SAFETY DATA SHEET

Product: 571-L
Revision Date: 6/01/2015

1. MATERIAL IDENTIFICATION

Product Name: Ceramabond 571-L Liquid Binder
Product Description: Slightly Cloudy, Odorless Liquid
Product Use: High Temperature Adhesive/Coating Liquid Binder
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 Hazard Determining Component:
Silicate Solution

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

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>EC No.</th>
<th>Concentration</th>
<th>GHS Product Identifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silicate Solution</td>
<td>1344-09-8</td>
<td>215-687-4</td>
<td>40.0-60.0%</td>
<td>H302 Acute Toxicity, Oral, Cat 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>H315 Skin Corrosion/Irritation, Cat 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>H319 Eye Damage/Eye Irritation, Cat 2A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>H335 STOT, SE; Respiratory Tract Irritation, Cat 3</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>NA</td>
<td>40.0-60.0%</td>
<td>N/A</td>
</tr>
</tbody>
</table>
4. FIRST AID MEASURES

After eye contact: 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.

After skin contact: Immediately wipe excess material off skin with a dry cloth then wash with soap and water for at least 5 minutes.

After inhalation: In case of inhalation due to spray mist, remove source of exposure and assure that victim is breathing. If not breathing, administer cardio-pulmonary resuscitation (CPR).

After ingestion: 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.

Medical Conditions Possibly Aggravated by Exposure: 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

Extinguishing Media: This material is compatible with all extinguishing media.

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.

Unusual Fire and Explosion Hazards: This material is non-combustible.

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 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

Handling: 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.

Storage: 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

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>EC No.</th>
<th>TLV (mg/m³)</th>
<th>PEL (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silicate Solution</td>
<td>1344-09-8</td>
<td>215-687-4</td>
<td>No available information</td>
<td>No available information</td>
</tr>
</tbody>
</table>

Engineering Controls: Use with adequate ventilation. 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 dust and mist respirator is required.

Skin Protection: Wear body-covering protective clothing and gloves.

Eye Protection: Wear chemical goggles.

9. PHYSICAL AND CHEMICAL PROPERTIES

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Slightly Cloudy</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No available information</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>pH</td>
<td>11.0-11.5</td>
</tr>
<tr>
<td>Specific Gravity, g/cc</td>
<td>1.30-1.50</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Soluble</td>
</tr>
</tbody>
</table>
Melting Point: Not applicable
Boiling Point: 100 °C
Vapor Pressure: Not applicable
Vapor Density (air=1): No data
VOC Content: 0.00 lbs/gal
Viscosity: < 500 cP
Decomposition Temperature: Not applicable
Auto-ignition Temperature: Not applicable
Partition Coefficient: No data
Flash Point: Not applicable
Flammability: Not applicable
Evaporation Rate: Not applicable

10. STABILITY AND REACTIVITY

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

11. TOXICOLOGICAL INFORMATION

Acute Toxicity: Component: Silicate Solution
LD50 Oral, 1153 mg/kg (Rat)
LD50, Inhalation, No Data
LD50, Dermal, 4640 mg/kg (Rabbit)

Skin Corrosion/Irritation: Irritating to skin
Serious Eye Damage/Irritation: Irritating to eyes
Sensitization: Not sensitizing
Mutagenicity: No data
Carcinogenicity: This product is not listed by IARC, NTP, OSHA, or ACGIH as a known or suspected carcinogen.
Reproductive Toxicity: No data

12. ECOLOGICAL INFORMATION

Ecotoxicity: This material is believed to be practically non-toxic to aquatic life.
Biodegradation: This material is inorganic and not subject to biodegradation.
Persistence: This material is believed to persist in the environment.
Bioconcentration: 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:

<table>
<thead>
<tr>
<th>Hazard Classes</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Reactivity Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Pressure Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Immediate Hazard</td>
<td>Yes</td>
</tr>
<tr>
<td>Delayed Hazard</td>
<td>No</td>
</tr>
</tbody>
</table>

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, 1
- Flammability, 0
- Reactivity, 0
- Personal Protection, C

HMIS Ratings (scale 0 – 4)

- Health, 1
- Flammability, 0
- Reactivity, 0
- Personal Protection, C

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

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: 571-P  
Revision Date: 6/01/2015

1. MATERIAL IDENTIFICATION

Product Name: Ceramabond 571-P
Product Description: Off-White, Odorless Powder  
Product Use: High Temperature Adhesive Powder
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: None
GHS Symbol: No Pictogram Required
GHS Signal Word: None
GHS Hazard Determining Component: None
GHS Hazard Statements: None

GHS Precautionary Statements - Prevention:
P261 Avoid breathing dust
P280 Wear protective gloves/eye protection/face protection.
P285 In case of inadequate ventilation wear respiratory protection
P302 + P352 IF ON SKIN: Wash with plenty of soap and water
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

3. COMPOSITION

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<thead>
<tr>
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<th>CAS No.</th>
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</thead>
<tbody>
<tr>
<td>Magnesium Oxide</td>
<td>1309-48-4</td>
<td>215-171-9</td>
<td>70.0-90.0%</td>
<td>None</td>
</tr>
<tr>
<td>Aluminum Oxide</td>
<td>1344-28-1</td>
<td>215-691-6</td>
<td>10.0-30.0%</td>
<td>None</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

After eye contact: Hold eyelids open and flush with a steady, gentle stream of water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

After skin contact: Wash skin with soap and water.

