MATERIAL SAFETY DATA SHEET (MSDS)

SECTION 1. IDENTIFICATION

Opaque Product Identifier: 5 MICRON C5
Chemical Name: Zirconium Silicate
Recommended Applications: Used singularly or as a component in ceramics, refractories, investment casting and high temperature coatings.

Synonyms: Zircopaque ®
Manufacturer Information: OPAQUE CERAMICS PVT.LTD.
Block A-207,Navratna Corporate Park,
Opp.Dishman Corporate House,
Ambli Bopal Road,Ambli 380058
Ahmedabad,Gujarat

Website: www.opaqueceramics.com

CHEMICAL EMERGENCY +91 9313805633

NFPA

HMIS

SECTION 2. HAZARDS IDENTIFICATION

Pictogram:

Signal word: WARNING

GHS classification:
Eye irritation, Category 2
Skin irritation, Category 2

Hazard Statement:
Inert particles can be slightly, mechanically irritating to the eyes.
Prolonged skin contact may cause skin irritation or dermatitis.
Overexposure by inhalation may cause respiratory irritation.

Precautionary Statement:
Wash hands thoroughly after handling. Minimize exposure by wearing protective gloves, clothing, eye protection and respiratory masks. Have a clean change of works clothes readily available. Avoid dust formation and utilize good housekeeping practices.

Route of Exposure: Eyes, skin, inhalation and ingestion.

Potential Health Effects:

Eye: May cause a slight irritation.
Skin: May cause a slight irritation.
Inhalation: Prolonged inhalation may cause respiratory tract irritations.
Ingestion: May irritate digestive tract if swallowed.

Chronic toxicity:
Excessive inhalation of dust may cause chemical pneumonitis, cyanosis, and pulmonary edema. This product contains amorphous silica. Overexposure by inhalation of respirable dust may cause respiratory problems including pneumoconiosis. This product contains trace quantities (130 to 145 pCi/g) of naturally occurring Uranium and Thorium. Overexposure by inhalation of respirable dust containing these radioactive elements may cause lung cancer. This product contains zirconium dioxide and it has been reported

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

	CAS-No	EC number	Weight %	OSHA	ACGIH
Zirconium Silicate	14940-68-2	215-227-2	95 - 99%	5 mg/m^3 TWA as Zr	10 mg/m^3 STEL as Zr 5 mg/m^3
Kyanite	1302-76-7	215-106-4	1 - 5%	Not established	Not established
Quartz silica	14808-60-7	238-878-4	0.1 - 0.5%	30 mg/m^3 / (%SiO2 +2) Total Dust 10 mg/m^3 / (%SiO2 + 2) Respirable	0.05 mg/m^3 TWA

OSHA particulate (not otherwise regulated) limit: 5 mg/m^3 (respirable); 15 mg/m^3 (total).

This product contains trace quantities of naturally occurring radioactive uranium, thorium and radium (<0.042% total). Overexposure by inhalation to respirable dusts containing uranium, thorium and radium may cause cancer, however, observance of the OSHA limit for respirable dusts of 5 mg/m3 will ensure the use of this product to be well below the regulatory limits established for these components.

Methods for cleaning up: Use approved industrial vacuum cleaner for removal. Wear personal protective equipment. Dispose of promptly

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SECTION 4. FIRST AID MEASURES

Eye contact: *Rinse eyes immediately with plenty of water on eye surfaces and under eyelids. Get medical attention if irritation develops.*
Skin contact: *Wash off immediately with soap and plenty of water. Remove and wash contaminated clothing before re-use. If symptoms persist, call a physician.*
Inhalation: *Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. If symptoms persist, call a physician.*
Ingestion: *Drink plenty of water. Consult a physician if necessary. Do not induce vomiting without medical advice.*
Notes to physician: *Treat symptomatically.*

SECTION 5. FIRE-FIGHTING MEASURES

Flash point: *No data available*
Suitable extinguishing media: *Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.*
Hazardous decomposition products: *Thermal decomposition can lead to release of irritating gases and vapors.*

Special protective equipment for firefighters: *As in any fire, wear self-contained breathing apparatus pressure-demand, NIOSH (approved or equivalent) and full protective gear.*

Unusual hazards: *Avoid dust formation.*

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions: *Avoid dust formation. Evacuate area of all unnecessary personnel. Avoid contact with skin, eyes and clothing. Use personal protective equipment.*

Environmental precautions: *Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Do not flush into surface water or sanitary sewer system.*

Methods for cleaning up: *Use approved industrial vacuum cleaner for removal. Wear personal protective equipment. Dispose of promptly*

SECTION 7. HANDLING AND STORAGE

Handling: *Handle in accordance with good industrial hygiene and safety practice. Avoid dust formation. Avoid contact with skin, eyes and clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Provide appropriate exhaust ventilation at places where dust is formed. Remove all sources of ignition. Wash hands thoroughly before eating, drinking or smoking.*

