solubility in / Miscibility Water:	Fully miscible
Partition Coefficient	
(n-Octanol/Water):	Not Determined
Viscosity, Dynamic:	Not Determined
Viscosity, Kinematic:	Not Determined
Volatile Organic Compounds:	0.00 g/l
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# **10. STABILITY AND REACTIVITY**

Chemical Stability:This material is stable under normal conditions of use and storage.Conditions to Avoid:Reacts with epoxy and strong oxidizing agents.Hazardous Polymerization:Will not occur.Hazardous Decomposition Materials:Carbon monoxide, carbon dioxide, oxides of nitrogen, and other organic substances.

# **11. TOXICOLOGICAL INFORMATION**

Acute Toxicity:

CAS No. 68410-23-1 Oral:	Fatty Acids, C18-Unsaturated, Dimers, Reaction Products w/ Polyethylenepolyamines LD50 >5000 mg/kg (rat) LC50 1470 mg/kg (rat)
CAS No. 112-57-2 Dermal:	3,6,9-Triazaundecamethylenediamine LD50 660 mg/kg (rat)
Primary Irritant Effect Skin: Eye: Sensitization: Additional:	Strong caustic effect on skin and mucous membranes Strong caustic effect Sensitization possible through skin contact The product shows the following dangers according to internally approved calculation methods for preparations: Corrosive Irritant Swallowing will lead to a strong caustic effect on mouth and throat and danger of perforation of esophagus and stomach.
The product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or	

Carcinogenic Effects:

The product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens.

# **12. ECOLOGICAL INFORMATION**

Aquatic Toxicity: Persistence & Degradability: Bioaccumulative Potential: Mobility in Soil: Ecotoxicity: General Notes:	No further relevant information available. No further relevant information available. No further relevant information available. No further relevant information available. Toxic for fish. Water hazard class 2 (self-assessment): extremely hazardous for water. Do not allow product to reach ground water, water course or sewage system, even in small quantities. Must not reach bodies of water or drainage ditch undiluted or unneutralized. Dangerous to drinking water even if extremely small quantities leak into the ground.
Results of PBT & vPvB Assessment: PBT: VPvB: Other Adverse Effects:	Also poisonous for fish and plankton in water bodies. Not applicable. No further information available.

## **13. DISPOSAL CONSIDERATIONS**

Disposal:

Keep out of surface waters, sewers, and waterways entering or leading to surface waters. Notify authorities if any exposure to the environment occurs or is likely to occur. Utilize an appropriate disposal facility, in compliance with federal, state and local environmental control regulations.

# **14. TRANSPORTATION INFORMATION**

DOT UN Status:

The material is not a regulated hazardous material for transportation.

# 15. REGULATORY INFORMATION

U.S. Federal Regulations	
CERCLA:	No CERCLA reportable quantity has been established for this material.
TSCA:	All ingredients of this material are listed on the TSCA inventory.
SARA Title III	
Sections 302, 304, 313:	This product does not contain any substances reportable under these sections.

## Sections 311, 312:

Hazard Classes	Yes/No
Fire Hazard	No
Reactivity Hazard	No
Pressure Hazard	No
Immediate Hazard	Yes
Delayed Hazard	No
International Inventory	Status

Canada (DSL)	Yes
Europe (EINECS/ELINCS)	Yes
Australia (AICS)	Yes
Japan (MITI)	Yes
South Korea (KECL)	Yes

# 16. OTHER INFORMATION

NFPA Ratings (scale 0 – 4)	Health, 2 Flammability, 1 Reactivity, 0 Personal Protection, H	2H0
HMIS Ratings (scale 0 – 4)	Health, 2 Flammability, 1 Reactivity, 0 Personal Protection, H	Hermitian     2       F     1       R     0       Mathematical Statements     H

