

# SAFETY DATA SHEET

Product: 597-A  
Revision Date: 6/01/2015

## 1. MATERIAL IDENTIFICATION

**Product Name:** Pyro-Duct 597-A  
**Product Description:** Silver, Odorless Paste  
**Product Use:** High Temperature, Silver-Filled, Electrically Conductive Adhesive  
**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:**  
Eye Irritation Category 2A  
Skin Irritation Category 2

**GHS Symbol:**



**GHS Signal Word:**  
Warning

**GHS Hazard Determining Components:**  
Silicate Solution  
Silver

**GHS Hazard Statements for Health Hazards:**  
H303 Harmful if swallowed.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.

**GHS Precautionary Statements - Prevention:**  
P264 Wash hands thoroughly after handling.  
P280 Wear protective gloves. Wear eye protection.

**GHS Precautionary Statements - Response:**  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P332 + P313 If skin irritation occurs: Get medical advice/attention.  
P305 + P351 + P338 IF IN EYES: Remove contact lenses, if present and easy to do. Rinse cautiously with water for several minutes.  
P312 IF SWALLOWED: Call a poison center or doctor if you feel unwell  
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	CAS No.	EC No.	Concentration	GHS Product Identifier
Silicate Solution	1344-09-8	215-687-4	10.0-20.0 %	H302 Acute Toxicity, Oral, Cat 4 H315 Skin Corrosion/Irritation, Cat 2 H319 Eye Damage/Eye Irritation, Cat 2A H335 STOT, SE; Respiratory Tract Irritation, Cat 3
Silver Flake	7440-22-4	231-131-3	55.0-75.0 %	None
Water	7732-18-5	NA	20.0-30.0 %	N/A

**Note**

This product is a mixture and all powders are encapsulated.

### 4. FIRST AID MEASURES

<b>After eye contact:</b>	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.
<b>After skin contact:</b>	Immediately wipe excess material off skin with a dry cloth then wash with soap and water for at least 5 minutes.
<b>After inhalation:</b>	In case of inhalation due to spray mist, machining dust or dried particulate, remove source of exposure and assure that victim is breathing. If not breathing, administer cardio-pulmonary resuscitation (CPR).
<b>After ingestion:</b>	If swallowed, do not induce vomiting. If victim is conscious and alert, give 1-2 glasses of water to drink. Do not give anything by mouth to an unconscious person. Seek medical attention immediately.
<b>Medical Conditions Possibly Aggravated by Exposure:</b>	Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis. Skin contact may aggravate existing skin disease.

### 5. FIRE FIGHTING MEASURES

<b>Flash Point:</b>	Not applicable
<b>Flammable Limits:</b>	This material is non-combustible.
<b>Extinguishing Media:</b>	This material is compatible with all extinguishing media.
<b>Special Fire Fighting Procedures:</b>	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.
<b>Unusual Fire and Explosion Hazards:</b>	This material is non-combustible.

### 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Protection:</b>	Wear chemical goggles, body-covering protective clothing, chemical resistant gloves, and rubber boots. Use NIOSH approved respirator where mist occurs.
<b>Spill Cleanup:</b>	Mop up and neutralize liquid, then discharge to sewer in accordance with federal, state and local regulations or permits. Flush area with water to complete cleanup. Exercise caution during neutralization as heat may be generated.

### 7. HANDLING AND STORAGE

<b>Handling:</b>	Avoid contact with eyes, skin and clothing. Avoid breathing spray mist. Keep container closed. Promptly clean residue from closures with cloth dampened with water. Promptly clean up spills.
<b>Storage:</b>	Store in an area that is cool, dry, well ventilated, away from combustible material, and away from ignition sources. Keep containers closed. Store in clean plastic or stainless steel containers.

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical	CAS No.	EC No.	TLV (mg/m <sup>3</sup> )	PEL (mg/m <sup>3</sup> )
Silicate Solution	1344-09-8	215-687-4	No available information	No available information
Silver Flake	7440-22-4	231-131-3	0.1	0.01
Water	7732-18-5	NA	No available information	No available information

<b>Engineering Controls:</b>	Use with adequate ventilation. Keep containers closed. Safety shower and eyewash fountain should be within direct access.
<b>Respiratory Protection:</b>	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 dust and mist respirator is required.
<b>Skin Protection:</b>	Wear body-covering protective clothing and gloves.
<b>Eye Protection:</b>	Wear chemical goggles.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and chemical here represent typical properties of this product. Contact Technical Sales for exact specifications.

