

# Material Safety Data Sheet

Material Name: Preact® RVF

ID: CSI-091

## \*\*\* Section 1 - Chemical Product and Company Identification \*\*\*

**Chemical Name:** Inorganic Salt Mixture

**Product Use:** Various Industrial Applications

**Manufactured By:**

Mineral Research and Development, Inc.  
5910 Pharr Mill Road  
Harrisburg, NC 28075

Phone: 704-454-4811

Fax: 704-454-7390

Emergency # CHEMTREC: (800) 424-9300

## \*\*\* Section 2 - Composition / Information on Ingredients \*\*\*

CAS #	Component	Percent
7646-85-7	Zinc chloride	40-45
12125-02-9	Ammonium chloride	40-45
7647-14-5	Sodium chloride	5-10
7447-40-7	Potassium chloride	5-10
Proprietary	Foaming Agent	0.5-1.5

### Component Information/Information on Non-Hazardous Components

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication). This product is considered a controlled product under the Canadian Controlled Products Act.

## \*\*\* Section 3 - Hazards Identification \*\*\*

### Emergency Overview

Product is a white, odorless granular solid. May cause severe irritation or burns to the eyes, skin, gastrointestinal tract, and respiratory system. May cause skin sensitization. Product is non-flammable and non-reactive.

### Potential Health Effects: Eyes

Overexposure will cause irritation or burns, depending on duration, pain, redness, and may result in blindness.

### Potential Health Effects: Skin

This product may be severely irritating to the skin or cause burns, depending on duration of exposure. Prolonged or repeated skin contact may result in redness, burning sensation or dermatitis. May cause skin sensitization.

### Potential Health Effects: Ingestion

Ingestion may produce irritation and burns of the gastrointestinal tract and gastrointestinal disturbances including irritation, nausea, and diarrhea. Ingestion of large amounts may be fatal.

### Potential Health Effects: Inhalation

This product is irritating to the respiratory system. Damage to the tissues of the respiratory system may occur. Excessive inhalation of this product may cause headache, dizziness, blurred vision, nausea and vomiting. Severe inhalation can lead to pulmonary edema, pneumonitis and death. Inhalation of Zinc Chloride fumes may cause metal fume fever with resulting flu-like symptoms.

**HMIS Ratings: Health: 2 Fire: 0 Physical Hazard: 0 Pers. Prot.:** Gloves, Goggles, Face Shield, Apron

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe \* = Chronic hazard

## \*\*\* Section 4 - First Aid Measures \*\*\*

### First Aid: Eyes

Immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical attention or advice.

### First Aid: Skin

For skin contact flush with large amounts of water. Immediately take off all contaminated clothing. Wash contaminated clothing before reuse. Call a physician immediately.

### First Aid: Ingestion

Do not induce vomiting. Call a physician immediately.

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## First Aid: Inhalation

If inhaled, immediately remove the affected person to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, have trained personnel give oxygen to the victim. Call a physician immediately.

## First Aid: Notes to Physician

Be observant for signs of pulmonary edema in the event of severe inhalation overexposures.

## \*\*\* Section 5 - Fire Fighting Measures \*\*\*

Flash Point: NA

Upper Flammable Limit (UFL): NA

Auto Ignition: NA

Rate of Burning: NA

### General Fire Hazards

Product is a negligible fire hazard.

### Hazardous Combustion Products

Zinc compounds, Hydrogen Chloride, Chlorine, Potassium compounds, Oxides of Sodium, Ammonia and acidic vapors.

### Extinguishing Media

Use methods for the surrounding fire.

### Fire Fighting Equipment/Instructions

Firefighters should wear full-face, self contained breathing apparatus and impervious protective clothing.

Firefighters should avoid inhaling any combustion products. If product is involved in a fire, fire run-off water should be contained to prevent possible environmental damage.

NFPA Ratings: Health: 2 Fire: 0 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

## \*\*\* Section 6 - Accidental Release Measures \*\*\*

### Containment Procedures

Stop the release of material, if this is without risk. Contain the discharged material.

### Clean-Up Procedures

Wear appropriate protective equipment and clothing during clean-up. Avoid the generation of dusts during clean-up. Sweep up or vacuum. Shovel material into appropriate container for disposal. If necessary, neutralize remaining area with sodium bicarbonate or other acid neutralizing agent and triple rinse with water. Do not allow the spilled product to enter public drainage system or open water courses.

### Evacuation Procedures

Isolate area. Keep unnecessary personnel away.

### Special Procedures

Do not allowed spilled product to contact with skin and eyes. Do not inhale dusts from the spilled material. Follow all Local, State, Federal and Provincial regulations for disposal.

## \*\*\* Section 7 - Handling and Storage \*\*\*

### Handling Procedures

Do not reuse the empty container. Do not get this material in your eyes, on your skin, or on your clothing. Do not breathe dust from this material. Wash hands after handling and before eating. Minimize dust formation.

### Storage Procedures

Properly label containers. Keep the container tightly closed and in a cool, well-ventilated place. Store away from direct sunlight, away from where freezing is possible and away from incompatible materials. Empty product containers may contain product residue. Do not reuse empty containers.