#### Key Legend Information

ACGIH ARD CAS CERCLA DSL EC HMIS IARC ND NE NFPA NIOSH NTP OSHA PEL RE SARA SARA Title III SARA Section 302 SARA Section 312 SARA Section 313 SE STEL STOT TLV	American Conference of Governmental Industrial Hygienists International Agency for Research on Cancer Chemical Abstract Service Comprehensive Environmental Response, Compensation & Liability Act Domestic Substance List European Commission Hazardous Materials Identification System International Agency for Research on Cancer Not Determined Not Established National Fire Protection Association National Institute for Occupational Safety & Health National Institute for Occupational Safety & Health National Institute for Occupational Safety & Health National Safety and Health Administration Permissible Exposure Limit Repeat Exposure Superfund Amendments & Reauthorization Act Emergency Planning & Community Right to Know Act Extremely Hazardous Substances Emergency Release MSDS/List of Chemicals & Hazardous Inventory Emergency & Hazardous Inventory Toxic Chemicals & Release Reporting Single Exposure Short Term Exposure Limit Specific Target Organ Toxicity Threshold Limit Value
TWA	Time Weighted Average
SARA Section 302 SARA Section 304 SARA Section 311 SARA Section 312 SARA Section 313 SE STEL STOT TLV	Extremely Hazardous Substances Emergency Release MSDS/List of Chemicals & Hazardous Inventory Emergency & Hazardous Inventory Toxic Chemicals & Release Reporting Single Exposure Short Term Exposure Limit Specific Target Organ Toxicity Threshold Limit Value

**Disclaimer:** The information contained herein is based on data taken from sources believed to be both current and reliable at the time of publication. Aremco Products, Inc. makes no warranty, expressed or implied, as to the accuracy of this MSDS and assumes no liability arising from its use by others. Compliance with all applicable Federal, State and Local laws and regulations remains the responsibility of the user.

# SAFETY DATA SHEET

 Product:
 556-B

 Revision Date:
 6/01/2015

# **1. MATERIAL IDENTIFICATION**

Product Name:	Aremco-Bond 556-B Base Resin
Product Description:	Epoxy Resin Mixture, Paste, Aromatic Odor
Product Use:	High Performance Electrically Conductive Adhesive Resin
Manufacturer:	Aremco Products, Inc. 707-B Executive Blvd. Valley Cottage, NY 10989
Telephone:	845-268-0039
Emergency Phone:	845-268-0039 or Infotrac (24/7) 800-535-5053

# 2. HAZARDS IDENTIFICATION

#### GHS Classification:

Skin Irritation	Category 2
Skin Sensitization	Category 1
Aquatic, Long-Term	Category 3

## GHS Label Elements:



# GHS Signal Word:

## Warning

# GHS Hazard Determining Components:

Epoxy Phenol Novolac Resin 1,3-Bis(2,3-Epoxypropxy)-2,2-Dimethylpropane Silver

#### GHS Hazard Statements for Health Hazards:

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H412	Harmful to aquatic life with long lasting effects.

## GHS Precautionary Statements - Prevention:

P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves.
P273	Avoid release to the environment.

## GHS Precautionary Statements – Response:

P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P332+P313	If skin irritation occurs, get medical attention.
P362	Take off contaminated clothing and wash before reuse.

#### GHS Storage/Disposal:

P501 Dispose in accordance with local, regional, national or international regulations.

## 3. COMPOSITION

Chemical Name	CAS No.	EC No.	Concentration	GHS Product Identifier
Epoxy Phenol Novolac Resin	28064-14-4	500-006-8	10.0-25.0%	H303 Acute Toxicity, Oral, Cat 5 H313 Acute Toxicity, Dermal, Cat 5 H315 Skin Corrosion/Irritation, Cat 2 H317 Sensitization, Skin, Cat 1 H411 Aquatic Chronic, Cat 2
1,3-Bis(2,3-Epoxypropxy)-2,2- Dimethylpropane	17557-23-2	241-536-7	2.5-10.0%	H315 Skin Corrosion/Irritation, Cat 2 H317 Sensitization, Skin, Cat 1
Silver	7440-22-4	231-131-3	50.0-80.0%	None

#### Note:

This product is a liquid mixture and all powders are encapsulated.

