

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name or designation of the mixture	JADECAST 50
Registration number	-
Synonyms	None.
Brand Code	9466
Issue date	05-February-2018
Version number	01

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses	For Industrial Use Only
Uses advised against	None known.

1.3. Details of the supplier of the safety data sheet

Supplier

Company name	HarbisonWalker International	
Address	1305 Cherrington Parkway, Suite 100 Moon Township, PA 15108, USA United States	
Division		
Telephone	General Phone:	412-375-6600
	CHEMTREC EMERGENCY	1-800-424-9300
	US/CAN ONLY	

e-mail	sds@thinkHWI.com
Contact person	HWI USA

1.4. Emergency telephone number

Not available.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

This mixture does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

Hazard summary	Exposure to powder or dusts may be irritating to eyes, nose and throat. Not classified for health hazards. However, occupational exposure to the mixture or substance(s) may cause adverse health effects.
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2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains:	Chromium (III) oxide
Hazard pictograms	None.
Signal word	None.
Hazard statements	The mixture does not meet the criteria for classification.

Precautionary statements

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.

Supplemental label information	None.
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2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
Chromium (III) oxide	60 - 80	1308-38-9 215-160-9	-	-	
Classification:	-				
Aluminium Oxide (Non-Fibrous)	2,5 - 10	1344-28-1 215-691-6	-	-	
Classification:	-				
TRADE SECRET	1 - 2,5	Proprietary	-	-	
Classification:	-				
Formaldehyde	0 - 0,1	50-00-0 200-001-8	-	605-001-00-5	
Classification:	Flam. Liq. 3;H226, Acute Tox. 3;H301, Acute Tox. 3;H311, Skin Corr. 1B;H314, Skin Sens. 1;H317, Eye Dam. 1;H318, Acute Tox. 3;H331, STOT SE 3;H335, Muta. 2;H341, Carc. 1B;H350, Aquatic Chronic 3;H412				B,D

Other components below reportable levels 10 - 20

List of abbreviations and symbols that may be used above

#: This substance has been assigned Union workplace exposure limit(s).

M: M-factor

PBT: persistent, bioaccumulative and toxic substance.

vPvB: very persistent and very bioaccumulative substance.

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Composition comments

The full text for all H-statements is displayed in section 16.

SECTION 4: First aid measures

General information

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

4.1. Description of 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

Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.

Ingestion

Rinse mouth. Get medical attention if symptoms occur.

4.2. Most important symptoms and effects, both acute and delayed

Dusts may irritate the respiratory tract, skin and eyes.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

General fire hazards

Not available.

5.1. Extinguishing media

Suitable extinguishing media

Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media

Not available.

5.2. Special hazards arising from the substance or mixture

Not available.

5.3. Advice for firefighters

Special protective equipment for firefighters	Not available.
Special fire fighting procedures	Not available.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. For personal protection, see section 8 of the SDS.
For emergency responders	Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

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

6.3. Methods and material for containment and cleaning up Avoid the generation of dusts during clean-up. Collect dust using a vacuum cleaner equipped with HEPA filter. Stop the flow of material, if this is without risk.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal.

6.4. Reference to other sections For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling Minimise dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Avoid prolonged exposure. Practice good housekeeping.

7.2. Conditions for safe storage, including any incompatibilities Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

7.3. Specific end use(s) Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Austria. MAK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	MAK	5 mg/m ³	Respirable fume.
		5 mg/m ³	Respirable fraction.
	STEL	10 mg/m ³	Inhalable fraction.
		20 mg/m ³	Inhalable fraction.
		10 mg/m ³	Respirable fume.
Chromium (III) oxide (CAS 1308-38-9)	MAK	10 mg/m ³	Respirable fraction.
		2 mg/m ³	
Fumes, Silica (CAS 69012-64-2)	MAK	0,3 mg/m ³	Respirable fraction.
Titanium dioxide (CAS 13463-67-7)	MAK	5 mg/m ³	Respirable dust.
	STEL	10 mg/m ³	Respirable dust.

