

# SAFETY DATA SHEET

Product: 551-RN  
Revision Date: 6/01/2015

## 1. MATERIAL IDENTIFICATION

**Product Name:** Graphi-Bond 551-RN  
**Product Description:** Black, Viscous Paste  
**Product Use:** High Temperature Graphite 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:

Flammable Liquid and Vapor	Category 3
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 1
Carcinogenicity	Category 1
STOT, SE	Category 2

### GHS Symbols:



### GHS Signal Word:

Danger

### GHS Hazard Determining Components:

Phenolic Resin  
Graphite

### GHS Hazard Statements for Health Hazards:

H226	Flammable Liquid and Vapor
H315	Causes Skin Irritation
H318	Causes Serious Eye Damage
H350	May Cause Cancer
H371	May Cause Damage to Organs (Blood, Kidneys, Lungs, Reproductive, Liver Mucous Membranes, Spleen, Gastrointestinal Tract, Upper Respiratory Tract, Skin, Eyes, Central Nervous System, Pancreas)

### GHS Precautionary Statements - Prevention:

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233	Keep container tightly closed.
P261	Avoid breathing vapors.
P262	Do not get in eyes, on skin, or on clothing.
P264	Wash thoroughly after handling.
P271	Use in well-ventilated area.
P280	Wear protective gloves/eye protection/face protection.

### GHS Precautionary Statements - Response:

P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
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/physician.
P308 + P313	IF exposed or concerned, get medical advise/attention.

### GHS Precautionary Statements – Storage & Disposal:

P403	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

### 3. COMPOSITION

Ingredient	CAS No.	EC No.	Concentration	GHS Product Identifier
Graphite	7782-42-5	231-955-3	40.0-60.0%	H319 Serious Eye Damage/Irritation, Cat 2A H335 STOT, SE; Respiratory Tract Irritation, Cat 3
Silica, Crystalline	14808-60-7	238-878-4	< 2.0%	H319 Serious Eye Damage/Eye Irritation, Cat 2 H335 STOT, SE; Respiratory Tract Irritation, Cat 3 H373 STOT, RE; Respiratory Tract Irritation, Cat 3
Phenolic Resin Containing:			40.0-60.0%	H226 Flammable Liquid, Cat 3 H315 Skin Corrosion/Irritation, Cat 2 H318 Serious Eye Damage/Eye Irritation, Cat 1 H371 STOT SE, May Cause Damage to Organs (Blood, Kidneys, Lungs, Reproductive, Liver Mucous Membranes, Spleen, Gastrointestinal Tract, Upper Respiratory Tract, Skin, Eyes, Central Nervous System, Pancreas, Cat 2 H350 May Cause Cancer, Cat 1
Methanol (< 21.0%)	67-56-1	200-659-6		
Phenol (< 12.0%)	108-95-2	203-632-7		
Ethanol (< 7.0%)	64-17-5	200-578-6		
Formaldehyde (< 2.0%)	50-00-0	200-001-8		

### 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, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. 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 and remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if irritation develops and persists.
<b>After inhalation:</b>	Move exposed person to fresh air and assure that victim is breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occur.
<b>After ingestion:</b>	Wash out mouth with water. If swallowed, do not induce vomiting unless directed to do so by medical personnel. Do not give anything by mouth to an unconscious person. Seek medical attention immediately.
<b>Medical Conditions Possibly Aggravated by Exposure:</b>	Pre-existing disorders involving any target organs mentioned in this Safety Data Sheet as being at risk may be aggravated by over-exposure to this product. Repeated or prolonged exposure to formaldehyde may cause skin sensitization, dermatitis or other allergic reactions. The degree of sensitivity varies with individuals.