# 4. FIRST AID MEASURES

#### Eye Exposure:

Hold evelids open and flush with a steady, gentle stream of water for at least 15 minutes. Seek immediate medical attention, preferably with an ophthalmologist. If a physician is not immediately available, eye irrigation should be continued for an additional 15 minutes.

#### Skin Exposure:

Immediately wipe excess material off skin with a dry cloth then wash with plenty of soap and water for at least 5 minutes. See medical attention if irritation develops or persists. Remove contaminated clothing and shoes and clean thoroughly before re-use.

#### Inhalation:

Remove from immediate source of exposure and assure that victim is breathing. If not breathing, administer cardio-pulmonary resuscitation (CPR). If breathing is difficult, administer oxygen if available. Seek medical attention. Symptoms can be delayed several hours.

#### Ingestion:

If swallowed, do not induce vomiting. If victim is conscious and alert, give 1-2 glasses of milk or water to drink. Do not give anything by mouth to an unconscious person. Seek medical attention immediately. Do not leave victim unattended. To prevent aspiration of swallowed product, lay victim on side with head lower than waist. Vomiting may occur spontaneously. If vomiting occurs and the victim is conscious, give additional milk or water to further dilute the chemical.

#### Medical Conditions Possibly Aggravated by Exposure:

Inhalation of product may aggravate existing chromic respiratory problems such as asthma, emphysema or bronchitis. Skin contact may aggravate existing skin disease.

5. FIRE FIGHTING MEASURES		
Extinguishing Media:	Use carbon dioxide, dry chemical, or appropriate foam.	
Special Fire Fighting Procedures:	Firefighters should wear NIOSH/MSHA approved positive pressure breathing apparatus with full face-piece and	
	full chemical resistant protective clothing. Dike area to prevent runoff and contamination of water sources.	

Dispose of fire control water later. Extreme heat or water contamination may cause closed containers to

## 6. ACCIDENTAL RELEASE MEASURES

explode.

Personal Protection:	Wear chemical goggles, body-covering protective clothing, chemical resistant gloves, and rubber boots. Use NIOSH approved respirator where mist occurs.
Spill Cleanup:	Mop up liquid and dispose in accordance with federal, state and local regulations or permits. Flush area with solvent then water to complete cleanup.

# 7. HANDLING AND STORAGE

Handling:	Avoid contact with eyes, skin and clothing. Avoid breathing vapors. Keep container closed. Promptly clean
	residue from closures with cloth and solvent. Promptly clean up spills.
Storage:	Store at room temperature in a dry, well ventilated area, away from combustible material, and away from ignition sources. Keep containers closed. Store in clean plastic or steel containers.

# 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

## Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Chemical Name	CAS No.	EC No.	TLV (mg/m <sup>3</sup> )	PEL (mg/m <sup>3</sup> )
Engineering Controls:		n for good working condition should be within direct ac		ners closed. Safety shower and
Respiratory Protection:	This product is not considered respirable in either the liquid or cured forms. However, if the cured product is polished, ground or chipped during processing, handling or use, powders may be released as airborne respirable particles. In these instances, appropriate personal protection equipment and local ventilation controls must be employed. If exposure limits are exceeded and local ventilation is unavailable, a supplied-air respirator or a self-contained NIOSH-approved vapor respirator is required.			
Skin Protection: Eye Protection:		ng protective clothing and oggles or face shield.	gloves.	

