

## ZIRCONIUM CHLORIDE SOLUTION

### 1. IDENTIFICATION OF MATERIAL AND SUPPLIER

#### Product Identification

Product Name Zirconium Chloride Solution

Other Names ZOCL, Zirconium Oxychloride Solution

Recommended Uses **Production of Refractories, Abrasives and Ceramics.**

#### Supplier Identification

Company Doral Fused Materials Pty. Ltd.  
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### 2. HAZARD IDENTIFICATION

Risk Phases (R-Phrases) None

Safety Phrases (S-Phrases) None

UN Number 1760

Class and Subsidiary Risk 8

Hazchem Code 2R

Poisons Schedule Number S6

#### Potential Health Effects

##### Acute

Swallowed: Swallowing can result in dental erosion, burns of the mouth, throat and abdomen; nausea, vomiting of blood and eroded tissue; perforation of gastrointestinal tract.

Eye: Corrosive to the eyes; contact can cause corneal burns. Contamination of eyes can result in permanent injury.

Skin: Corrosive to skin - can cause skin burns. Repeated or prolonged skin contact may lead to irritant contact dermatitis.

Inhaled: Inhalation of mists or aerosols can cause irritation to mucous membranes and respiratory tract.

##### Chronic

No information available for this product.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients (typical)	CAS Number	Proportion % (wt)
Zirconium Oxide (ZrO <sub>2</sub> )	1314-23-4	10-15
Hydrochloric Acid	7647-01-1	20

### 4. FIRST AID MEASURES

Swallowed Immediately rinse mouth with water. Give water to drink. Do **NOT** induce vomiting. If vomiting occurs, give further water. Seek immediate medical assistance.

Eyes Immediately irrigate with copious quantities of water for at least 15 minutes. Eyelids to be held open. Remove clothing if contaminated and wash skin. Urgently seek medical assistance. Transport to hospital or medical centre.

Skin Immediately wipe from skin. Wash contaminated skin with plenty of water. Remove contaminated clothing and wash before re-use. If swelling, redness, blistering or irritation occurs seek medical advice. No attempt should be made to neutralise burns with alkaline solutions.

Inhaled Remove victim from exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. If breathing is laboured and patient cyanotic (blue), ensure airways are clear and have qualified person give

oxygen through a face mask. If breathing has stopped, apply artificial respiration at once. In event of cardiac arrest, apply external cardiac massage. Seek medical advice.

First Aid Facilities  
Advise to Physician

No special requirements.  
Treat symptomatically and as for exposure to acidic corrosive substances.

## 5. FIRE FIGHTING MEASURES

Flashpoint	None.
Flammability Limits	Non-flammable or combustible.
General Hazard	This product is not flammable and does not support combustion. If involved in a fire, toxic fumes including hydrogen chloride and hydrogen may be emitted. Fire fighters to wear self-contained breathing apparatus if risk of exposure to products of decomposition.
Extinguishing Media	Use media suitable for the material that is burning.

## 6. ACCIDENTAL RELEASE MEASURES

Spills and disposal	Wear protective equipment to prevent skin and eye contamination and inhalation of vapours. Contain using sand or soil - prevent run off into drains and waterways. Use absorbent (soil, sand, vermiculite or other inert material). Collect and transfer to properly labeled containers for disposal. Any disposal to an approved landfill site and cover with clean fill shall be conducted in accordance with State/Local Council regulations.
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## 7. HANDLING AND STORAGE

Handling	Wear protective equipment to prevent skin and eye contamination and inhalation of vapours. Wash thoroughly after handling. If handling it is advisable to also use gloves and wash hands before eating, drinking or smoking to minimise inhalation or ingestion from hands.
Storage	Classified as an 8 (CORROSIVE) Dangerous Substance for the purpose of transport. Refer to relevant regulations for storage and transport requirements. Not to be loaded with explosives (Class 1), dangerous when wet substances (Class 4.3), oxidising agents (Class 5), cyanides (Class 6), radioactive substances (Class 7), or foodstuff and foodstuff empties. This material is a Scheduled Poison (S6) and must be stored, maintained and used in accordance with the relevant regulations. Store away from oxidising agents, cyanides, and foodstuffs. Keep containers closed at all times - check regularly for leaks.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Standards:

<b>Chemical Name</b>	<b>CAS Number</b>	<b>Proportion (wt/v %)</b>	<b>ASCC TWA</b>	<b>ACGIH TLV</b>
Zirconium Dioxide (as Zr)	1314-23-4	10-15	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>
Hydrochloric Acid	7647-01-1	20	7.5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>

Engineering Controls	Ensure ventilation is adequate to maintain air concentrations below Exposure Standard. Avoid inhaling mists or aerosols. Use with local exhaust ventilation or while wearing acid mist respirator. Keep containers closed when not in use.
Personal Protection	PVC suit, rubber boots, face shields and gloves must be worn. Avoid eye and repeated or prolonged skin contact, and inhalation of mists or aerosols. Wear PVC suit, face shield, elbow-length impervious gloves and rubber boots. If risk of inhalation of spray mists exists, wear respirator meeting the requirements of AS1715 and AS1716. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (form)	Colourless to yellow liquid with acid odour.
Chemical Formula	ZrOCl <sub>2</sub>
Boiling Point	Not Available
Melting Point	Not Available
Vapour Pressure	Not Available
Evaporation Rate	Not Available
Specific Gravity (H <sub>2</sub> O = 1)	1.25
Solubility in Water	Miscible with water and alcohol with evolution of heat.
pH	< 1
Bulk Density:	<b>Not Applicable</b>