Belgium. Exposure Limit Values.

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	1 mg/m ³	Respirable fraction.
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m ³	

Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	3,5 mg/m ³	Respirable fraction.
		10 mg/m ³	Dust.
Chromium (III) oxide (CAS 1308-38-9)	TWA	1,5 mg/m ³	Respirable fraction.
		2 mg/m ³	
Fumes, Silica (CAS 69012-64-2)	TWA	10 mg/m ³	Inhalable fraction.
Titanium dioxide (CAS 13463-67-7)	TWA	0,07 mg/m ³	Respirable fraction.
		10 mg/m ³	Respirable dust.

Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	MAC	4 mg/m ³	Respirable dust.
		10 mg/m ³	Total dust.
Fumes, Silica (CAS 69012-64-2)	MAC	6 mg/m ³	Total dust.
		2,4 mg/m ³	Respirable dust.
Titanium dioxide (CAS 13463-67-7)	STEL	4 mg/m ³	Respirable dust.
		10 mg/m ³	Total dust.

Cyprus. OELs. Control of factory atmosphere and dangerous substances in factories regulation, PI 311/73, as amended.

Components	Type	Value
Fumes, Silica (CAS 69012-64-2)	TWA	2 mg/m ³
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m ³

Czech Republic. OELs. Government Decree 361

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	0,1 mg/m ³	Respirable dust.
Chromium (III) oxide (CAS 1308-38-9)	Ceiling	1,5 mg/m ³	
	TWA	0,5 mg/m ³	
Fumes, Silica (CAS 69012-64-2)	TWA	4 mg/m ³	Dust.
Titanium dioxide (CAS 13463-67-7)	TWA	5 mg/m ³	Dust.

Denmark. Exposure Limit Values

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TLV	5 mg/m ³	Total
		2 mg/m ³	Respirable.
Fumes, Silica (CAS 69012-64-2)	TLV	2 mg/m ³	Respirable.
Titanium dioxide (CAS 13463-67-7)	TLV	6 mg/m ³	

Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	4 mg/m ³	Respirable dust.
		10 mg/m ³	Total dust.

Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)

Components	Type	Value	Form
Chromium (III) oxide (CAS 1308-38-9)	STEL	0,06 mg/m ³	
	TWA	0,02 mg/m ³	
Fumes, Silica (CAS 69012-64-2)	TWA	2 mg/m ³	Respirable dust.
Titanium dioxide (CAS 13463-67-7)	TWA	5 mg/m ³	

Finland. Workplace Exposure Limits

Components	Type	Value	Form
Chromium (III) oxide (CAS 1308-38-9)	TWA	0,5 mg/m ³	
Fumes, Silica (CAS 69012-64-2)	TWA	5 mg/m ³	
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m ³	Dust.

France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	VME	10 mg/m ³	
Chromium (III) oxide (CAS 1308-38-9)	VME	2 mg/m ³	
Titanium dioxide (CAS 13463-67-7)	VME	10 mg/m ³	

Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	4 mg/m ³	Inhalable fraction.
		1,5 mg/m ³	Respirable fraction.
Fumes, Silica (CAS 69012-64-2)	TWA	0,3 mg/m ³	Respirable fraction.
Titanium dioxide (CAS 13463-67-7)	TWA	4 mg/m ³	Inhalable dust.
		0,3 mg/m ³	Respirable dust.

Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	AGW	10 mg/m ³	Inhalable fraction.
		1,25 mg/m ³	Respirable fraction.
Chromium (III) oxide (CAS 1308-38-9)	AGW	2 mg/m ³	Inhalable fraction.
Fumes, Silica (CAS 69012-64-2)	AGW	0,3 mg/m ³	Respirable fraction.
Titanium dioxide (CAS 13463-67-7)	AGW	10 mg/m ³	Inhalable fraction.
		1,25 mg/m ³	Respirable fraction.