<b>Appearance:</b>	Paste
<b>Color:</b>	Silver
<b>Odor Threshold:</b>	No available information
<b>Odor:</b>	Odorless
<b>pH:</b>	11.0-11.5
<b>Specific Gravity, g/cc</b>	2.20-2.30
<b>Water Solubility:</b>	Soluble
<b>Melting Point:</b>	Not applicable
<b>Boiling Point:</b>	100 °C
<b>Vapor Pressure:</b>	Not applicable
<b>Vapor Density (air=1):</b>	No data
<b>VOC Content:</b>	0.00 lbs/gal
<b>Viscosity:</b>	Paste
<b>Decomposition Temperature:</b>	Not applicable
<b>Auto-ignition Temperature</b>	Not applicable
<b>Partition Coefficient:</b>	No data
<b>Flash Point:</b>	Not applicable
<b>Flammability:</b>	Not applicable
<b>Evaporation Rate:</b>	Not applicable

## 10. STABILITY AND REACTIVITY

<b>Chemical Stability:</b>	This material is stable under all conditions of use and storage.
<b>Conditions to Avoid:</b>	Prolonged contact with aluminum, brass, copper, lead, and zinc may produce flammable hydrogen gas.
<b>Materials to Avoid:</b>	Gels and heats when mixed with acid. May react with ammonium salts resulting in evolution of ammonia gas.
<b>Hazardous Decomposition Products:</b>	None.
<b>Hazardous Polymerization:</b>	Will not occur.

## 11. TOXICOLOGICAL INFORMATION

<b>Acute Toxicity:</b>	Component: CAS No. 1344-09-8, Silicate Solution LD50 Oral, 1153 mg/kg (Rat) LD50, Inhalation, No Data LD50, Dermal, 4640 mg/kg (Rabbit)
<b>Skin Corrosion/Irritation:</b>	Irritating to skin
<b>Serious Eye Damage/Irritation:</b>	Irritating to eyes
<b>Sensitization:</b>	Not sensitizing
<b>Mutagenicity:</b>	No data
<b>Carcinogenicity:</b>	This product is not listed by IARC, NTP, OSHA, or ACGIH as a known or suspected carcinogen.
<b>Reproductive Toxicity:</b>	No data

## 12. ECOLOGICAL INFORMATION

<b>Ecotoxicity:</b>	This material is believed to be practically non-toxic to aquatic life.
<b>Biodegradation:</b>	This material is inorganic and not subject to biodegradation.
<b>Persistence:</b>	this material is believed to persist in the environment.
<b>Bioconcentration:</b>	This material is not expected to bioconcentrate in organisms.
<b>Physical/Chemical:</b>	Sinks and mixes with water. Only water will evaporate from this material.

### 13. DISPOSAL CONSIDERATIONS

**Disposal Method:** Dispose in accordance with federal, state and local regulations and permits.

### 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:**

<b>Hazard Classes</b>	<b>Yes/No</b>
Fire Hazard	No
Reactivity Hazard	No
Pressure Hazard	No
Immediate Hazard	Yes
Delayed Hazard	No

<b>International Inventory</b>	<b>Status</b>
Canada (DSL)	Yes
Europe (EINECS/ELINCS)	Yes
Australia (AICS)	Yes
Japan (MITI)	Yes
South Korea (KECL)	Yes

### 16. OTHER INFORMATION

<b>NFPA Ratings (scale 0 – 4)</b>	Health, 1 Flammability, 0 Reactivity, 0 Personal Protection, C	
<b>HMIS Ratings (scale 0 – 4)</b>	Health, 1 Flammability, 0 Reactivity, 0 Personal Protection, C	

**Key Legend Information**

<b>ACGIH</b>	American Conference of Governmental Industrial Hygienists
<b>ARD</b>	International Agency for Research on Cancer
<b>CAS</b>	Chemical Abstract Service
<b>CERCLA</b>	Comprehensive Environmental Response, Compensation & Liability Act
<b>DSL</b>	Domestic Substance List
<b>EC</b>	European Commission
<b>HMIS</b>	Hazardous Materials Identification System
<b>IARC</b>	International Agency for Research on Cancer
<b>ND</b>	Not Determined
<b>NE</b>	Not Established
<b>NFPA</b>	National Fire Protection Association
<b>NIOSH</b>	National Institute for Occupational Safety & Health
<b>NTP</b>	National Toxicology Program
<b>OSHA</b>	Occupational Safety and Health Administration
<b>PEL</b>	Permissible Exposure Limit
<b>RE</b>	Repeat Exposure
<b>SARA</b>	Superfund Amendments & Reauthorization Act
<b>SARA Title III</b>	Emergency Planning & Community Right to Know Act
<b>SARA Section 302</b>	Extremely Hazardous Substances
<b>SARA Section 304</b>	Emergency Release
<b>SARA Section 311</b>	MSDS/List of Chemicals & Hazardous Inventory
<b>SARA Section 312</b>	Emergency & Hazardous Inventory
<b>SARA Section 313</b>	Toxic Chemicals & Release Reporting
<b>SE</b>	Single Exposure
<b>STEL</b>	Short Term Exposure Limit
<b>STOT</b>	Specific Target Organ Toxicity
<b>TLV</b>	Threshold Limit Value
<b>TWA</b>	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. Arengo 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:** 598-A  
**Revision Date:** 6/01/2015

