SAFETY DATA SHEET

1. Identification

Product identifier          WM-7988
Other means of identification
  Brand Code                183D
Recommended use            For Industrial Use Only
Recommended restrictions   Avoid dry cutting, blasting, or dust generation. Users should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer
  Company name          HarbisonWalker International
  Address               1305 Cherrington Parkway, Suite 100
                        Moon Township, Pennsylvania 15108 US
  Telephone             General Phone: 412-375-6600
  Website               www.thinkHWI.com
  Emergency phone number Not available.

2. Hazard(s) identification

Classified hazards
  This item is defined as an article per OSHA, REACH, and WHMIS and is therefore exempt from labeling. A Safety Data Sheet is available.

This item is not Classified as hazardous. However, individual customer processes (such as grinding, sawing, or blasting) may result in the formation of dust that may present health hazards. Wear protective gloves/protective clothing/eye protection.

Label elements
  This item is defined as an article per OSHA, REACH, and WHMIS and is therefore exempt from labeling. A Safety Data Sheet is available.

This item is not Classified as hazardous. However, individual customer processes (such as grinding, sawing, or blasting) may result in the formation of dust that may present health hazards. Wear protective gloves/protective clothing/eye protection.

Hazard(s) not otherwise classified (HNOC)
  This item is defined as an article per OSHA, REACH, and WHMIS and is therefore exempt from labeling. A Safety Data Sheet is available.

This item is not Classified as hazardous. However, individual customer processes (such as grinding, sawing, or blasting) may result in the formation of dust that may present health hazards. Wear protective gloves/protective clothing/eye protection.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium Oxide</td>
<td></td>
<td>1309-48-4</td>
<td>20 - 40</td>
</tr>
<tr>
<td>Aluminum Granules, 97% Al -8+40 Mesh</td>
<td></td>
<td>7429-90-5</td>
<td>2.5 - 10</td>
</tr>
<tr>
<td>Amorphous Silica</td>
<td>Fumed Silica</td>
<td>7631-86-9</td>
<td>2.5 - 10</td>
</tr>
<tr>
<td></td>
<td>Silica, crystalline free</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbon Black</td>
<td></td>
<td>1333-86-4</td>
<td>2.5 - 10</td>
</tr>
<tr>
<td>Diiron Trioxide</td>
<td></td>
<td>1309-37-1</td>
<td>2.5 - 10</td>
</tr>
<tr>
<td>Graphite</td>
<td></td>
<td>7782-42-5</td>
<td>2.5 - 10</td>
</tr>
<tr>
<td>Titanium Dioxide</td>
<td></td>
<td>13463-67-7</td>
<td>2.5 - 10</td>
</tr>
<tr>
<td>Cristobalite</td>
<td></td>
<td>14464-46-1</td>
<td>1 - 2.5</td>
</tr>
<tr>
<td>Phenol</td>
<td></td>
<td>108-95-2</td>
<td>1 - 2.5</td>
</tr>
</tbody>
</table>

Material name: WM-7988

SDS US
183D    Version #: 02    Revision date: 04-27-2020    Issue date: 11-22-2019
Material name: WM-7988

<table>
<thead>
<tr>
<th>Material name: WM-7988</th>
<th>183D</th>
<th>Version #: 02</th>
<th>Revision date: 04-27-2020</th>
<th>Issue date: 11-22-2019</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethane-1,2-diol</td>
<td>107-21-1</td>
<td>&lt; 0.5</td>
<td></td>
</tr>
<tr>
<td>Other components below reportable levels</td>
<td>30 - 50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Composition comments**
The resin binder in this product was specifically engineered to have low toxicity, with minimal free-phenol (less than 100ppm in this refractory product) and no free-formaldehyde. Under certain conditions, thermal decomposition products may still include carbon monoxide, carbon dioxide, formaldehyde, phenol and aromatic and/or aliphatic compounds.

