

## 1. Identification

<b>Product identifier</b>	<b>COMANCHE</b>
<b>Other means of identification</b>	
<b>Brand Code</b>	8200, 739A, 897B
<b>Recommended use</b>	For Industrial Use Only
<b>Recommended restrictions</b>	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/Supplier information

#### Manufacturer

<b>Company name</b>	HarbisonWalker International		
<b>Address</b>	1305 Cherrington Parkway, Suite 100 Moon Township, Pennsylvania 15108 US		
<b>Telephone</b>	General Phone:	412-375-6600	
<b>Website</b>	www.thinkHWI.com		
<b>Emergency phone number</b>	CHEMTREC 24 HOUR EMERGENCY #	1-800-424-9300	

## 2. Hazard(s) identification

### Classified hazards

This item is defined as an article per OSHA (29 CFR 1910.1200) and is therefore exempt from labeling. A Safety Data Sheet is available.

This item is not hazardous per 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. May cause respiratory irritation, lung injury, or cancer by inhalation. Limit skin contact. Wash hands after handling. Dispose of waste and residues in accordance with local authority requirements. Wear protective gloves/protective clothing/eye protection. Dust may cause cancer.

### Label elements

This item is defined as an article per OSHA (29 CFR 1910.1200) and is therefore exempt from labeling. A Safety Data Sheet is available.

This item is not hazardous per 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. May cause respiratory irritation, lung injury, or cancer by inhalation. Limit skin contact. Wash hands after handling. Dispose of waste and residues in accordance with local authority requirements. Wear protective gloves/protective clothing/eye protection. Dust may cause cancer.

### Hazard(s) not otherwise classified (HNOC)

This item is defined as an article per OSHA (29 CFR 1910.1200) and is therefore exempt from labeling. A Safety Data Sheet is available.

This item is not hazardous per 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. May cause respiratory irritation, lung injury, or cancer by inhalation. Limit skin contact. Wash hands after handling. Dispose of waste and residues in accordance with local authority requirements. Wear protective gloves/protective clothing/eye protection. Dust may cause cancer.

## 3. Composition/information on ingredients

### Mixtures

Chemical name	Common name and synonyms	CAS number	%
Aluminium Oxide (Non-Fibrous)		1344-28-1	60 - 80
Aluminum Granules, 97% Al -8+40 Mesh		7429-90-5	2.5 - 10
Graphite		7782-42-5	2.5 - 10
Magnesium Oxide		1309-48-4	2.5 - 10
Silicon Dioxide		7631-86-9	2.5 - 10

Chemical name	Common name and synonyms	CAS number	%
Carbon Black		1333-86-4	1 - 2.5
Diiron Trioxide		1309-37-1	1 - 2.5
Titanium Dioxide		13463-67-7	1 - 2.5
Cristobalite		14464-46-1	0.1 - 1

#### 4. First-aid measures

<b>Inhalation</b>	Not available.
<b>Skin contact</b>	Not available.
<b>Eye contact</b>	Not available.
<b>Ingestion</b>	Not available.
<b>Most important symptoms/effects, acute and delayed</b>	Not available.

#### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Use fire-extinguishing media appropriate for surrounding materials.
<b>Unsuitable extinguishing media</b>	Not available.
<b>Specific hazards arising from the chemical</b>	Not applicable.
<b>Special protective equipment and precautions for firefighters</b>	Not available.

#### 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Not available.
<b>Methods and materials for containment and cleaning up</b>	Not available.

#### 7. Handling and storage

<b>Precautions for safe handling</b>	Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust.
<b>Conditions for safe storage, including any incompatibilities</b>	Not available.

#### 8. Exposure controls/personal protection

##### Occupational exposure limits

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

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	PEL	5 mg/m <sup>3</sup>	Respirable fraction.
Aluminum Granules, 97% Al -8+40 Mesh (CAS 7429-90-5)	PEL	15 mg/m <sup>3</sup>	Total dust.
		5 mg/m <sup>3</sup>	Respirable dust.
Carbon Black (CAS 1333-86-4)	PEL	15 mg/m <sup>3</sup>	Total dust.
Diiron Trioxide (CAS 1309-37-1)	PEL	3.5 mg/m <sup>3</sup>	
Graphite (CAS 7782-42-5)	PEL	10 mg/m <sup>3</sup>	Fume.
		5 mg/m <sup>3</sup>	Respirable fraction.
Magnesium Oxide (CAS 1309-48-4)	PEL	15 mg/m <sup>3</sup>	Total dust.
		15 mg/m <sup>3</sup>	Total particulate.
Titanium Dioxide (CAS 13463-67-7)	PEL	15 mg/m <sup>3</sup>	Total dust.

