SAFETY DATA SHEET

Product: 556-HTSP-A Revision Date: 6/01/2015

1. MATERIAL IDENTIFICATION

Product Name: Aremco-Bond 556-HTSP-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
Sensitization, Respiratory Category 1
Toxic to Reproduction Category 2
Aquatic, Chronic Category 2

GHS Label Elements:



GHS Signal Word:

Danger

GHS Hazard Determining Component:

4-Nonylphenol, Branched Hydroxy Modified Resin 2-Ethyl-4-Methylimidazole

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.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H361 Suspected of damaging fertility or the unborn child.

H411 Toxic to aquatic life with long lasting effects.

GHS Precautionary Statements - Prevention:

P202 Do not handle until all safety precautions have been read and understood.

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, eye and face protection.

P285 In case of inadequate ventilation wear respiratory 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 plenty of soap and water.

P333+P313 If skin irritation or rash occurs, get medical attention.

P363 Wash contaminated clothing before reuse.

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.

P304+P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

P342+P311 If experiencing respiratory symptoms: Call a poison center or doctor.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P391 Collect spillage.

GHS Storage/Disposal:

P405 Store locked up

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

3. COMPOSITION

Chemical Name	CAS No.	EC No.	Concentration	GHS Product Identifier
4-Nonylphenol, Branched	84852-15-3	284-325-5	2.5-10.0%	H302 Acute Toxicity, Oral, Cat 4 H314 Skin Corrosion//Irritation, Cat 1B H361 Toxic to Reproduction, Cat 2 H400 Aquatic Acute, Cat 1 H410 Aquatic Chronic, Cat 1
2-Ethyl-4-Methylimidazole	931-36-2	213-234-5	2.5-10.0%	H302 Acute Toxicity, Oral, Cat 4 H317 Sensitization, Skin, Cat 1 H318 Eye Damage/Irritation, Cat 1
Hydroxy Modified Resin	68457-74-9	270-604-9	2.5-10.0%	H302 Acute Toxicity, Oral, Cat 4 H313 Acute Toxicity, Dermal, Cat 5 H315 Skin Corrosion/Irritation, Cat 2 H320 Eye Irritation, Cat 2B H334 Respiratory Sensitization, Cat 1
Silver	7440-22-4	231-131-3	50.0-80.0%	None

4. FIRST AID MEASURES

Eve Exposure:

Hold eyelids 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.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Use carbon dioxide, dry chemical, foam, or water spray.

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

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 absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust)

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:

Chemical Name	CAS No.	EC No.	TLV (mg/m³)	PEL (mg/m³)

Engineering Controls: Normal ventilation for good working conditions should be used. Keep containers closed. Safety shower and

eyewash fountain should be within direct access.

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: Wear body-covering protective clothing and gloves.

Eye Protection: Wear chemical goggles or face shield.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form: Paste
Color: Silver
Odor: Amine Odor
Odor Threshold: Not Determined
pH: Not Determined

Melting Point Range:
Boiling Point Range:
Plash Point (Closed Cup):
Flammability (solid, gaseous):
Decomposition Temperature:
Ignition Temperature:
Auto Igniting:
Not Determined

Danger of Explosion: Product does not present an explosion hazard

Explosion Limits

Lower:
Upper:
Not Determined
Vapor Pressure:
Not Determined
Not Determined
Not Determined
Not Determined
Not Determined
Vapor Density:
Not Determined
Vapor Density:
Not Determined
Vapor Determined
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: 0.0%

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:

Primary Irritant Effect: Skin: Caustic effect on skin and mucous membranes

Eye: Strong caustic effect

Sensitization: Sensitization possible through skin contact

Additional Toxicological: The product shows the following dangers according to internally approved calculation methods for preparations.

Harmful Corrosive

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of

esophagus and stomach.

Carcinogenic Categories: 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:

Bioaccumulative Potential:

Mobility in Soil:

No further relevant information available.

No further relevant information available.

No further relevant information available.

General Notes: Water hazard class 3 (self-assessment): extremely hazardous for water.

Do not allow product to reach ground water, water course or sewage system. Must not reach bodies of water or drainage ditch undiluted or unneutralized. Danger to drinking water if even small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Toxic for 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, 355: This product does not contain any substances reportable under these sections.

Sections 311, 312:

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

16. OTHER INFORMATION

NFPA Ratings (scale 0 – 4)	Health, 3 Flammability, 1 Reactivity, 0 Personal Protection, H	3 1 0 H
HMIS Ratings (scale 0 – 4)	Health, 3 Flammability, 1 Reactivity, 0 Personal Protection, H	H 3 E 1 E 0 Add The Translation H

Key Legend Information

ACGIH American Conference of Governmental Industrial Hygienists

ARD International Agency for Research on Cancer

CAS Chemical Abstract Service

CERCLA Comprehensive Environmental Response, Compensation & Liability Act

DSL Domestic Substance List EC European Commission

HMIS Hazardous Materials Identification System

IARC International Agency for Research on Cancer

ND Not Determined
NE Not Established

NFPA National Fire Protection Association

NIOSH National Institute for Occupational Safety & Health

NTP National Toxicology Program

OSHA Occupational Safety and Health Administration

PEL Permissible Exposure Limit

RE Repeat Exposure

SARA Superfund Amendments & Reauthorization Act
SARA Title III Emergency Planning & Community Right to Know Act