Greece. OELs (Decree No. 90/1999, as amended)

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	5 mg/m ³	Inhalable
		10 mg/m ³	Respirable.
Chromium (III) oxide (CAS 1308-38-9)	TWA	0,5 mg/m ³	
Titanium dioxide (CAS 13463-67-7)	TWA	5 mg/m ³	Respirable.
		10 mg/m ³	Inhalable

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	6 mg/m ³	Respirable.
Chromium (III) oxide (CAS 1308-38-9)	STEL	2 mg/m ³	
Titanium dioxide (CAS 13463-67-7)	TWA	0,5 mg/m ³	Respirable dust.
	TWA	6 mg/m ³	
		10 mg/m ³	Total inhalable dust.

Iceland. OELs. Regulation 154/1999 on occupational exposure limits

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	10 mg/m ³	
Chromium (III) oxide (CAS 1308-38-9)	TWA	0,5 mg/m ³	Dust.
Fumes, Silica (CAS 69012-64-2)	TWA	2 mg/m ³	Respirable mist.
Titanium dioxide (CAS 13463-67-7)	TWA	6 mg/m ³	

Ireland. Occupational Exposure Limits

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	4 mg/m ³	Respirable dust.
Chromium (III) oxide (CAS 1308-38-9)	TWA	10 mg/m ³	Total inhalable dust.
		2 mg/m ³	
Fumes, Silica (CAS 69012-64-2)	TWA	6 mg/m ³	Total inhalable dust.
Titanium dioxide (CAS 13463-67-7)	TWA	2,4 mg/m ³	Respirable dust.
		4 mg/m ³	Respirable dust.
		10 mg/m ³	Total inhalable dust.

Italy. Occupational Exposure Limits

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	1 mg/m ³	Respirable fraction.
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m ³	

Latvia. OELs. Occupational exposure limit values of chemical substances in work environment

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	6 mg/m ³	Decomposition aerosol.
Chromium (III) oxide (CAS 1308-38-9)	TWA	4 mg/m ³	
		1 mg/m ³	
Fumes, Silica (CAS 69012-64-2)	TWA	1 mg/m ³	
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m ³	

Lithuania. OELs. Limit Values for Chemical Substances, General Requirements

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	5 mg/m ³	Inhalable fraction.
Titanium dioxide (CAS 13463-67-7)	TWA	2 mg/m ³	Respirable fraction.
		5 mg/m ³	

Malta. OELs. Occupational Exposure Limit Values (L.N. 227. of Occupational Health and Safety Authority Act (CAP. 424), Schedules I and V)

Components	Type	Value
Chromium (III) oxide (CAS 1308-38-9)	TWA	2 mg/m ³

Norway. Administrative Norms for Contaminants in the Workplace

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TLV	10 mg/m ³	
Chromium (III) oxide (CAS 1308-38-9)	TLV	0,5 mg/m ³	
Fumes, Silica (CAS 69012-64-2)	TLV	1,5 mg/m ³	Respirable dust.
Titanium dioxide (CAS 13463-67-7)	TLV	5 mg/m ³	

Poland. MACs. Minister of Labour and Social Policy Regarding Maximum Allowable Concentrations and Intensities in Working Environment

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	2,5 mg/m ³	Inhalable fraction.
		1,2 mg/m ³	Respirable fraction.
Chromium (III) oxide (CAS 1308-38-9)	TWA	0,5 mg/m ³	
Titanium dioxide (CAS 13463-67-7)	STEL	30 mg/m ³	
	TWA	10 mg/m ³	Inhalable fraction.

