



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product identifier **SERV 50 DCX**
Version # 01
Issue date 10-02-2014
Brand Code 9336
Product use For Industrial Use Only
Manufacturer information ANH Refractories Company
 400 Fairway Drive
 Moon Township, Pennsylvania 15108
 United States
 www.anhrefractories.com
 General Phone: 412-375-6600
 CHEMTREC 24 HOUR 1-800-424-9300
 EMERGENCY #

2. Hazards Identification

Emergency overview Cancer hazard. Exposure to powder or dusts may be irritating to eyes, nose and throat. Prolonged exposure may cause chronic effects.

Potential health effects

Routes of exposure Inhalation. Ingestion. Skin contact. Eye contact.

Eyes Dust in the eyes will cause irritation. Avoid contact with eyes.

Skin Dust or powder may irritate the skin. Avoid contact with the skin.

Inhalation May cause cancer by inhalation. Dust may irritate respiratory system. Inhalation of dusts may cause respiratory irritation. Prolonged inhalation may be harmful. Do not breathe dust.

Ingestion Components of the product may be absorbed into the body by ingestion. May cause irritation. Do not ingest.

Target organs Eyes. Respiratory system. Skin.

Signs and symptoms Dust may irritate the eyes and the respiratory system.

Potential environmental effects Components of this product are hazardous to aquatic life. May cause long-term adverse effects in the environment.

3. Composition / Information on Ingredients

Hazardous components	CAS #	Percent
Titanium Dioxide	13463-67-7	0.5 - 1.5
Non-hazardous components	CAS #	Percent
ALPHA-ALUMINA	1344-28-1	30 - 60
CHROMIUM (III) OXIDE	1308-38-9	30 - 60
CHROMIUM III COMPOUNDS	1308-31-2	1 - 5
Cement, Alumina, Chemicals	65997-16-2	0.5 - 1.5
FORMALDEHYDE	50-00-0	0 - 0.1
Other components below reportable levels		1 - 5

4. First Aid Measures

First aid procedures

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. If a contact lens is present, DO NOT delay irrigation or attempt to remove the lens. Continue rinsing. Get medical attention if irritation develops and persists.

Skin contact Remove and isolate contaminated clothing and shoes. Wash off with warm water and soap. Get medical attention if irritation develops and persists. For minor skin contact, avoid spreading material on unaffected skin.

Inhalation If dust from the material is inhaled, remove the affected person immediately to fresh air. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention, if needed.

Ingestion Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If ingestion of a large amount does occur, call a poison control center immediately.

Notes to physician In case of shortness of breath, give oxygen. Symptoms may be delayed.

General advice In case of shortness of breath, give oxygen. Get medical attention if symptoms occur. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Keep victim under observation. Keep victim warm.

5. Fire Fighting Measures

Extinguishing media

Suitable extinguishing media Use fire-extinguishing media appropriate for surrounding materials.

Fire fighting equipment/instructions Not available.

Explosion data

Sensitivity to static discharge Not available.

Sensitivity to mechanical impact Not available.

6. Accidental Release Measures

Personal precautions Keep unnecessary personnel away. Avoid inhalation of dust from the spilled material. Wear a dust mask if dust is generated above exposure limits. For personal protection, see section 8 of the MSDS.

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not contaminate water.

Methods for containment If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product.

Methods for cleaning up Minimize dust generation and accumulation. Should not be released into the environment. Collect dust using a vacuum cleaner equipped with HEPA filter. Following product recovery, flush area with water. For waste disposal, see section 13 of the MSDS.

7. Handling and Storage

Handling Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust. Avoid contact with skin and eyes. Avoid prolonged exposure. In case of insufficient ventilation, wear suitable respiratory equipment. Wear personal protective equipment. Wash thoroughly after handling. Practice good housekeeping. Avoid release to the environment.

Storage Store in a closed container away from incompatible materials. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the MSDS).