Storage: *Keep container tightly closed in a dry and well-ventilated place.*

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: *Ensure adequate ventilation, especially in confined areas. Airborne dust levels should be controlled by physical enclosure during abrasive blasting operation. Refer to 29 CFR 1910.94 Ventilation (a) Abrasive Blasting. Ensure that eyewash stations and safety showers are proximal to the work-station location.*

Respiratory protection: *Use NIOSH approved respirator when ventilation is inadequate. Wear NIOSH approved respirator to limit exposure to NORM. Use a HEPA-filtered approved for radionuclides where airborne concentrations are expected to exceed exposure limits. Use a supplied-air respirator if there is any potential for an uncontrolled release, exposure levels are not known, or where air purifying respirators may not provide adequate protection. OSHA requires a continuous flow air-line supplied respirator with hood for protection in abrasive blasting operations. Refer to OSHA Standards 29 CFR 1910.94.*

Hand protection: *Impervious gloves*

Skin and body protection: *Lightweight protective clothing. Chemical-resistant gloves and impermeable body covering to minimize skin contact. Contaminated work clothing should not be allowed out of the workplace. Keep working clothes separately. Remove and wash contaminated clothing before re-use.*
Eye protection: *Safety glasses with side-shields.*
Exposure limits: *See Section 3.*

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Color: Off White	**Odor threshold: No data available**
Odor: Odorless	**Vapor pressure: No data available**
Boiling point/range (°C): No data available	**Flash point: No data available**
Melting point/range (°C): 2100 - 2300	**Flammability (solid, gas): No data available**
Vapor pressure (mmHg): No data available	**Upper/lower flammability or explosive limits: No data available**
Water solubility (mg/l): Insoluble	**Vapor density: No data available**
Physical state: Powder	**Relative density: No data available**
Molecular weight: No data available	**Partition coefficient: n-octanol/water: No data available**
pH: No data available	**Auto-ignition temperature: No data available**
Specific gravity (Water =1): 4.7	**Decomposition temperature: No data available**
Evaporation rate (Water =1): No data available	**Viscosity: No data available**
VOC content (%): No data available	

SECTION 10. STABILITY AND REACTIVITY

Stability: *Stable at normal conditions.*
Polymerization: *Will not occur.*
Hazardous decomposition products: *None under normal use.*
Materials to avoid: *None known.*
Conditions to avoid: *Avoid dust formation.*

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SECTION 11. TOXICOLOGICAL INFORMATION

Chronic toxicity: *Contains crystalline silica which causes silicosis and lung cancer.*

Carcinogenic effects: *Respirable crystalline silica has been classified as a Group I (sufficient evidence in humans for carcinogenicity) carcinogenic by IARC and is listed by NTP as a substance which may reasonably be anticipated to be a carcinogen. Crystalline silica is also a known cause of silicosis, a non-cancerous lung disease caused by excessive exposure to crystalline silica. Listed by IARC, NTP and OSHA as a carcinogen.*

Target Organ Effects:

Silica: Respiratory system

Zirconium: Skin, respiratory system.

Zirconium Silicate

ACGIH - Carcinogens: *A4 - Not Classifiable as a Human Carcinogen*

A4 - Not Classifiable as a Human Carcinogen (as Zr)

Quartz Silica

ACGIH - Carcinogens: *A2 - Suspected Human Carcinogen*

OSHA - Select Carcinogens: *Present*

NTP: Known Carcinogen

IARC - Group 1: *Monograph 68, 1997 (inhaled in the form of quartz or cristobalite from occupational sources)*

SECTION 12. ECOLOGICAL INFORMATION

Aquatic toxicity: *No information available.*

Persistence and degradability: *No information available.*

SECTION 13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products: Waste must be disposed of in accordance with federal, state and local environmental control regulations. Where possible recycling is preferred to disposal or incineration. This product contains Naturally Occurring Radioactive Materials (NORM). Consult and comply with current regulations.

SECTION 14. TRANSPORT INFORMATION

The Product is not Dangerous under current provisions of the code of International carriage of dangerous Goods by Road (ADR) and by Rail (RID),of the International Maritime Dangerous Goods Code (IMDG), and of the International Air Transport Association (IATA) regulations.

SECTION 15. REGULATORY INFORMATION

Seveso category: None

Restrictions relating to the product or contained substances pursuant to annex XVII to EC Regulation 1907/2006: None

Substances in Candidate list (Art. 59 REACH)

Substances subject to authorization (Annex XIV REACH)

No chemical safety assessment has been processed for the mixture and the substances it contains.

SECTION 16. OTHER INFORMATION

For Industrial Use Only

National Fire Protection Association (India):

Health: 1

Fire: 0

Physical Hazard: 0

PPE: X

Prepared by: Product Manufacturer, Opaque Ceramics Pvt. Ltd.

Protective Equipment: Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Safety glasses.

The information and recommendations contained in this Safety Data Sheet have been compiled from sources believed to be reliable and to represent the most reasonable current opinion on the subject when the SDS was prepared. No warranty, guaranty or representation is made as to the correctness or sufficiency of the information. The user of this product must decide what safety measures are necessary to safely use this product, either alone or in combination with other products, and determine its environmental regulatory compliance obligations under any applicable federal or state laws.

End of Safety Data Sheet

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