After inhalation: In case of inhalation of dust, move to fresh air.

After ingestion: 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.

Medical Conditions Possibly Aggravated by Exposure: 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

Flash Point: Not applicable
Flammable Limits: This material is non-combustible.
Extinguishing Media: This material is compatible with all extinguishing media.
Special Fire Fighting Procedures: Protective actions and/or special protective equipment depending on surrounding fire. Use protective clothing and self-contained breathing apparatus.
Unusual Fire & Explosion Hazards: This material is in principle not combustible, not explosive and not flammable. However, magnesium oxide may ignite in the presence of interhalogens such as chlorine trifluoride or bromine pentafluoride. Magnesium oxide may also ignite and explode when heated with sublimed sulfur, magnesium powder or aluminum powder.

6. ACCIDENTAL RELEASE MEASURES

Personal Protection: Wear personal protective equipment to prevent inhalation of dust and skin exposure.
Spill Cleanup: Mop or sweep up spills. Place into appropriate container for disposal. Discharge in accordance with federal, state and local regulations or permits. Avoid contact with halogens and strong acids.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Avoid breathing dust. Keep container closed. Promptly clean residue from closures with cloth dampened with water. Promptly clean up spills.
Storage: Store in a dry area in clean plastic or stainless steel containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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<td>15</td>
</tr>
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Engineering Controls: Use with adequate ventilation. Avoid dust formation. Keep containers closed. Safety shower and eyewash fountain should be within direct access.
Respiratory Protection: If exposure limits are exceeded and local ventilation is unavailable, a supplied-air respirator or a self-contained NIOSH-approved dust respirator is required.
Skin Protection: Wear body-covering protective clothing and gloves.
Eye Protection: Wear safety glasses with side shields.

9. PHYSICAL AND CHEMICAL PROPERTIES

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

Appearance: Powder
Color: Off-White
Odor: Odorless
pH: 8-10.5
Specific Gravity, g/cc: 3.00-3.90
Water Solubility: Insoluble
Melting Point Range: Not determined
Boiling Point Range: Not determined
Decomposition temperature: No available information
Auto-ignition temperature: Does not ignite
Flash point: None
Flammability: Non-Flammable

10. STABILITY AND REACTIVITY

Chemical Stability: This material is stable under all conditions of use and storage.
Conditions to Avoid: None.
Materials to Avoid: Magnesium oxide may ignite in the presence of interhalogens such as chlorine trifluoride or bromine pentafluoride. Magnesium oxide may also ignite and explode when heated with sublimed sulfur, magnesium powder or aluminum powder. Exposure to strong acids may also cause vigorous reaction and heat generation.
Hazardous Decomposition Products: Fumes may be generated if magnesium oxide is heated to the point of volatilization (> 1700 C).
Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity Data:
- Oral: None
- Eye: None
- Dermal: Not absorbed by intact skin. Intimate contact of naked skin to magnesium oxide dust may cause irritation, drying and chapping.
- Inhalation: Short-term inhalation of magnesium oxide dust or fume may cause temporary irritation of upper respiratory track, skin, nose and eyes. No known allergic responses.

Chronic Toxicity Data:
- Oral: Magnesium oxide: After repeated exposure, man, 800 mg/m3, no observed effect. After repeated exposure, cattle, target organ: gastro-intestinal system, 1% irritating effect.
- Inhalation: Magnesium oxide: After repeated exposure, rat, 3 mg/m3, no observed effect.
- Eye: May cause eye irritation.
- Mutagenic Effects: No known studies. Not considered to be mutagenic in general.
- Carcinogenic Effects: Substance is not classified as carcinogenic under ACGIH, NIOSH, IARC, NTP or OSHA.

12. ECOLOGICAL INFORMATION

Ecotoxicity: Not water endangering. Aquatic toxicity is unlikely due to low solubility.
Persistence & Degradability: Magnesium oxide reacts with water to produce magnesium hydroxide. The reaction is self-limiting because of the formation of insoluble magnesium hydroxide. No other data concerning degradation are available.
Bioaccumulative Potential: Not expected.
Mobility in Soil: Not expected.
PBT and vPvB Assessment: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Method: Dispose in accordance with federal, state and local regulations and permits. Evaporate water from sol and dispose of the solids in a landfill.

14. TRANSPORTATION INFORMATION

DOT UN Status: This 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.
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</tr>
</tbody>
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International Inventory Status

<table>
<thead>
<tr>
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</tr>
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<tbody>
<tr>
<td>Canada (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe (EINECS/ELINCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Australia (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Japan (MITI)</td>
<td>Yes</td>
</tr>
<tr>
<td>South Korea (KECL)</td>
<td>Yes</td>
</tr>
</tbody>
</table>

16. OTHER INFORMATION

NFPA Ratings (Scale 0–4)
- Health, 1
- Flammability, 0
- Reactivity, 0
- Personal Protection, F

HMIS Ratings (Scale 0–4)
- Health, 1
- Flammability, 0
- Reactivity, 0
- Personal Protection, F

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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