**4. First-aid measures**

**Inhalation**
Move to fresh air. Call a physician if symptoms develop or persist.

**Skin contact**
Wash off with soap and water. Get medical attention if irritation develops and persists.

**Eye contact**
Rinse with water. Get medical attention if irritation develops and persists.

**Ingestion**
Rinse mouth. Get medical attention if symptoms occur.

**Most important symptoms/effects, acute and delayed**
Direct contact with eyes may cause temporary irritation.

**Indication of immediate medical attention and special treatment needed**
Treat symptomatically.

**5. Fire-fighting measures**

**Suitable extinguishing media**
Use fire-extinguishing media appropriate for surrounding materials.

**Unsuitable extinguishing media**
Not available.

**Specific hazards arising from the chemical**
Not applicable.

**Special protective equipment and precautions for firefighters**
Not available.

**6. Accidental release measures**

**Personal precautions, protective equipment and emergency procedures**
Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.

**Methods and materials for containment and cleaning up**
Stop the flow of material, if this is without risk. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

**Environmental precautions**
Avoid discharge into drains, water courses or onto the ground.

**7. Handling and storage**

**Precautions for safe handling**
Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation at places where dust is formed. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities**
Store away from incompatible materials (see Section 10 of the SDS).

**8. Exposure controls/personal protection**

**Occupational exposure limits**

<table>
<thead>
<tr>
<th>US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components</td>
<td>Type</td>
<td></td>
</tr>
<tr>
<td>Aluminum Granules, 97% Al -8+40 Mesh (CAS 7429-90-5)</td>
<td>PEL</td>
<td>5 mg/m3</td>
</tr>
<tr>
<td>15 mg/m3</td>
<td>Total dust.</td>
<td></td>
</tr>
<tr>
<td>Carbon Black (CAS 1333-86-4)</td>
<td>PEL</td>
<td>3.5 mg/m3</td>
</tr>
<tr>
<td>Cristobalite (CAS 14464-46-1)</td>
<td>PEL</td>
<td>0.05 mg/m3</td>
</tr>
<tr>
<td>Diiron Trioxide (CAS 1309-37-1)</td>
<td>PEL</td>
<td>10 mg/m3</td>
</tr>
<tr>
<td>Graphite (CAS 7782-42-5)</td>
<td>PEL</td>
<td>5 mg/m3</td>
</tr>
<tr>
<td>15 mg/m3</td>
<td>Total dust.</td>
<td></td>
</tr>
</tbody>
</table>
### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium Oxide (CAS 1309-48-4)</td>
<td>PEL</td>
<td>15 mg/m³</td>
<td>Total particulate.</td>
</tr>
<tr>
<td>Phenol (CAS 108-95-2)</td>
<td>PEL</td>
<td>19 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Phenol (CAS 108-95-2)</td>
<td></td>
<td>5 ppm</td>
<td></td>
</tr>
<tr>
<td>Titanium Dioxide (CAS 13463-67-7)</td>
<td>PEL</td>
<td>15 mg/m³</td>
<td>Total dust.</td>
</tr>
</tbody>
</table>

### US. OSHA Table Z-3 (29 CFR 1910.1000)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum Granules, 97% Al -8+40 Mesh (CAS 7429-90-5)</td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>Amorphous Silica (CAS 7631-86-9)</td>
<td>TWA</td>
<td>0.8 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Cristobalite (CAS 14464-46-1)</td>
<td>TWA</td>
<td>0.05 mg/m³</td>
<td>Respirable.</td>
</tr>
<tr>
<td>Diiron Trioxide (CAS 1309-37-1)</td>
<td>TWA</td>
<td>1.2 mppcf</td>
<td>Respirable.</td>
</tr>
<tr>
<td>Graphite (CAS 7782-42-5)</td>
<td>TWA</td>
<td>15 mppcf</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>Magnesium Oxide (CAS 1309-48-4)</td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>Titanium Dioxide (CAS 13463-67-7)</td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
</tbody>
</table>