## 1. MATERIAL IDENTIFICATION

**Product Name:** Pyro-Duct 598-A

**Product Description:** Gray, Odorless Paste  
**Product Use:** High Temperature Conductive Adhesive

**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:**

Eye Irritation Category 2A  
Skin Irritation Category 2

**GHS Symbol:**



**GHS Signal Word:**

Warning

**GHS Hazard Determining Components:**

Silicate Solution  
Nickel

**GHS Hazard Statements for Health Hazards:**

H303 Harmful if swallowed.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.

**GHS Precautionary Statements - Prevention:**

P264 Wash hands thoroughly after handling.  
P280 Wear protective gloves. Wear eye protection.

**GHS Precautionary Statements - Response:**

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P332 + P313 If skin irritation occurs: Get medical advice/attention.  
P305 + P351 + P338 IF IN EYES: Remove contact lenses, if present and easy to do. Rinse cautiously with water for several minutes.  
P312 IF SWALLOWED: Call a poison center or doctor if you feel unwell  
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	CAS No.	EC No.	Concentration	GHS Product Identifier
Nickel	7440-02-0	231-111-4	50.0-70.0%	H228 Flammable Solids, Cat 2 H317 Sensitization, Skin, Cat 1 H351 Suspected of Causing Cancer, Cat 2 H372 STOT, RE, Causes Damage to Organs, Cat 1
Silicate Solution	1312-76-1	215-687-4	10.0-20.0%	H302 Acute Toxicity, Oral, Cat 4 H315 Skin Corrosion/Irritation, Cat 2 H319 Eye Damage/Eye Irritation, Cat 2A H335 STOT, SE; Respiratory Tract Irritation, Cat 3
Water	7732-18-5	NA	20.0-30.0%	N/A

**Note**

This product is a mixture and all powders are encapsulated.

### 4. FIRST AID MEASURES

<b>After eye contact:</b>	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.
<b>After skin contact:</b>	Immediately wipe excess material off skin with a dry cloth then wash with soap and water for at least 5 minutes.
<b>After inhalation:</b>	In case of inhalation due to spray mist, machining dust or dried particulate, remove source of exposure and assure that victim is breathing. If not breathing, administer cardio-pulmonary resuscitation (CPR).
<b>After ingestion:</b>	If swallowed, do not induce vomiting. If victim is conscious and alert, give 1-2 glasses of water to drink. Do not give anything by mouth to an unconscious person. Seek medical attention immediately.
<b>Medical Conditions Possibly Aggravated by Exposure:</b>	Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis. Skin contact may aggravate existing skin disease.

### 5. FIRE FIGHTING MEASURES

<b>Flash Point:</b>	Not applicable
<b>Flammable Limits:</b>	This material is non-combustible.
<b>Extinguishing Media:</b>	This material is compatible with all extinguishing media.
<b>Special Fire Fighting Procedures:</b>	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.
<b>Unusual Fire and Explosion Hazards:</b>	This material is non-combustible.

### 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Protection:</b>	Wear chemical goggles, body-covering protective clothing, chemical resistant gloves, and rubber boots. Use NIOSH approved respirator where mist occurs.
<b>Spill Cleanup:</b>	Mop up and neutralize liquid, then discharge to sewer in accordance with federal, state and local regulations or permits. Flush area with water to complete cleanup. Exercise caution during neutralization as heat may be generated.

### 7. HANDLING AND STORAGE

<b>Handling:</b>	Avoid contact with eyes, skin and clothing. Avoid breathing spray mist. Keep container closed. Promptly clean residue from closures with cloth dampened with water. Promptly clean up spills.
<b>Storage:</b>	Store in an area that is cool, dry, well ventilated, away from combustible material, and away from ignition sources. Keep containers closed. Store in clean plastic or stainless steel containers.