SARA Section 302 Extremely Hazardous Substances

SARA Section 304 Emergency Release

SARA Section 311 MSDS/List of Chemicals & Hazardous Inventory

SARA Section 312 Emergency & Hazardous Inventory
SARA Section 313 Toxic Chemicals & Release Reporting

SE Single Exposure

STEL Short Term Exposure Limit
STOT Specific Target Organ Toxicity
TLV Threshold Limit Value
TWA Time Weighted Average

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SAFETY DATA SHEET

Product: 556-HTSP-B Revision Date: 6/01/2015

1. MATERIAL IDENTIFICATION

Product Name: Aremco-Bond 556-HTSP-B Base Resin

Product Description: Epoxy Resin Mixture, Silver 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:

Aquatic Chronic Category 2
Skin Irritation Category 2
Skin Sensitization Category 1
Oral, Acute Toxicity Category 5

GHS Label Elements:



GHS Signal Word:

Warning

GHS Hazard Determining Component:

Epoxy Phenol Novolac Resin

Silver

GHS Hazard Statements for Health Hazards:

H303 May be harmful if swallowed. H313 May be harmful in contact with skin.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H411 Toxic to aquatic life with long lasting effects.

GHS Precautionary Statements - Prevention:

P264 Wash hands thoroughly after handling.

P280 Wear protective gloves.

P261 Avoid breathing dust/fume/gas/mist/vapors/spray.

P272 Contaminated work clothing should not be allowed out of the workplace.

P273 Avoid release to the environment.

GHS Precautionary Statements - Response:

P312 IF SWALLOWED: Call a poison center or doctor if you feel unwell.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P333+P313 If skin irritation or rash occurs, get medical attention.
P362 Take off contaminated clothing and wash before reuse.

P391 Collect spillage.

GHS Storage/Disposal:

501 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	25068-38-6	500-033-5	25.0-50.0%	H315 Skin Corrosion/Irritation, Cat 2 H317 Sensitization, Skin, Cat 1 H319 Eye Damage/Irritation, Cat 2A
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 eyelids 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 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: 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:

Chemical Name	CAS No.	EC No.	TLV (mg/m³)	PEL (mg/m³)

Engineering Controls: Normal ventilation for good working conditions should be used. Keep containers closed. Safety shower and

eyewash fountain should be within direct access.

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: Wear body-covering protective clothing and gloves.

Eye Protection: Wear chemical goggles or face shield.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form: Paste Color: Silver Odor: Aromatic Not Determined Odor Threshold: Not Determined Melting Point Range: Not Determined **Boiling Point Range:** Not Determined Flash Point (Closed Cup): > 392 °F (> 200 °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:
Upper:
Not Determined
Not Determined
Vapor Pressure (mm Hg):
< 1 @ 25 °C

Density:
2.8 g/cc @ 20 °C

Relative Density:
Not Determined
Vapor Density:
Not Determined

Solubility in / Miscibility Water:

Partition Coefficient

Evaporation Rate:

Not miscible or difficult to mix

Not Determined

(n-Octanol/Water): Not Determined Viscosity, Dynamic: Not Determined Viscosity, Kinematic: Not Determined

Viscosity, Kinematic: Not Determined Volatile Organic Compounds: 0.00 g/l

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 Effect:

Skin: Irritant to skin and mucous membranes

Eye: Irritating effect

Sensitization: Sensitization possible through skin contact

Carcinogenic Categories: 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: Toxic for 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. Dangerous to drinking water even if small quantities leak into the ground.

Poisonous to fish and plankton.

Toxic 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
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	H 2 E E E E E E E E E E E E E E E E E E

Key Legend Information

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CERCLA Comprehensive Environmental Response, Compensation & Liability Act

DSL Domestic Substance List EC European Commission

HMIS Hazardous Materials Identification System

IARC International Agency for Research on Cancer

ND Not Determined NE Not Established

NFPA National Fire Protection Association

NIOSH National Institute for Occupational Safety & Health

NTP National Toxicology Program

OSHA Occupational Safety and Health Administration

PEL Permissible Exposure Limit

RE Repeat Exposure

SARA Superfund Amendments & Reauthorization Act
SARA Title III Emergency Planning & Community Right to Know Act

SARA Section 302 Extremely Hazardous Substances

SARA Section 304 Emergency Release

SARA Section 311 MSDS/List of Chemicals & Hazardous Inventory

SARA Section 312 Emergency & Hazardous Inventory
SARA Section 313 Toxic Chemicals & Release Reporting

SE Single Exposure

STEL Short Term Exposure Limit
STOT Specific Target Organ Toxicity
TLV Threshold Limit Value
TWA Time Weighted Average

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.