### US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum Granules, 97% Al -8+40 Mesh (CAS 7429-90-5)</td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>Carbon Black (CAS 1333-86-4)</td>
<td>TWA</td>
<td>3 mg/m³</td>
<td>Inhalable fraction.</td>
</tr>
<tr>
<td>Cristobalite (CAS 14464-46-1)</td>
<td>TWA</td>
<td>0.025 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>Diiron Trioxide (CAS 1309-37-1)</td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>Graphite (CAS 7782-42-5)</td>
<td>TWA</td>
<td>2 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>Magnesium Oxide (CAS 1309-48-4)</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td>Inhalable fraction.</td>
</tr>
</tbody>
</table>
### US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol (CAS 108-95-2)</td>
<td>TWA</td>
<td>5 ppm</td>
<td></td>
</tr>
<tr>
<td>Titanium Dioxide (CAS 13463-67-7)</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

### US. NIOSH: Pocket Guide to Chemical Hazards

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum Granules, 97% Al -8+40 Mesh (CAS 7429-90-5)</td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>Respirable.</td>
</tr>
<tr>
<td>Amorphous Silica (CAS 7631-86-9)</td>
<td>TWA</td>
<td>6 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Carbon Black (CAS 1333-86-4)</td>
<td>TWA</td>
<td>0.1 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Cristobalite (CAS 14464-46-1)</td>
<td>TWA</td>
<td>0.05 mg/m³</td>
<td>Respirable dust.</td>
</tr>
<tr>
<td>Diiron Trioxide (CAS 1309-37-1)</td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>Dust and fume.</td>
</tr>
<tr>
<td>Graphite (CAS 7782-42-5)</td>
<td>TWA</td>
<td>2.5 mg/m³</td>
<td>Respirable.</td>
</tr>
<tr>
<td>Phenol (CAS 108-95-2)</td>
<td>Ceiling</td>
<td>60 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Phenol (CAS 108-95-2)</td>
<td>TWA</td>
<td>19 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Phenol (CAS 108-95-2)</td>
<td>Ceiling</td>
<td>15.6 ppm</td>
<td></td>
</tr>
<tr>
<td>Phenol (CAS 108-95-2)</td>
<td>Ceiling</td>
<td>5 ppb</td>
<td></td>
</tr>
</tbody>
</table>

### Biological limit values

**ACGIH Biological Exposure Indices**

<table>
<thead>
<tr>
<th>Components</th>
<th>Value</th>
<th>Determinant</th>
<th>Specimen</th>
<th>Sampling Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol (CAS 108-95-2)</td>
<td>250 mg/g</td>
<td>Phenol with hydrolysis</td>
<td>Creatinine in urine</td>
<td>*</td>
</tr>
</tbody>
</table>

* - For sampling details, please see the source document.

### Exposure guidelines

Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

The resin binder in this product was specifically engineered to have low toxicity, with minimal free-phenol (less than 100ppm in this refractory product) and no free-formaldehyde. Under certain conditions, thermal decomposition products may still include carbon monoxide, carbon dioxide, formaldehyde, phenol and aromatic and/or aliphatic compounds.

### US - California OELs: Skin designation

Phenol (CAS 108-95-2) Can be absorbed through the skin.

### US - Minnesota Haz Subs: Skin designation applies

Phenol (CAS 108-95-2) Skin designation applies.

### US - Tennessee OELs: Skin designation

Phenol (CAS 108-95-2) Can be absorbed through the skin.

### US ACGIH Threshold Limit Values: Skin designation

Phenol (CAS 108-95-2) Can be absorbed through the skin.

### US NIOSH Pocket Guide to Chemical Hazards: Skin designation

Phenol (CAS 108-95-2) Can be absorbed through the skin.

### US OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Phenol (CAS 108-95-2) Can be absorbed through the skin.

### Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

### Individual protection measures, such as personal protective equipment

**Eye/face protection**

Wear safety glasses with side shields (or goggles).
Skin protection
Hand protection
Wear appropriate chemical resistant gloves.
Other
Wear suitable protective clothing.
Respiratory protection
Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.
Thermal hazards
Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations
Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance
Physical state
Solid.
Form
Brick or Cast Shape
Color
Not available.
Odor
Not available.
Odor threshold
Not available.
pH
Not available.
Melting point/freezing point
Not available.
Initial boiling point and boiling range
Not available.
Flash point
Not available.
Evaporation rate
Not available.
Flammability (solid, gas)
Not available.