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)

Components	Type	Value
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	10 mg/m ³
Chromium (III) oxide (CAS 1308-38-9)	TWA	0,5 mg/m ³
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m ³

Romania. OELs. Protection of workers from exposure to chemical agents at the workplace

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	STEL	5 mg/m ³	Aerosol
	TWA	2 mg/m ³	Aerosol
Chromium (III) oxide (CAS 1308-38-9)	TWA	0,5 mg/m ³	
Titanium dioxide (CAS 13463-67-7)	STEL	15 mg/m ³	
	TWA	10 mg/m ³	

Slovakia. OELs. Regulation No. 300/2007 concerning protection of health in work with chemical agents

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	4 mg/m ³	Inhalable fraction.
		1,5 mg/m ³	Respirable fraction.
		0,1 mg/m ³	
Fumes, Silica (CAS 69012-64-2)	TWA	0,3 mg/m ³	
Titanium dioxide (CAS 13463-67-7)	TWA	5 mg/m ³	

Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)

Components	Type	Value	Form
Chromium (III) oxide (CAS 1308-38-9)	TWA	2 mg/m ³	
Fumes, Silica (CAS 69012-64-2)	TWA	4 mg/m ³	Inhalable fraction.

Spain. Occupational Exposure Limits

Components	Type	Value	
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	10 mg/m ³	
Chromium (III) oxide (CAS 1308-38-9)	TWA	2 mg/m ³	
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m ³	

Sweden. Occupational Exposure Limit Values

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	5 mg/m ³	Total dust.
Titanium dioxide (CAS 13463-67-7)	TWA	2 mg/m ³	Respirable dust.
		5 mg/m ³	Total dust.

Switzerland. SUVA Grenzwerte am Arbeitsplatz

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	STEL	24 mg/m ³	Fume and respirable dust.
	TWA	3 mg/m ³	Respirable dust.
Chromium (III) oxide (CAS 1308-38-9)	TWA	3 mg/m ³	Fume and respirable dust.
		0,5 mg/m ³	Inhalable dust.
Titanium dioxide (CAS 13463-67-7)	TWA	3 mg/m ³	Respirable dust.

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	4 mg/m ³	Respirable dust.
		10 mg/m ³	Inhalable dust.
Chromium (III) oxide (CAS 1308-38-9)	TWA	0,5 mg/m ³	
		6 mg/m ³	Inhalable dust.
Fumes, Silica (CAS 69012-64-2)	TWA	2,4 mg/m ³	Respirable dust.
		4 mg/m ³	Respirable.
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m ³	Inhalable

Biological limit values

Hungary. Chemical Safety at Workplace Ordinance Joint Decree No. 25/2000 (Annex 2): Permissible limit values of biological exposure (effect) indices

Components	Value	Determinant	Specimen	Sampling time
Chromium (III) oxide (CAS 1308-38-9)	0,02 mg/g	chromium	Creatinine in urine	*
	0,043 µmol/mmol	chromium	Creatinine in urine	*

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

Recommended monitoring procedures Follow standard monitoring procedures.

Derived no effect levels (DNELs) Not available.

Predicted no effect concentrations (PNECs)

Not available.

Exposure guidelines

The resin binder in this product was specifically engineered to have low toxicity, with minima 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.

8.2. Exposure controls

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 OEL (occupational exposure limit), 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

General information

Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the 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.



Hygiene measures

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.

Environmental exposure controls

Environmental manager must be informed of all major releases.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state Solid.

Form Powder.

Colour Not available.

Odour Not available.

Odour 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.

Vapour pressure Not available.

Vapour density Not available.

Relative density Not available.

Solubility(ies)	
Solubility (water)	Not available.
Solubility (other)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.
9.2. Other information	No relevant additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
10.2. Chemical stability	Material is stable under normal conditions.
10.3. Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
10.4. 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.
10.5. Incompatible materials	Acids. Fluorine. Chlorine. Incompatibility is based strictly upon potential theoretical reactions between chemicals and may not be specific to industrial application exposure.
10.6. Hazardous decomposition products	No hazardous decomposition products are known.