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical	CAS No.	EC No.	TLV (mg/m <sup>3</sup> )	PEL (mg/m <sup>3</sup> )
Nickel Flake	7440-02-0	231-111-4	1.5	Not established
Silicate Solution	1344-09-8	215-687-4	No available information	No available information
Water	7732-18-5	N/A	No available information	No available information

<b>Engineering Controls:</b>	Use with adequate ventilation. Keep containers closed. Safety shower and eyewash fountain should be within direct access.
<b>Respiratory Protection:</b>	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 dust and mist respirator is required.
<b>Skin Protection:</b>	Wear body-covering protective clothing and gloves.
<b>Eye Protection:</b>	Wear chemical goggles.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and chemical here represent typical properties of this product. Contact Technical Sales for exact specifications.

<b>Appearance:</b>	Paste
<b>Color:</b>	Gray
<b>Odor Threshold:</b>	No available information
<b>Odor:</b>	Odorless
<b>pH:</b>	11.0-11.5
<b>Specific Gravity, g/cc</b>	2.60-2.80
<b>Water Solubility:</b>	Soluble
<b>Melting Point:</b>	Not applicable
<b>Boiling Point:</b>	100 °C
<b>Vapor Pressure:</b>	Not applicable
<b>Vapor Density (air=1):</b>	No data
<b>VOC Content:</b>	0.00 lbs/gal
<b>Viscosity:</b>	> 100,000 cP
<b>Decomposition Temperature:</b>	Not applicable
<b>Auto-ignition Temperature</b>	Not applicable
<b>Partition Coefficient:</b>	No data
<b>Flash Point:</b>	Not applicable
<b>Flammability:</b>	Not applicable
<b>Evaporation Rate:</b>	Not applicable

## 10. STABILITY AND REACTIVITY

<b>Chemical Stability:</b>	This material is stable under all conditions of use and storage.
<b>Conditions to Avoid:</b>	Prolonged contact with aluminum, brass, copper, lead, and zinc may produce flammable hydrogen gas.
<b>Materials to Avoid:</b>	Gels and heats when mixed with acid. May react with ammonium salts resulting in evolution of ammonia gas.
<b>Hazardous Decomposition Products:</b>	None.
<b>Hazardous Polymerization:</b>	Will not occur.

## 11. TOXICOLOGICAL INFORMATION

<b>Acute Toxicity:</b>	Component: CAS No. 1344-09-8, Silicate Solution LD50 Oral, 1153 mg/kg (Rat) LD50, Inhalation, No Data LD50, Dermal, 4640 mg/kg (Rabbit)
<b>Skin Corrosion/Irritation:</b>	Irritating to skin
<b>Serious Eye Damage/Irritation:</b>	Irritating to eyes
<b>Sensitization:</b>	Not sensitizing
<b>Mutagenicity:</b>	No data
<b>Carcinogenicity:</b>	This product is not listed by IARC, NTP, OSHA, or ACGIH as a known or suspected carcinogen.
<b>Reproductive Toxicity:</b>	No data

## 12. ECOLOGICAL INFORMATION

<b>Ecotoxicity:</b>	This material is believed to be practically non-toxic to aquatic life.
<b>Biodegradation:</b>	This material is inorganic and not subject to biodegradation.
<b>Persistence:</b>	this material is believed to persist in the environment.
<b>Bioconcentration:</b>	This material is not expected to bioconcentrate in organisms.



**Physical/Chemical:**

Sinks and mixes with water. Only water will evaporate from this material.

**13. DISPOSAL CONSIDERATIONS**

**Disposal Method:**

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

**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:**

<b>Hazard Classes</b>	<b>Yes/No</b>
Fire Hazard	No
Reactivity Hazard	No
Pressure Hazard	No
Immediate Hazard	Yes
Delayed Hazard	No

<b>International Inventory</b>	<b>Status</b>
Canada (DSL)	Yes
Europe (EINECS/ELINCS)	Yes
Australia (AICS)	Yes
Japan (MITI)	Yes
South Korea (KECL)	Yes

**16. OTHER INFORMATION**

<b>NFPA Ratings (scale 0 – 4)</b>	Health, 1 Flammability, 0 Reactivity, 0 Personal Protection, C									
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**Key Legend Information**

<b>ACGIH</b>	American Conference of Governmental Industrial Hygienists
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<b>NFPA</b>	National Fire Protection Association
<b>NIOSH</b>	National Institute for Occupational Safety & Health
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