Upper/lower flammability or explosive limits
Flammability limit - lower (%)
Not available.
Flammability limit - upper (%)
Not available.
Explosive limit - lower (%)
Not available.
Explosive limit - upper (%)
Not available.

Vapor pressure
Not available.
Vapor density
Not available.
Relative density
Not available.
Solubility(ies)
Solubility (water)
Not available.
Partition coefficient (n-octanol/water)
Not available.
Auto-ignition temperature
Not available.
Decomposition temperature
Not available.
Viscosity
Not available.

Other information
Explosive properties
Not explosive.
Oxidizing properties
Not oxidizing.

10. Stability and reactivity
Reactivity
The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability
Material is stable under normal conditions.
Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

Conditions to avoid

Contact with incompatible materials. Refractories containing crystalline silica may, after service, contain more or less crystalline silica. Care must be taken to avoid and/or control dust from demolition. If in doubt of the proper protection, seek advice from a safety professional.

The organic binder in this product falls into a class known as phenolic resin. Refractory products using this type of binder are supplied in two forms, (1) shaped products such as brick and (2) monolithics/specialties such as refractory plastics and rams. The hazards associated with phenolic resin are different in the two forms. For pre-cured shapes (brick), the binder has been reacted or polymerized by heat to its solid form prior to shipment. On decomposition by heating, where there is sufficient air and heating rate, the gaseous products are mostly carbon dioxide and water. Under low or limited oxygen supply, decomposition products during heat-up and early service may include phenol, as well as aromatic and/or aliphatic derivatives. After a campaign in service, this refractory product should be completely coked and in that condition the material for disposal would be carbon and an inorganic oxide. During field installation of non-cured unshaped products (monolithics), there is a possibility of exposure to trace amounts of phenol by skin contact and inhalation. After the product has been heated to high temperatures in service, it will have similar decomposition characteristics to pre-cured shapes.

Incompatible materials

Strong oxidizing agents.

Incompatibility is based strictly upon potential theoretical reactions between chemicals and may not be specific to industrial application exposure.

Hazardous decomposition products

No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

<table>
<thead>
<tr>
<th>Route</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>No adverse effects due to inhalation are expected.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>No adverse effects due to skin contact are expected.</td>
</tr>
<tr>
<td>Eye contact</td>
<td>Direct contact with eyes may cause temporary irritation.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Expected to be a low ingestion hazard.</td>
</tr>
</tbody>
</table>

Information on toxicological effects

<table>
<thead>
<tr>
<th>Effect Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
<td>Not available.</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Prolonged skin contact may cause temporary irritation.</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Direct contact with eyes may cause temporary irritation.</td>
</tr>
<tr>
<td>Respiratory or skin sensitization</td>
<td>Not a respiratory sensitizer.</td>
</tr>
<tr>
<td>Skin sensitization</td>
<td>This product is not expected to cause skin sensitization.</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However in making the overall evaluation, IARC noted that &quot;carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs.&quot; (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.) In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. &quot;There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk...&quot; (SCOEL SUM Doc 94-final, June 2003) According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled. Not classifiable as to carcinogenicity to humans.</td>
</tr>
</tbody>
</table>

IARC Monographs. Overall Evaluation of Carcinogenicity

Amorphous Silica (CAS 7631-86-9) 3 Not classifiable as to carcinogenicity to humans.
Carbon Black (CAS 1333-86-4) 2B Possibly carcinogenic to humans.
Cristobalite (CAS 14464-46-1) 1 Carcinogenic to humans.
Diiron Trioxide (CAS 1309-37-1) 3 Not classifiable as to carcinogenicity to humans.
Phenol (CAS 108-95-2) 3 Not classifiable as to carcinogenicity to humans.
Titanium Dioxide (CAS 13463-67-7) 2B Possibly carcinogenic to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)
Cristobalite (CAS 14464-46-1) Cancer

US. National Toxicology Program (NTP) Report on Carcinogens
Cristobalite (CAS 14464-46-1) Known To Be Human Carcinogen.
Reasonably Anticipated to be a Human Carcinogen.