# 9. PHYSICAL AND CHEMICAL PROPERTIES

Form:	Paste
Color:	Silver
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Odor:	Aromatic
Odor Threshold:	Not Determined
pH:	Not Determined
Melting Point Range:	Not Determined
Boiling Point Range:	Not Determined
Flash Point (Closed Cup):	394 °F (201 °C)
Flammability (solid, gaseous):	Not Applicable
Decomposition Temperature:	Not Determined
Auto Igniting:	Product is not self-igniting
Danger of Explosion:	Product does not present an explosion hazard
Explosion Limits	
Lower:	Not Determined
Upper:	Not Determined
Vapor Pressure (mm Hg):	< 1 @ 25 °C
Density:	3.4 g/cc @ 20 °C
Relative Density:	Not Determined
Vapor Density:	Not Determined
Evaporation Rate:	Not Determined
Solubility in / Miscibility Water:	Not miscible or difficult to mix
Partition Coefficient	
(n-Octanol/Water):	Not Determined
Viscosity, Dynamic:	Not Determined
Viscosity, Kinematic:	Not Determined
Volatile Organic Compounds:	0.00 g/l
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# **10. STABILITY AND REACTIVITY**

Chemical Stability:	This material is stable under normal conditions of use and storage.
Conditions to Avoid:	Reacts with amines and strong oxidizing agents.
Hazardous Polymerization:	Will not occur.
Hazardous Decomposition Products	Carbon monoxide, carbon dioxide and other organic substances.

# **11. TOXICOLOGICAL INFORMATION**

Acute	Toxicity:

CAS No. 28064-14-4, Epoxy Phenol Novolac Resin		
Oral	LD50	>2000 mg/kg (rat)
Dermal	LD50	>2000 mg/kg (rabbit)
Primary Irritant Skin: Eye: Sensitization: Additional:	Effect:	Irritant to skin and mucous membranes No irritating effect Sensitization possible through skin contact This product shows the following dangers according to internally approved calculation methods for preparations: Irritant

IARC	None of the ingredients is listed
NTP	None of the ingredients is listed
OSHA	None of the ingredients is listed

# 12. ECOLOGICAL INFORMATION

Aquatic Toxicity:	No further relevant information available.
Persistence & Degradability:	No further relevant information available.
Bioaccumulative Potential:	No further relevant information available.
Mobility in Soil:	No further relevant information available.
Ecotoxicity:	Harmful to fish.
General Notes:	Water hazard class 2 (self-assessment): Hazardous for water.
	Do not allow product to reach ground water, water course or sewage system.
	Danger to drinking water if even small quantities leak into the ground.
	Harmful to aquatic organisms.
Results of PBT & vPvB Assessment	
PBT:	Not applicable.
VPvB:	Not applicable
Other Adverse Effects:	No further information available.

## **13. DISPOSAL CONSIDERATIONS**

Disposal:

Keep out of surface waters, sewers, and waterways entering or leading to surface waters. Notify authorities if any exposure to the environment occurs or is likely to occur. Utilize an appropriate disposal facility, in compliance with federal, state and local environmental control regulations.

# **14. TRANSPORTATION INFORMATION**

DOT UN Status:

The material is not a regulated hazardous material for transportation.

# **15. REGULATORY INFORMATION**

U.S. Federal Regulations	
CERCLA:	No CERCLA reportable quantity has been established for this material.
TSCA:	All ingredients of this material are listed on the TSCA inventory.
SARA Title III	
Sections 302, 304, 313:	This product does not contain any substances reportable under these sections.
Sections 311, 312:	

Hazard Classes	Yes/No
Fire Hazard	No
Reactivity Hazard	No
Pressure Hazard	No
Immediate Hazard	Yes
Delayed Hazard	No
International Inventory	Status
International Inventory Canada (DSL)	<u>Status</u> Yes
Canada (DSL)	Yes
Canada (DSL) Europe (EINECS/ELINCS)	Yes Yes

# **16. OTHER INFORMATION**

NFPA Ratings (scale 0 – 4)	Health, 2 Flammability, 1 Reactivity, 0 Personal Protection, H	2H0
HMIS Ratings (scale 0 – 4)	Health, 2 Flammability, 1 Reactivity, 0 Personal Protection, H	Image: Second

## Key Legend Information

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