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
ALPHA-ALUMINA (CAS 1344-28-1)	TWA	1 mg/m3	Respirable fraction.
CHROMIUM (III) OXIDE (CAS 1308-38-9)	TWA	0.5 mg/m3	
Titanium Dioxide (CAS 13463-67-7)	TWA	10 mg/m3	

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
ALPHA-ALUMINA (CAS 1344-28-1)	TWA	10 mg/m3

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Components	Type	Value
CHROMIUM (III) OXIDE (CAS 1308-38-9)	TWA	0.5 mg/m3
Titanium Dioxide (CAS 13463-67-7)	TWA	10 mg/m3

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value	Form
ALPHA-ALUMINA (CAS 1344-28-1)	TWA	1 mg/m3	Respirable.
CHROMIUM (III) OXIDE (CAS 1308-38-9)	TWA	0.5 mg/m3	
Titanium Dioxide (CAS 13463-67-7)	TWA	3 mg/m3	Respirable fraction.
		10 mg/m3	Total dust.

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value	Form
ALPHA-ALUMINA (CAS 1344-28-1)	TWA	1 mg/m3	Respirable fraction.
CHROMIUM (III) OXIDE (CAS 1308-38-9)	TWA	0.5 mg/m3	
Titanium Dioxide (CAS 13463-67-7)	TWA	10 mg/m3	

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value	Form
ALPHA-ALUMINA (CAS 1344-28-1)	TWA	1 mg/m3	Respirable fraction.
CHROMIUM (III) OXIDE (CAS 1308-38-9)	TWA	0.5 mg/m3	
Titanium Dioxide (CAS 13463-67-7)	TWA	10 mg/m3	

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value	Form
ALPHA-ALUMINA (CAS 1344-28-1)	TWA	10 mg/m3	Total dust.
Titanium Dioxide (CAS 13463-67-7)	TWA	10 mg/m3	Total dust.

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

Components	Type	Value	Form
ALPHA-ALUMINA (CAS 1344-28-1)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
CHROMIUM (III) OXIDE (CAS 1308-38-9)	PEL	0.5 mg/m3	
Titanium Dioxide (CAS 13463-67-7)	PEL	15 mg/m3	Total dust.

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.

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. Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn.
Personal protective equipment	
Eye / face protection	Use tight fitting goggles if dust is generated.
Skin protection	Wear appropriate chemical resistant clothing. Wear protective 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.

9. Physical & Chemical Properties

Appearance	Solid.
Physical state	Solid.
Form	Powder.
Color	Not available.
Odor	Not available.
Odor threshold	Not available.
pH	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Boiling point	Not available.
Melting point/Freezing point	Not available.
Solubility (water)	Not available.
Specific gravity	Not available.
Relative density	Not available.
Flash point	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Auto-ignition temperature	Not available.

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Contact with incompatible materials. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). 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	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.

Hazardous decomposition products Not available.

11. Toxicological Information

Local effects Inhalation of dusts may cause respiratory irritation.

Chronic effects Hazardous by WHMIS criteria. Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

Carcinogenicity Hazardous by WHMIS criteria. Cancer hazard.

ACGIH Carcinogens

ALPHA-ALUMINA (CAS 1344-28-1)	A4 Not classifiable as a human carcinogen.
CHROMIUM (III) OXIDE (CAS 1308-38-9)	A4 Not classifiable as a human carcinogen.
Titanium Dioxide (CAS 13463-67-7)	A4 Not classifiable as a human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

CHROMIUM (III) OXIDE (CAS 1308-38-9)	3 Not classifiable as to carcinogenicity to humans.
CHROMIUM III COMPOUNDS (CAS 1308-31-2)	3 Not classifiable as to carcinogenicity to humans.
Titanium Dioxide (CAS 13463-67-7)	2B Possibly carcinogenic to humans.

12. Ecological Information

Ecotoxicity Components of this product are hazardous to aquatic life.

Environmental effects Harmful to aquatic organisms. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Persistence and degradability Not available.

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.

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.

14. Transport Information

TDG

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. Regulatory Information

Canadian regulations This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS status Controlled

WHMIS classification D2A - Other Toxic Effects-VERY TOXIC

WHMIS labeling



Inventory status

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

Country(s) or region	Inventory name	On inventory (yes/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)	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	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

HMIS® ratings

Health: 2*
 Flammability: 0
 Physical hazard: 0

NFPA ratings

Health: 2
 Flammability: 0
 Instability: 0

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.