SAFETY DATA SHEET

1. Identification

Product identifier: CMK-A

Other means of identification

Brand Code: 179C, 803B

Recommended use: For Industrial Use Only

Recommended restrictions: None known.

Manufacturer/Supplier 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: CHEMTREC 24 HOUR
1-800-424-9300

2. Hazard(s) identification

Physical hazards: Not classified.

Health hazards: Not classified.

Environmental hazards: Not classified.

OSHA defined hazards: Not classified.

Label elements

Hazard symbol: None.

Signal word: None.

Hazard statement: The mixture does not meet the criteria for classification.

Precautionary statement

Prevention: Observe good industrial hygiene practices.
Response: Wash hands after handling.
Storage: Store away from incompatible materials.
Disposal: Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC): None known.

Supplemental information

This item is not hazardous per GHS and OSHA 29 CFR 1910.1200(c). However, individual customer processes (such as grinding, sawing, or blasting) may result in the formation of dust that may present health hazards.

After installation and during service, exposure of this product to high temperature and/or certain chemical elements may cause a change to occur to this product and create chrome (VI) compounds. Therefore, during tear out, care should be taken in the removal and handling of this product. Exposure to chrome (VI) compounds may cause cancer. Excessive inhalation will increase the risk of serious respiratory damage. Limit contact with eyes, skin, and mucous membranes since chrome (VI) compounds are also corrosive and may cause skin and nasal septum ulcers. NIOSH approved respirators and protective clothing should be worn while handling this product during tear out.

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>60 - 80</td>
</tr>
<tr>
<td>Chromium (III) oxide</td>
<td></td>
<td>1308-38-9</td>
<td>20 - 40</td>
</tr>
</tbody>
</table>

Material name: CMK-A

### 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**
Coughing.

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

**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**
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**
Avoid prolonged exposure. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities**
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**

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)</td>
<td>PEL</td>
<td>5 mg/m3</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>Chromium (III) oxide (CAS 1308-38-9)</td>
<td>PEL</td>
<td>15 mg/m3</td>
<td>Total dust.</td>
</tr>
<tr>
<td>Magnesium Oxide (CAS 1309-48-4)</td>
<td>PEL</td>
<td>0.5 mg/m3</td>
<td>Total particulate.</td>
</tr>
<tr>
<td>Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)</td>
<td>TWA</td>
<td>1 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>Chromium (III) oxide (CAS 1308-38-9)</td>
<td>TWA</td>
<td>0.5 mg/m3</td>
<td></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. NIOSH: Pocket Guide to Chemical Hazards

<table>
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<tr>
<th>Components</th>
<th>Type</th>
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<tr>
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<td>TWA</td>
<td>0.5 mg/m3</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.

#### Individual protection measures, such as personal protective equipment
- **Eye/face protection**: Wear safety glasses with side shields (or goggles).
- **Hand protection**: Wear appropriate chemical resistant gloves.
- **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**: Solid
- **Color**: Black.
- **Odor**: Not available.
- **Odor threshold**: Not available.
- **pH**: Not available.
- **Melting point/freezing point**: 5072 °F (2800 °C)
- **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:
- Chemical family: Solid brick form
- Density: 2.70 - 3.20 g/cm³

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: Phosphorus. Chlorine.
- Incompatibility is based strictly upon potential theoretical reactions between chemicals and may not be specific to industrial application exposure. Contact your sales representative for clarification.

Hazardous decomposition products: No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure:
- Inhalation: Prolonged inhalation may be harmful.
- Skin contact: No adverse effects due to skin contact are expected.
- Eye contact: Direct contact with eyes may cause temporary irritation.
- Ingestion: Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics: Coughing.

Information on toxicological effects:
- Acute toxicity: Not available.
- Skin corrosion/irritation: Prolonged skin contact may cause temporary irritation.
- Serious eye damage/eye irritation: Direct contact with eyes may cause temporary irritation.

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:
- IARC Monographs. Overall Evaluation of Carcinogenicity:
  Chromium (III) oxide (CAS 1308-38-9): 3 Not classifiable as to carcinogenicity to humans.
  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.

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  
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  
Not applicable.

Waste from residues / unused products  
As sold, this product is not RCRA hazardous. Final used condition must be evaluated prior to disposal. Dispose of waste product in accordance with Federal, State and Local regulations. The chrome compounds (Cr III) in this product may be altered to a hexavalent compound (Cr VI) under certain use conditions, such as exposure to alkali salts and/or high temperatures. Proper waste testing (such as TCLP) must be done to determine the waste status of used product. Reuse and recycling of chrome Refractories is recommended whenever possible.

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 available.

15. Regulatory information

US federal regulations  
One or more components are not listed on TSCA. 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)  
Not listed.

SARA 304 Emergency release notification  
Not regulated.

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

Superfund Amendments and Reauthorization Act of 1986 (SARA)  

Hazard categories  
Immediate Hazard - No  
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)

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>% by wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium (III) oxide</td>
<td>1308-38-9</td>
<td>20 - 40</td>
</tr>
<tr>
<td>Aluminium Oxide (Non-Fibrous)</td>
<td>1344-28-1</td>
<td>2.5 - 10</td>
</tr>
</tbody>
</table>

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Chromium (III) oxide (CAS 1308-38-9)

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. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)
Not listed.

US. Massachusetts RTK - Substance List
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)
Chromium (III) oxide (CAS 1308-38-9)
MAGNESIUM OXIDE (CAS 1309-48-4)

US. New Jersey Worker and Community Right-to-Know Act
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)
Chromium (III) oxide (CAS 1308-38-9)
MAGNESIUM OXIDE (CAS 1309-48-4)

US. Pennsylvania Worker and Community Right-to-Know Law
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)
MAGNESIUM OXIDE (CAS 1309-48-4)

US. Rhode Island RTK
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)

US. California Proposition 65
California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

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>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>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>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: 07-15-2015
Version #: 01
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.

Material name: CMK-A