

## 1. Identification

**Product identifier**                           **JADECAST 50**

**Other means of identification**

**Brand Code**                                 9466

**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  
    EMERGENCY #

## 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**               None.

## 3. Composition/information on ingredients

### Mixtures

Chemical name	Common name and synonyms	CAS number	%
Chromium (III) oxide		1308-38-9	40 - 60
Aluminium Oxide (Non-Fibrous)		1344-28-1	20 - 40
Amorphous Silica	SILICA, AMORPHOUS, FUMED SILICA (CRYSTALLINE FREE)	7631-86-9	1 - 2.5
Fumes, Silica		69012-64-2	1 - 2.5
Magnesium Oxide		1309-48-4	1 - 2.5
TRADE SECRET*		Proprietary*	1 - 2.5
Formaldehyde		50-00-0	0 - 0.1
Other components below reportable levels			2.5 - 10

\*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

## 4. First-aid measures

<b>Inhalation</b>	Move to fresh air. Call a physician if symptoms develop or persist.
<b>Skin contact</b>	Wash off with soap and water. Get medical attention if irritation develops and persists.
<b>Eye contact</b>	Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Rinse mouth. Get medical attention if symptoms occur.
<b>Most important symptoms/effects, acute and delayed</b>	Dusts may irritate the respiratory tract, skin and eyes.
<b>Indication of immediate medical attention and special treatment needed</b>	Treat symptomatically.
<b>General information</b>	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

## 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>	Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. For personal protection, see section 8 of the SDS.
<b>Methods and materials for containment and cleaning up</b>	Stop the flow of material, if this is without risk. Collect dust using a vacuum cleaner equipped with HEPA filter.  Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Avoid the generation of dusts during clean-up. Following product recovery, flush area with water.  Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. For waste disposal, see section 13 of the SDS.
<b>Environmental precautions</b>	Avoid discharge into drains, water courses or onto the ground.

## 7. Handling and storage

<b>Precautions for safe handling</b>	Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Avoid prolonged exposure. Practice good housekeeping.
<b>Conditions for safe storage, including any incompatibilities</b>	Store in original tightly closed container. Store in a well-ventilated place. 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)

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	PEL	5 mg/m <sup>3</sup>	Respirable fraction.
Chromium (III) oxide (CAS 1308-38-9)	PEL	15 mg/m <sup>3</sup> 0.5 mg/m <sup>3</sup>	Total dust.
Magnesium Oxide (CAS 1309-48-4)	PEL	15 mg/m <sup>3</sup>	Total particulate.

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

Components	Type	Value
Amorphous Silica (CAS 7631-86-9)	TWA	0.8 mg/m3
Fumes, Silica (CAS 69012-64-2)	TWA	20 mppcf 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.
Chromium (III) oxide (CAS 1308-38-9)	TWA	0.5 mg/m3	
Magnesium Oxide (CAS 1309-48-4)	TWA	10 mg/m3	Inhalable fraction.

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

Components	Type	Value
Amorphous Silica (CAS 7631-86-9)	TWA	6 mg/m3
Chromium (III) oxide (CAS 1308-38-9)	TWA	0.5 mg/m3
Fumes, Silica (CAS 69012-64-2)	TWA	6 mg/m3

**Biological limit values**

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

**Exposure guidelines**

Zirconium silicates (zircon sands) contain trace amounts (106-120 pCi/g) of naturally occurring radioactive uranium and thorium. Overexposure by inhalation to respirable dust containing uranium and thorium may cause lung cancer. Eye contact with the dust may cause eye irritation. Measurements made by Dupont during the use of a similar mineral sand indicated the observance of the 5 mg/m3 OSHA PEL for respirable dust and/or the PEL for quartz ensures the user is below the exposure limits established for uranium and thorium. No LD50 or LC50 can be found for zircon sand. 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**

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. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits.

**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** Solid Powder.  
**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.

**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 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.

<b>Incompatible materials</b>	Acids. 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.
<b>Hazardous decomposition products</b>	No hazardous decomposition products are known.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	Dust may irritate respiratory system. Prolonged inhalation may be harmful.
<b>Skin contact</b>	Dust or powder may irritate the skin.
<b>Eye contact</b>	Dust may irritate the eyes.
<b>Ingestion</b>	Expected to be a low ingestion hazard.

