



CX4 COROCOAT Heavy Zinc Silicate Coating

MATERIAL SAFETY DATA SHEET

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Substance/preparation and company identification

Warrior Pte Ltd

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Composition/information on ingredients

INGREDIENTS	PERCENTAGE (%)	RISK PHRASES	SAFETY PHRASES	CAS NUMBER
Liquid - Inorganic Binder	45±1		N.A.	N.A.
	0.3 max		N.A.	N.A.
Powder- Zinc Compound	2.0		N.A	7440-66-6

Hazard identification

- Non-flammable
- Non-toxic
- Zinc dust: Slightly hazardous in case of skin contact (irritant), eye contact (irritant), ingestion, or inhalation.

First-aid measures

General advice:

- Remove contaminated clothing.

If inhaled:

- Keep patient calm, remove to fresh air, seek medical attention.

On skin contact:

- Wash thoroughly with soap and water.

Fire-fighting measures

- **Powder part, Zinc dust:** Flammable. Auto-Ignition Temperature: 460°C (860°F)
- **Liquid part:** Suitable extinguishing media: water spray, dry extinguishing media, foam, carbon dioxide
- Special Hazard: Aqueous dispersion of polymers will not burn. If the temperature exceeds the boiling point of the aqueous phase (c. 100°C) then splattering may occur.

Accidental release measures

Personal Precaution:

- Appropriate protective equipment must be worn when handling a spill of this material.



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Methods for cleaning up or removing:

- For small amounts: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder). Dispose of absorbed material in accordance with regulations.
- For large amounts: Pump off product.
- For residues: Rinse away with water.

Powder part, Zinc dust Large Spillage:

- Flammable solid that, in contact with water, emits flammable gases. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Cover with dry earth, sand or other non-combustible material. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal.

Handling and storage

- Use with adequate ventilation. Avoid breathing vapors in top of shipping container. Avoid contact with skin and clothing. Wash thoroughly after handling.

Storage:

- Keep container closed when not in use.
- Powder part, Zinc dust

Precautions: Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not breathe dust. Keep away from incompatibles such as oxidizing agents, acids, alkalis, and moisture. Storage: MOISTURE SENSITIVE. Keep container tightly closed. Keep container in a cool, well-ventilated area. Keep from any possible contact with water. Do not allow water to get into container because of violent reaction. Do not store above 23°C (73.4°F).

Exposure Controls/Personal Protection (Power part, Zinc dust)

Engineering Controls: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses, gloves, lab coat and dust respirator. Be sure to use an approved/certified respirator or equivalent.

Personal Protection in Case of a Large Spill: Splash goggles, full suit, dust respirator, boots and gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Special Remarks on Explosion Hazards: Material in powder form is capable of creating a dust explosion when mixed with air. Hydroxylamine is reduced when heated with zinc dust. Sometimes the mixture merely ignites, other times it explodes. Zinc powder reacts explosively when heated with Manganese Chloride. Powdered Zinc can decompose performic acid violently, causing an explosion if heated. Interaction on heating powdered zinc and sulfur is considered to be too violent.



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Exposure controls and personal protection

- Occupational Exposure Limit (OEL): None established. Only applicable to trace components.
- Respiratory protection: None is required in well ventilated areas but if spraying applications are involved appropriate mechanical extraction should be employed.
- Skin Protection: Gloves of impervious type.
- Eye Protection: Safety Glasses.
- Other protective equipment: Eye wash, emergency shower.

Physical and chemical properties (Liquid Part)

- Physical form: Liquid
- Appearance: Clear Solution
- Viscosity @ 25°C, cps: 2000 max (Brookfield, 3/60)
- pH: 8.0 - 9.5
- Boiling point / range: Approx. 100°C
- Solubility in Water: Dispersible
- Vapour Pressure: 1 mmHg (Water)
- Vapour Density: Approx. equal water (Air = 1)
- Specific Gravity @ 25°C 1.0 min
- % Volatile (by Weight) 5 ±1
- Evaporation Rate: Approx. equal water

Physical and chemical properties (Powder part, Zinc Compound)

- Physical state and appearance: Liquid & Powder
- Odor: None
- Taste: None
- Molecular Weight: 65.39 g/mole
- Color: Bluish-white. Grey.
- pH (1% soln/water): Not applicable.
- Boiling Point: 907°C (1664.6°F)
- Melting Point: 419°C (786.2°F) Critical Temperature: Not available.
- Specific Gravity: 7.14 (Water = 1)

Stability and Reactivity (Liquid part)