Reproductive toxicity
This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure
Not classified.

Specific target organ toxicity - repeated exposure
Not classified.

Aspiration hazard
Not an aspiration hazard.

12. Ecological information

Ecotoxicity
The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and degradability
No data is available on the degradability of any ingredients in the mixture.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

Phenol 1.46

Mobility in soil
No data available.

Other adverse effects
No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions
This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste.

Hazardous waste code
Since this product is used in several industries, no Waste Code can be provided by the supplier. The Waste Code should be determined in arrangement with your waste disposal partner or the responsible authority.

Waste from residues / unused products
Not available.

Contaminated packaging
Not available.

14. Transport information

DOT
Not regulated as dangerous goods.

IATA
Not regulated as dangerous goods.

IMDG
Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable.

15. Regulatory information

US federal regulations
This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All chemical substances in this product are listed on the TSCA chemical substance inventory where required.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)
Phenol (CAS 108-95-2) Listed.
SARA 304 Emergency release notification
Phenol (CAS 108-95-2) 1000 LBS
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)
Cristobalite (CAS 14464-46-1)

Cancer
- lung effects
- immune system effects
- kidney effects

Superfund Amendments and Reauthorization Act of 1986 (SARA)

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>Reportable quantity (pounds)</th>
<th>Threshold planning quantity (pounds)</th>
<th>Threshold planning quantity, lower value (pounds)</th>
<th>Threshold planning quantity, upper value (pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>108-95-2</td>
<td>1000</td>
<td>500</td>
<td>10000</td>
<td></td>
</tr>
</tbody>
</table>

SARA 311/312 Hazardous chemical
No (Exempt)

SARA 313 (TRI reporting)

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>% by wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum Granules, 97% Al -8+40 Mesh</td>
<td>7429-90-5</td>
<td>2.5 - 10</td>
</tr>
<tr>
<td>Phenol</td>
<td>108-95-2</td>
<td>1 - 2.5</td>
</tr>
</tbody>
</table>

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Phenol (CAS 108-95-2)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.

Safe Drinking Water Act (SDWA)
Not regulated.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace
Phenol (CAS 108-95-2) Low priority

US state regulations

California Proposition 65

WARNING: This product can expose you to chemicals including Titanium Dioxide, which is known to the State of California to cause cancer, and Ethane-1,2-diol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>Listed:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Black</td>
<td>1333-86-4</td>
<td>February 21, 2003</td>
</tr>
<tr>
<td>Titanium Dioxide</td>
<td>13463-67-7</td>
<td>September 2, 2011</td>
</tr>
</tbody>
</table>

California Proposition 65 - CRT: Listed date/Developmental toxin
Ethane-1,2-diol (CAS 107-21-1) Listed: June 19, 2015

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Aluminum Granules, 97% Al -8+40 Mesh (CAS 7429-90-5)
Carbon Black (CAS 1333-86-4)
Cristobalite (CAS 14464-46-1)
Magnesium Oxide (CAS 1309-48-4)
Phenol (CAS 108-95-2)
Titanium Dioxide (CAS 13463-67-7)

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>No</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>No</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>No</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>No</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Country(s) or region</td>
<td>Inventory name</td>
<td>On inventory (yes/no)*</td>
</tr>
<tr>
<td>---------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>No</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>No</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>No</td>
</tr>
<tr>
<td>Taiwan</td>
<td>Taiwan Chemical Substance Inventory (TCSI)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>No</td>
</tr>
</tbody>
</table>

*A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s) A “No” indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).*

### 16. Other information, including date of preparation or last revision

- **Issue date**: 11-22-2019
- **Revision date**: 04-27-2020
- **Version #**: 02

**Disclaimer**: This information is based on our present knowledge on creation date. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**Revision information**
- Identification: Recommended restrictions
- Hazard(s) identification: Supplemental information
- Composition / Information on Ingredients: Ingredients
- Handling and storage: Precautions for safe handling
- Exposure controls/personal protection: Exposure guidelines
- Toxicological information: Carcinogenicity