SAFETY DATA SHEET

1. Identification

Product identifier  Hercules High Hear Furnace Cement

Other means of identification

Product code  7330E

Synonyms  Part Numbers: Regular- 35503, 35504, 35509, 35515, 35610, Heavy- 35521, 35526

Recommended use  Furnace Cement

Recommended restrictions  Workers (and your customers or users in the case of resale) 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

Company Name  HCC Holdings, Inc. an Oatey Affiliate

Address  4700 West 160th Street
           Cleveland, OH 44135

Telephone  216-267-7100

E-mail  info@oatey.com

Transport Emergency  Chemtrec 1-800-424-9300 (Outside the US 1-703-527-3887)

Emergency First Aid  1-877-740-5015

Contact person  MSDS Coordinator

2. Hazard(s) identification

Physical hazards  Not classified.

Health hazards

Skin corrosion/irritation  Category 1

Serious eye damage/eye irritation  Category 1

OSHA defined hazards  Not classified.

Label elements

Signal word  Danger

Hazard statement  Causes severe skin burns and eye damage.

Precautionary statement

Prevention  Do not breathe mist or vapor. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.

Response  If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Wash contaminated clothing before reuse.

Storage  Store locked up.

Disposal  Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)  Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.

3. Composition/information on ingredients

Mixtures
### 4. First-aid measures

#### Inhalation
Move to fresh air.

#### Skin contact
Take off immediately all contaminated clothing. Wash off with soap and water. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.

#### Eye contact
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.

#### Ingestion
Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

#### Most important symptoms/effects, acute and delayed
Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

#### Indication of immediate medical attention and special treatment needed
Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.

#### General information
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

### 5. Fire-fighting measures

#### Suitable extinguishing media
Powder. Foam. Carbon dioxide (CO2).

#### Unsuitable extinguishing media
Do not use water jet as an extinguisher, as this will spread the fire.

#### Specific hazards arising from the chemical
During fire, gases hazardous to health may be formed.

#### Special protective equipment and precautions for firefighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

#### Fire fighting equipment/instructions
Move containers from fire area if you can do so without risk.

#### Specific methods
Use standard firefighting procedures and consider the hazards of other involved materials.

#### General fire hazards
No unusual fire or explosion hazards noted.

### 6. Accidental release measures

#### Personal precautions, protective equipment and emergency procedures
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Large Spills: Stop the flow of material, if this is without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions

7. Handling and storage

Precautions for safe handling
Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities
Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

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>Kaolin (CAS 1332-58-7)</td>
<td>PEL</td>
<td>5 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td></td>
<td></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>Crystalline silica (Quartz)</td>
<td>TWA</td>
<td>0.3 mg/m³</td>
<td>Total dust.</td>
</tr>
<tr>
<td>(CAS 14808-60-7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mica (CAS 12001-26-2)</td>
<td>TWA</td>
<td>0.1 mg/m³</td>
<td>Respirable.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20 mppcf</td>
<td></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>Crystalline silica (Quartz)</td>
<td>TWA</td>
<td>0.025 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>(CAS 14808-60-7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kaolin (CAS 1332-58-7)</td>
<td>TWA</td>
<td>2 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>Mica (CAS 12001-26-2)</td>
<td>TWA</td>
<td>3 mg/m³</td>
<td>Respirable fraction.</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>Crystalline silica (Quartz)</td>
<td>TWA</td>
<td>0.05 mg/m³</td>
<td>Respirable dust.</td>
</tr>
<tr>
<td>(CAS 14808-60-7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kaolin (CAS 1332-58-7)</td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>Respirable.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 mg/m³</td>
<td>Total</td>
</tr>
<tr>
<td>Mica (CAS 12001-26-2)</td>
<td>TWA</td>
<td>3 mg/m³</td>
<td>Respirable.</td>
</tr>
</tbody>
</table>

Biological limit values

No biological exposure limits noted for the ingredient(s).

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. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection
Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection
Hand protection
Wear appropriate chemical resistant gloves.