<b>Symptoms related to the physical, chemical and toxicological characteristics</b>	Dusts may irritate the respiratory tract, skin and eyes.
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### Information on toxicological effects

<b>Acute toxicity</b>	Not available.
<b>Skin corrosion/irritation</b>	Prolonged skin contact may cause temporary irritation.
<b>Serious eye damage/eye irritation</b>	Direct contact with eyes may cause temporary irritation.

### Respiratory or skin sensitization

<b>Respiratory sensitization</b>	Not a respiratory sensitizer.
<b>Skin sensitization</b>	This product is not expected to cause skin sensitization.

<b>Germ cell mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
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<b>Carcinogenicity</b>	Risk of cancer cannot be excluded with prolonged exposure.
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#### IARC Monographs. Overall Evaluation of Carcinogenicity

Amorphous Silica (CAS 7631-86-9)	3 Not classifiable as to carcinogenicity to humans.
Chromium (III) oxide (CAS 1308-38-9)	3 Not classifiable as to carcinogenicity to humans.
Fumes, Silica (CAS 69012-64-2)	3 Not classifiable as to carcinogenicity to humans.

#### US. National Toxicology Program (NTP) Report on Carcinogens

Not available.

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

Not listed.

<b>Reproductive toxicity</b>	This product is not expected to cause reproductive or developmental effects.
<b>Specific target organ toxicity - single exposure</b>	Not classified.
<b>Specific target organ toxicity - repeated exposure</b>	Not classified.
<b>Aspiration hazard</b>	Not an aspiration hazard.
<b>Chronic effects</b>	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

## 12. Ecological information

<b>Ecotoxicity</b>	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.
<b>Persistence and degradability</b>	No data is available on the degradability of this product.
<b>Bioaccumulative potential</b>	
<b>Mobility in soil</b>	No data available.
<b>Other adverse effects</b>	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

<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>	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.
<b>Waste from residues / unused products</b>	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.
<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 applicable.

### 15. Regulatory information

<b>US federal regulations</b>	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.		
<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		
<b>SARA 302 Extremely hazardous substance</b>	Not listed.		
<b>SARA 311/312 Hazardous chemical</b>	No		
<b>SARA 313 (TRI reporting)</b>			
<b>Chemical name</b>	<b>CAS number</b>	<b>% by wt.</b>	
Chromium (III) oxide	1308-38-9	40 - 60	
Aluminium Oxide (Non-Fibrous)	1344-28-1	20 - 40	
<b>Other federal regulations</b>			
<b>Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List</b>	Chromium (III) oxide (CAS 1308-38-9)		
<b>Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)</b>	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)  
Amorphous Silica (CAS 7631-86-9)  
Chromium (III) oxide (CAS 1308-38-9)  
Fumes, Silica (CAS 69012-64-2)  
Magnesium Oxide (CAS 1309-48-4)

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

Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)  
Amorphous Silica (CAS 7631-86-9)  
Chromium (III) oxide (CAS 1308-38-9)  
Fumes, Silica (CAS 69012-64-2)  
Magnesium Oxide (CAS 1309-48-4)

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

Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)  
Amorphous Silica (CAS 7631-86-9)  
Fumes, Silica (CAS 69012-64-2)  
Magnesium Oxide (CAS 1309-48-4)

### US. Rhode Island RTK

Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)

### US. California Proposition 65

This product contains a chemical known to the State of California to cause cancer.

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

Formaldehyde (CAS 50-00-0)	Listed: January 1, 1988
Quartz (SiO <sub>2</sub> ) (CAS 14808-60-7)	Listed: October 1, 1988
Titanium Dioxide (CAS 13463-67-7)	Listed: September 2, 2011
VANADIUM PENTAOXIDE (CAS 1314-62-1)	Listed: February 11, 2005

## International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
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)	Yes
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	Yes

\*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>	05-28-2015
<b>Revision date</b>	01-19-2016
<b>Version #</b>	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**

Composition / Information on Ingredients: Disclosure Overrides  
Disposal considerations: Hazardous waste code  
Regulatory information: California Prop 65  
Regulatory information: US state regulations  
Regulatory information: US federal regulations