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

Components	Type	Value	Form
Cristobalite (CAS 14464-46-1)	TWA	0.15 mg/m3	Total dust.
		0.05 mg/m3	Respirable.
		1.2 mppcf	Respirable.
Graphite (CAS 7782-42-5)	TWA	15 mppcf	
Silicon Dioxide (CAS 7631-86-9)	TWA	0.8 mg/m3	
		20 mppcf	

**US. ACGIH Threshold Limit Values**

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	1 mg/m3	Respirable fraction.
Aluminum Granules, 97% Al -8+40 Mesh (CAS 7429-90-5)	TWA	1 mg/m3	Respirable fraction.
Carbon Black (CAS 1333-86-4)	TWA	3 mg/m3	Inhalable fraction.
Cristobalite (CAS 14464-46-1)	TWA	0.025 mg/m3	Respirable fraction.
Diiron Trioxide (CAS 1309-37-1)	TWA	5 mg/m3	Respirable fraction.
Graphite (CAS 7782-42-5)	TWA	2 mg/m3	Respirable fraction.
Magnesium Oxide (CAS 1309-48-4)	TWA	10 mg/m3	Inhalable fraction.
Titanium Dioxide (CAS 13463-67-7)	TWA	10 mg/m3	

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

Components	Type	Value	Form
Aluminum Granules, 97% Al -8+40 Mesh (CAS 7429-90-5)	TWA	5 mg/m3	Welding fume or pyrophoric powder.
		5 mg/m3	Respirable.
		10 mg/m3	Total
Carbon Black (CAS 1333-86-4)	TWA	0.1 mg/m3	
Cristobalite (CAS 14464-46-1)	TWA	3 fibers/cm3	Fiber.
		3 fibers/cm3	Dust.
		5 mg/m3	Fiber, total
		5 mg/m3	fibers, total dust
Diiron Trioxide (CAS 1309-37-1)	TWA	5 mg/m3	Dust and fume.
Graphite (CAS 7782-42-5)	TWA	2.5 mg/m3	Respirable.
Silicon Dioxide (CAS 7631-86-9)	TWA	6 mg/m3	

**Biological limit values**

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

**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.

**Appropriate engineering controls**

Not available.

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

**Eye/face protection**

Not available.

<b>Skin protection</b>	
<b>Hand protection</b>	Not available.
<b>Other</b>	Not available.
<b>Respiratory protection</b>	Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.
<b>Thermal hazards</b>	Not available.

## 9. Physical and chemical properties

### Appearance

<b>Physical state</b>	Solid.
<b>Form</b>	Not available.
<b>Color</b>	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.

## 10. Stability and reactivity

**Reactivity** Not available.

**Chemical stability** Not available.

**Possibility of hazardous reactions** Not available.

**Conditions to avoid**

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 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**

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**

Not available.

**11. Toxicological information****Information on likely routes of exposure**

<b>Inhalation</b>	Not available.
<b>Skin contact</b>	Not available.
<b>Eye contact</b>	Not available.
<b>Ingestion</b>	Not available.

**Symptoms related to the physical, chemical and toxicological characteristics**

Not available.

**Information on toxicological effects**

<b>Acute toxicity</b>	Not available.
<b>Skin corrosion/irritation</b>	Not available.
<b>Serious eye damage/eye irritation</b>	Not available.

**Respiratory or skin sensitization**

<b>Respiratory sensitization</b>	Not available.
<b>Skin sensitization</b>	Not available.

**Germ cell mutagenicity**

Not available.

**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.) 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. "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..." (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.

**IARC Monographs. Overall Evaluation of Carcinogenicity**

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.
Silicon Dioxide (CAS 7631-86-9)	3 Not classifiable as to carcinogenicity to humans.
Titanium Dioxide (CAS 13463-67-7)	2B Possibly carcinogenic to humans.