### 5. FIRE FIGHTING MEASURES

<b>Flammability:</b>	Flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of subsequent explosion. Runoff to sewer may create fire or explosion hazard.
<b>Flash Point:</b>	80 °F (26.67 °C)
<b>Extinguishing Media:</b>	Foam, carbon dioxide, dry chemical, water spray.
<b>Unsuitable Extinguishing Agents:</b>	Do not use water jet.
<b>Special Fire Fighting Procedures:</b>	Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
<b>Special Exposure Hazards:</b>	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
<b>Special Remarks on Fire Hazards:</b>	Vapor may travel considerable distance to source of ignition and flash back.

### 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 when ventilation is inadequate. No action should be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. Avoid breathing vapor or mist. Use explosion proof ventilation equipment.
<b>Spill Cleanup:</b>	Stop leak if without risk. Move containers from spill area. Absorb with liquid-binding material (sand, diatomite, universal binders, and sawdust). Dispose of contaminated material according to local, state and federal regulations. Ensure adequate ventilation. Use spark-proof tools and explosion-proof equipment. Do not flush with water or aqueous cleansing agents. Dispose of via a licensed waste disposal contractor.
<b>Environmental Protection:</b>	Inform respective authorities in case product reaches water or sewage system. Do not allow to enter drainage system, surface or ground water.

## 7. HANDLING AND STORAGE

<b>Handling:</b>	Put on appropriate personal protective equipment. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Avoid exposure. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.
<b>Storage:</b>	Do not store above 10 °C (50 °F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Ingredient	CAS No.	EC No.	TLV (mg/m <sup>3</sup> )	PEL (mg/m <sup>3</sup> )
Graphite	7782-42-5	231-955-3	2	2
Silicon Dioxide, Crystalline	14808-60-7	238-878-4	0.1	0.1
Methanol	67-56-1	200-659-6	270	270
Ethanol	64-17-5	200-578-6	960	960
Formaldehyde	50-00-0	200-001-8	0.30 ppm	0.75 ppm
Phenol	108-95-2	203-632-7	19	19

<b>Recommended Monitoring:</b>	OSHA regulates formaldehyde exposures at or exceeding 0.5 ppm as a potential cancer hazard and requires monitoring for exposures at or exceeding 0.5 ppm over an 8-hour time-weighted average. Workplace or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
<b>Engineering Controls:</b>	Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
<b>Hygiene Measures:</b>	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory, and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
<b>Respiratory Protection:</b>	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 such as a chemically resistant apron and rubber or neoprene gloves.
<b>Eye Protection:</b>	Wear chemical safety 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>	Viscous Paste
<b>Color:</b>	Black
<b>Odor:</b>	Alcohol-Phenolic
<b>pH:</b>	7.0-9.0
<b>Specific Gravity, g/cc</b>	1.56
<b>Water Solubility:</b>	Insoluble
<b>Boiling Point:</b>	150 °F (65.556 °C)
<b>Volatility:</b>	19% (w/w)

## 10. STABILITY AND REACTIVITY

<b>Chemical Stability:</b>	This material is stable if handled and stored according to specifications.
<b>Conditions to Avoid:</b>	Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
<b>Incompatible Materials:</b>	Avoid contact or contamination with strong oxidizer, acids, or modified phenolics (e.g. resorcinols, cresols) and isocyanates.
<b>Hazardous Decomposition:</b>	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## 11. TOXICOLOGICAL INFORMATION

**Acute Toxicity:** This product is not expected to be toxic.

Ingredient	Result	Species	Dose	Expose
Methanol	LC50 Inhalation Gas	Rat	145000 ppm	1 hour
	LC50 Inhalation Gas	Rat	64000 ppm	4 hours
	LD50 Dermal	Rabbit	15800 mg/kg	-
	LD50 Oral	Rat	5600 mg/kg	-
Phenol	LC50 Inhalation Vapor	Rat	316mg/m3	4 hours
	LD50 Dermal	Rabbit	630 mg/kg	-
	LD50 Dermal	Rat	669 mg/kg	-
	LD50 Oral	Rat	317 mg/kg	-
Ethanol	LC50 Inhalation Vapor	Rat	124700 mg/m3	4 hours
	LD50 Oral	Rat	7 g/kg	-
Formaldehyde	LC50 Inhalation Gas	Rat	250 ppm	4 hours
	LD50 Dermal	Rabbit	270 mg/kg	-
	LD50 Oral	Rat	100 mg/kg	-