- Conditions to Avoid: None.
- Materials to Avoid: None.
- Instability: The materials is considered stable. Avoid temperature above 177°C, the onset of polymer decomposition. Thermal decomposition is dependent on time and temperature.
- Hazardous Polymerization: Product will not undergo polymerization.
- Hazardous Decomposition products: Carbon Monoxide and/or Carbon Dioxide



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Stability and Reactivity (Power part, Zinc Compound)

- **Conditions of Instability:** Excess heat, excess dust generation, ignition sources, moisture, incompatible materials
- **Incompatibility with various substances:** Reactive with oxidizing agents, acids, alkalis. Slightly reactive to reactive with moisture. The product reacts violently with water to emit flammable but non-toxic gases.
- **Special Remarks on Reactivity:** MOISTURE SENSITIVE. Incompatible with acids, halogenated hydrocarbons, NH_4NO_3 , barium oxide, $\text{Ba}(\text{NO}_3)_2$, Cadmium, CS_2 , chlorates, Cl_2 , CrO_3 , F_2 , Hydroxylamine, $\text{Pb}(\text{N}_3)_2$, MnCl_2 , HNO_3 , performic acid, KClO_3 , KNO_3 , N_2O_2 , Selenium, NaClO_3 , Na_2O_2 , Sulfur, Te, water, $(\text{NH}_4)_2\text{S}$, As_2O_3 , CS_2 , CaCl_2 , chlorinated rubber, catalytic metals, halocarbons, onitroanisole, nitrobenzene, nonmetals, oxidants, paint primer base, pentacarbonyliron, transition metal halides. selenenyl bromide, HCl , H_2SO_4 , $(\text{Mg} + \text{Ba}(\text{NO}_3)_2 + \text{BaO}_2)$, (ethyl acetoacetate+tribromo neopentyl alcohol. Contact with Alkali Hydroxides (Sodium Hydroxide, Potassium Hydroxide, Calcium Hydroxide, etc) results in evolution of hydrogen. Ammonium nitrate + zinc + water causes a violent reaction with evolution of steam and zinc oxide. A violent reaction or flaming is likely in the reaction of chromic anhydride and zinc dust. May react vigorously or explosive with water

Toxicological Information (Liquid part)

- Acute Toxicological information: Information on analogous product shows minimal toxicity information.
- Other Toxicological information: Information on analogous product shows minimal toxicity information.
- Additional information: Not applicable.

Toxicological Information (Powder part, Zinc dust)

Other Toxic Effects on Humans: Slightly hazardous in case of skin contact (irritant), or ingestion/inhalation

Special Remarks on other Toxic Effects on Humans: Acute Potential Health Effects: Skin: May cause skin irritation. Dermal exposure to zinc may produce leg pains, fatigue, anorexia, and weight loss. Eyes: May cause eye irritation. Ingestion: May be harmful if swallowed. May cause digestive tract irritation with tightness in throat, nausea, vomiting, diarrhea, malaise, loss of appetite, abdominal pain. fever, and chills. May affect behavior/central nervous system and autonomic nervous system with ataxia, lethargy, staggering gait, mild derangement in cerebellar function, light headiness, dizziness, irritability, muscular stiffness, and pain. May also affect blood. Inhalation: Inhalation of zinc dust or fumes may cause respiratory tract and mucous membrane irritation with cough and chest pain. It can also cause "metal fume fever", a flu-like condition characterized appearance of chills, headache fever, malaise, fatigue, sweating, extreme thirst, aches in the legs and chest, and difficulty in breathing. A sweet taste may also be present in metal fume fever, as well as a dry throat, aches, nausea, and vomiting, and pale grey cyanosis.

Ecological Information (Liquid part)

- Persistence and degradability: Non-biodegradable.
- Environmental Risk: Not toxic to fish plants.
- Additional information: Does not inhibit bacteria in waste treatment facilities.



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Ecological Information (Powder part, Zinc Compound)

Products of Biodegradation: Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation:

The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation: Not available.

Disposal Considerations

Incinerate or land fill in accordance with local regulations.

Transport Information

- **Domestic transport:** Not classified as a dangerous good under transport regulations).
- **Sea transport:** IMDG (Not classified as a dangerous good under transport regulations).
- **Air transport:** IATA/ICAO (Not classified as a dangerous good under transport regulations).
- **Powder part, Zinc dust:** DOT Classification: CLASS 4.2: Spontaneously combustible substance.
CLASS 4.3: Dangerous when wet material.

Regulatory Information

- All other national and local regulations, if applicable to the use, transport or disposal of this product, should be observed.

Other Information

- Any other intended applications should be discussed with the manufacturer.
- If you have any queries relating to this MSDS, its contents or any other product safety related questions, please write to the following e-mail address: war99@singnet.com.sg
- The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. The data do not describe the product's properties (product specification). Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.