## 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.

## US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

<b>Reproductive toxicity</b>	Not available.
<b>Specific target organ toxicity - single exposure</b>	Not available.
<b>Specific target organ toxicity - repeated exposure</b>	Not available.
<b>Aspiration hazard</b>	Not available.

## 12. Ecological information

<b>Ecotoxicity</b>	No ecotoxicity data noted for the ingredient(s).
<b>Persistence and degradability</b>	Not available.
<b>Bioaccumulative potential</b>	Not available.
<b>Mobility in soil</b>	Not available.
<b>Other adverse effects</b>	Not available.

## 13. Disposal considerations

<b>Disposal instructions</b>	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.
<b>Hazardous waste code</b>	Not applicable.
<b>Waste from residues / unused products</b>	Not available.
<b>Contaminated packaging</b>	Not available.

## 14. Transport information

<b>DOT</b>	Not regulated as dangerous goods.
<b>IATA</b>	Not regulated as dangerous goods.
<b>IMDG</b>	Not regulated as dangerous goods.
<b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	Not available.

## 15. Regulatory information

<b>US federal regulations</b>	All chemical substances in this product are listed on the TSCA chemical substance inventory where required.
<b>TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)</b>	Not regulated.
<b>CERCLA Hazardous Substance List (40 CFR 302.4)</b>	Not listed.
<b>SARA 304 Emergency release notification</b>	Not regulated.
<b>US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)</b>	Not listed.
<b>Superfund Amendments and Reauthorization Act of 1986 (SARA)</b>	
<b>Hazard categories</b>	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)**

Chemical name	CAS number	% by wt.
Aluminium Oxide (Non-Fibrous)	1344-28-1	60 - 80
Aluminum Granules, 97% Al -8+40 Mesh	7429-90-5	2.5 - 10

**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. 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)  
 Aluminum Granules, 97% Al -8+40 Mesh (CAS 7429-90-5)  
 Carbon Black (CAS 1333-86-4)  
 Cristobalite (CAS 14464-46-1)  
 Diiron Trioxide (CAS 1309-37-1)  
 Graphite (CAS 7782-42-5)  
 Magnesium Oxide (CAS 1309-48-4)  
 Silicon Dioxide (CAS 7631-86-9)  
 Titanium Dioxide (CAS 13463-67-7)

**US. New Jersey Worker and Community Right-to-Know Act**

Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)  
 Aluminum Granules, 97% Al -8+40 Mesh (CAS 7429-90-5)  
 Carbon Black (CAS 1333-86-4)  
 Cristobalite (CAS 14464-46-1)  
 Diiron Trioxide (CAS 1309-37-1)  
 Graphite (CAS 7782-42-5)  
 Magnesium Oxide (CAS 1309-48-4)  
 Silicon Dioxide (CAS 7631-86-9)  
 Titanium Dioxide (CAS 13463-67-7)

**US. Pennsylvania Worker and Community Right-to-Know Law**

Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)  
 Aluminum Granules, 97% Al -8+40 Mesh (CAS 7429-90-5)  
 Carbon Black (CAS 1333-86-4)  
 Cristobalite (CAS 14464-46-1)  
 Diiron Trioxide (CAS 1309-37-1)  
 Graphite (CAS 7782-42-5)  
 Magnesium Oxide (CAS 1309-48-4)  
 Silicon Dioxide (CAS 7631-86-9)  
 Titanium Dioxide (CAS 13463-67-7)

**US. Rhode Island RTK**

Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)  
 Aluminum Granules, 97% Al -8+40 Mesh (CAS 7429-90-5)

**US. California Proposition 65****US - California Proposition 65 - CRT: Listed date/Carcinogenic substance**

Carbon Black (CAS 1333-86-4)	Listed: February 21, 2003
Titanium Dioxide (CAS 13463-67-7)	Listed: September 2, 2011

**International Inventories**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

\*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

<b>Issue date</b>	07-15-2015
<b>Version #</b>	01
<b>Disclaimer</b>	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.
<b>Revision Information</b>	Product and Company Identification: Product Codes Composition / Information on Ingredients: Component Summary Transport Information: Material Transportation Information