SECTION 11: Toxicological information

General information	Occupational exposure to the substance or mixture may cause adverse effects.
Information on likely routes of exposure	
Inhalation	Dust may irritate respiratory system. Prolonged inhalation may be harmful.
Skin contact	Dust or powder may irritate the skin.
Eye contact	Dust may irritate the eyes.
Ingestion	May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.
Symptoms	Dusts may irritate the respiratory tract, skin and eyes.
11.1. Information on toxicological effects	
Acute toxicity	Not known.
Skin corrosion/irritation	Due to partial or complete lack of data the classification is not possible.
Serious eye damage/eye irritation	Due to partial or complete lack of data the classification is not possible.
Respiratory sensitisation	Due to partial or complete lack of data the classification is not possible.
Skin sensitisation	Due to partial or complete lack of data the classification is not possible.
Germ cell mutagenicity	Due to partial or complete lack of data the classification is not possible.
Carcinogenicity	Due to partial or complete lack of data the classification is not possible.
Hungary. 26/2000 EüM Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)	Not listed.

IARC Monographs. Overall Evaluation of Carcinogenicity

Chromium (III) oxide (CAS 1308-38-9)

3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity	Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - single exposure	Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - repeated exposure	Due to partial or complete lack of data the classification is not possible.
Aspiration hazard	Due to partial or complete lack of data the classification is not possible.
Mixture versus substance information	No information available.
Other information	Not available.

SECTION 12: Ecological information

12.1. Toxicity	Based on available data, the classification criteria are not met for hazardous to the aquatic environment.
12.2. Persistence and degradability	No data is available on the degradability of this product.
12.3. Bioaccumulative potential	
Partition coefficient n-octanol/water (log Kow)	Not available.
Bioconcentration factor (BCF)	Not available.
12.4. Mobility in soil	No data available.
12.5. Results of PBT and vPvB assessment	Not available.
12.6. 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.

12.7. Additional information

Estonia Dangerous substances in groundwater Data

Chromium (III) oxide (CAS 1308-38-9)

Chromium (Cr) 10 UG/L
Chromium (Cr) 200 UG/L

Estonia Dangerous substances in soil Data

Chromium (III) oxide (CAS 1308-38-9)

Chromium (Cr) 100 mg/kg
Chromium (Cr) 300 mg/kg
Chromium (Cr) 800 mg/kg

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste	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.
EU waste code	Not available.

SECTION 14: Transport information

ADR

14.1. - 14.6.: Not regulated as dangerous goods.

RID

14.1. - 14.6.: Not regulated as dangerous goods.

ADN

14.1. - 14.6.: Not regulated as dangerous goods.

IATA

14.1. - 14.6.: Not regulated as dangerous goods.

IMDG

14.1. - 14.6.: Not regulated as dangerous goods.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture EU regulations

Regulation (EC) No. 2037/2000 on substances that deplete the ozone layer, Annex I

Not listed.

Regulation (EC) No. 2037/2000 on substances that deplete the ozone layer, Annex II

Not listed.

Regulation (EC) No. 850/2004 on persistent organic pollutants, Annex I

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry

Chromium (III) oxide (CAS 1308-38-9)

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use

Not regulated.

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work

Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Not listed.

Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

National regulations

Follow national regulation for work with chemical agents.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations Not available.

References Not available.

Information on evaluation method leading to the classification of mixture Not available.

Full text of any H-statements not written out in full under Sections 2 to 15

H226 Flammable liquid and vapour.

H301 Toxic if swallowed.
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H331 Toxic if inhaled.
H335 May cause respiratory irritation.
H341 Suspected of causing genetic defects.
H350 May cause cancer.
H412 Harmful to aquatic life with long lasting effects.

Revision information

Product and Company Identification: Product and Company Identification
Composition / Information on Ingredients: Ingredients
Toxicological Information: Toxicological Data

Training information

Not available.

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.