Other
Wear appropriate chemical resistant clothing.

Respiratory protection
In case of insufficient ventilation, wear suitable respiratory equipment.

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: Liquid.
- Form: Paste.
- Color: Tan. or Black.
- Odor: Odorless.
- Odor threshold: Not available.
- pH: 11 - 13
- Melting point/freezing point: Not available.
- Initial boiling point and boiling range: 212 °F (100 °C)
- Flash point: > 212.0 °F (> 100.0 °C)
- Evaporation rate: Not available.
- Flammability (solid, gas): Not applicable.

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: 1.95 +/- 0.03
- 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
  - VOC (Weight %): 0 g/l

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.

Incompatible materials
Strong oxidizing agents.

Hazardous decomposition products
No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure
- Inhalation: May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
- Skin contact: Causes severe skin burns.
- Eye contact: Causes serious eye damage.
Ingestion
- Causes digestive tract burns.

Symptoms related to the physical, chemical and toxicological characteristics
- Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Information on toxicological effects

Acute toxicity
- Not available.

Skin corrosion/irritation
- Causes severe skin burns and eye damage.

Serious eye damage/eye irritation
- Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization
- Not a respiratory sensitizer.

Skin sensitization
- This product is not expected to cause skin sensitization.

Germ cell mutagenicity
- No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity
- 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 "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." (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.) Risk of cancer cannot be excluded with prolonged exposure.

IARC Monographs. Overall Evaluation of Carcinogenicity
- Crystalline silica (Quartz) (CAS 14808-60-7) 1 Carcinogenic to humans.
- Wollastonite (CAS 13983-17-0) 3 Not classifiable as to carcinogenicity to humans.

NTP Report on Carcinogens
- Crystalline silica (Quartz) (CAS 14808-60-7) Known To Be Human Carcinogen.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
- Not listed.

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.

Chronic effects
- Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

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 this product.

Bioaccumulative potential
- No data available.

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
- Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations
- Dispose in accordance with all applicable regulations.

Hazardous waste code
- The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products
- Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging
- Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.
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 established.

15. Regulatory information
US federal regulations
- This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
- One or more components are not listed on TSCA.
  TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
  - Not regulated.
  OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
  - Not listed.
  CERCLA Hazardous Substance List (40 CFR 302.4)
  - Not listed.
Superfund Amendments and Reauthorization Act of 1986 (SARA)
- Hazard categories
  - Immediate Hazard - Yes
  - Delayed Hazard - No
  - Fire Hazard - No
  - Pressure Hazard - No
  - Reactivity Hazard - No
  SARA 302 Extremely hazardous substance
  - Not listed.
  SARA 311/312 Hazardous chemical
  - No
  SARA 313 (TRI reporting)
  - Not regulated.
Other federal regulations
- Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
  - Not regulated.
- Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
  - Not regulated.
- Safe Drinking Water Act (SDWA)
  - Not regulated.
US state regulations
- US. Massachusetts RTK - Substance List
  - Crystalline silica (Quartz) (CAS 14808-60-7)
  - Kaolin (CAS 1332-58-7)
  - Mica (CAS 12001-26-2)
- US. New Jersey Worker and Community Right-to-Know Act
  - Crystalline silica (Quartz) (CAS 14808-60-7)
  - Kaolin (CAS 1332-58-7)
  - Mica (CAS 12001-26-2)
- US. Pennsylvania Worker and Community Right-to-Know Law
  - Crystalline silica (Quartz) (CAS 14808-60-7)
  - Kaolin (CAS 1332-58-7)
  - Mica (CAS 12001-26-2)
- US. Rhode Island RTK
  - Not regulated.
US. California Proposition 65
WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance
Crystalline silica (Quartz) (CAS 14808-60-7)

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>Yes</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>No</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>No</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A “Yes” indicates this product complies 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 22-April-2015
Revision date -
Version # 01

HMIS® ratings
Health: 3
Flammability: 0
Physical hazard: 0

NFPA ratings

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