**Chronic Toxicity:** Not available.

**Irritation/Corrosion:**

**Respiratory:**

Exposure to formaldehyde may cause temporary irritation to nose and throat and may lead to respiratory disorders. Pre-existing respiratory disorders may also be aggravated by exposure. Studies have reported that persons with asthma responded no differently than healthy individuals at concentrations as high as 3 ppm.

**Eyes:**

This product is expected to be an eye irritant.

**Skin:**

The effect of skin exposure is not known. This product may be a skin irritant.

**Sensitizer:**

Repeated or prolonged exposure to formaldehyde may cause skin sensitization, dermatitis or other allergic reactions. The degree of sensitivity varies with individuals.

**Carcinogenicity:**

The IARC and NTP classify formaldehyde as a carcinogen due to cancers of the upper respiratory system and leukemia. OSHA regulates formaldehyde as a potential carcinogen for exposures at or exceeding 0.5 ppm.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity:** No known significant effects or critical hazards.

**Aquatic Toxicity:**

Ingredient	Result	Species	Expose
Methanol	Acute LC50 2500000 ug/L Marine Water	Crustaceans, Crangon Adult	48 hours
	Acute LC50 3289 mg/L Fresh Water	Daphnia Magna Neonate	48 hours
	Acute LC50 >100000 ug/L Fresh Water	Fish Pimephales Promelas	96 hours
	Acute LC50 800 ug/L Marine Water	Crustaceans Archaeomysis	48 hours
	Acute LC50 3000 ug/L Fresh Water	Daphnia Ceriodaphnia Dubia	48 hours
	Acute LC50 1.75 ug/L Fresh Water	Fish Cyprinus Carpio Larva	96 hours
Phenol	Chronic NOEC 2200 ug/L Fresh Water	Daphnia Magna	48 hours

Ingredient	Result	Species	Expose
Ethanol	Acute EC50 2000 ug/L Fresh Water	Daphnia Magna Crustaceans	48 hours
	Acute LC50 25500 ug/L Marine Water	Crustaceans Artemia	48 hours
	Acute LC50 42000 ug/L Fresh Water	Fish Oncorhynchus Mykiss	4 days
	Chronic NOEC <6.3 g/l Fresh Water	Daphnia Magna	48 hours
Formaldehyde	Acute EC50 5800 ug/L Fresh Water	Daphnia Pulex Neonate	48 hours
	Acute LC50 330000-1000000 ug/L Marine Water	Crustaceans Crangon Larvae	48 hours
	Acute LC50 1.41 ppm Fresh Water	Fish Oncorhynchus Mykiss	96 hours

**Persistence/Degradability:** No Data

### 13. DISPOSAL CONSIDERATIONS

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

### 14. TRANSPORTATION INFORMATION

**DOT/IATA**

**Proper Shipping Name:** Resin Solution  
**Hazard Class:** 3  
**ID Number:** UN1866  
**Packing Group:** III  
**Labels:** Flammable

### 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 contains the following chemicals listed as toxic chemicals requiring notification:



<b>Component</b>	<b>CAS#</b>	<b>% by Weight</b>
Phenol	108-95-2	< 6.0
Formaldehyde	50-00-0	< 1.0

**Sections 311, 312:**

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

<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, 2 Flammability, 2 Reactivity, 0 Personal Protection, G	
<b>HMIS Ratings (scale 0 – 4)</b>	Health, 2 Flammability, 2 Reactivity, 0 Personal Protection, G	

### 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
RTECS	Registry of Toxic Effects of Chemical Substances
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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