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## \*\*\* Section 8 - Exposure Controls / Personal Protection \*\*\*

### A: Component Exposure Limits

#### Zinc chloride (7646-85-7)

ACGIH:	1 mg/m3 TWA (fume)
	2 mg/m3 STEL (fume)
OSHA (Final):	1 mg/m3 TWA (fume)
OSHA (Vacated):	1 mg/m3 TWA
	2 mg/m3 STEL
NIOSH:	1 mg/m3 TWA (fume)
	2 mg/m3 STEL (fume)
Alberta:	1 mg/m3 TWA (fume)
	2 mg/m3 STEL (fume)
British Columbia:	1 mg/m3 TWA (fume)
	2 mg/m3 STEL (fume)
Manitoba:	1 mg/m3 TWA (fume)
	2 mg/m3 STEL (fume)
New Brunswick:	1 mg/m3 TWA (fume)
	2 mg/m3 STEL (fume)
NW Territories:	1 mg/m3 TWA (fume)
	2 mg/m3 STEL (fume)
Nova Scotia:	1 mg/m3 TWA (fume)
	2 mg/m3 STEL (fume)
Nunavut:	1 mg/m3 TWA (fume)
	2 mg/m3 STEL (fume)
Ontario:	1 mg/m3 TWAEV (fume)
	2 mg/m3 STEV (fume)
Quebec:	1 mg/m3 TWAEV (fume)
Saskatchewan:	1 mg/m3 TWA (fume)
	2 mg/m3 STEL (fume)
Yukon:	1 mg/m3 TWA (fume)
	2 mg/m3 STEL (fume)

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## Ammonium chloride (12125-02-9)

ACGIH:	10 mg/m3 TWA (fume) 20 mg/m3 STEL (fume)
OSHA (Vacated):	10 mg/m3 TWA 20 mg/m3 STEL
NIOSH:	10 mg/m3 TWA (fume) 20 mg/m3 STEL (fume)
Alberta:	10 mg/m3 TWA (fume) 20 mg/m3 STEL (fume)
British Columbia:	10 mg/m3 TWA (fume) 20 mg/m3 STEL (fume)
Manitoba:	10 mg/m3 TWA (fume) 20 mg/m3 STEL (fume)
New Brunswick:	10 mg/m3 TWA (fume) 20 mg/m3 STEL (fume)
NW Territories:	10 mg/m3 TWA (fume) 20 mg/m3 STEL (fume)
Nova Scotia:	10 mg/m3 TWA (fume) 20 mg/m3 STEL (fume)
Nunavut:	10 mg/m3 TWA (fume) 20 mg/m3 STEL (fume)
Ontario:	10 mg/m3 TWAEV (fume) 20 mg/m3 STEV (fume)
Quebec:	10 mg/m3 TWAEV (fume) 20 mg/m3 STEV (fume)
Saskatchewan:	10 mg/m3 TWA (fume) 20 mg/m3 STEL (fume)
Yukon:	10 mg/m3 TWA (fume) 20 mg/m3 STEL (fume)

## Foaming Agent (Proprietary)

ACGIH:	1 ppm TWA
OSHA (Final):	2 ppm TWA; 12 mg/m3 TWA
OSHA (Vacated):	1 ppm TWA; 6 mg/m3 TWA
NIOSH:	1 ppm TWA; 6 mg/m3 TWA
Alberta:	1 ppm TWA; 6.1 mg/m3 TWA
British Columbia:	Sensitizer 1 ppm TWA
Manitoba:	1 ppm TWA; 6 mg/m3 TWA
New Brunswick:	1 ppm TWA; 6.1 mg/m3 TWA
NW Territories:	1 ppm TWA; 6 mg/m3 TWA 4 ppm STEL; 24 mg/m3 STEL
Nova Scotia:	1 ppm TWA
Nunavut:	1 ppm TWA; 6 mg/m3 TWA 4 ppm STEL; 24 mg/m3 STEL
Ontario:	1 ppm TWAEV; 6 mg/m3 TWAEV
Quebec:	1 ppm TWAEV; 6.1 mg/m3 TWAEV
Saskatchewan:	6 mg/m3 TWA; 1 ppm TWA 12 mg/m3 STEL; 2 ppm STEL
Yukon:	1 ppm TWA; 6 mg/m3 TWA 4 ppm STEL; 24 mg/m3 STEL

## Engineering Controls

Ventilation should effectively remove and prevent buildup of any dust generated from the handling of this product.

## PERSONAL PROTECTIVE EQUIPMENT

### Personal Protective Equipment: Eyes/Face

Wear chemical goggles; face shield.

### Personal Protective Equipment: Skin

Use impervious gloves. Use of an impervious apron is recommended.

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## Personal Protective Equipment: Respiratory

If ventilation is not sufficient to effectively prevent buildup of dust, appropriate NIOSH respiratory protection must be provided.

## Personal Protective Equipment: General

Eye wash fountain and emergency showers are recommended.

## \*\*\* Section 9 - Physical & Chemical Properties \*\*\*

<b>Appearance:</b>	White, odorless granular solid.	<b>Odor:</b>	Odorless
<b>Physical State:</b>	Solid	<b>pH:</b>	3-4 (in water)
<b>Vapor Pressure:</b>	Approx. 0	<b>Vapor Density:</b>	<1.0
<b>Boiling Point:</b>	Not available	<b>Melting Point:</b>	Not available
<b>Solubility (H2O):</b>	Complete	<b>Specific Gravity:</b>	Not available

## \*\*\* Section 10 - Chemical Stability & Reactivity Information \*\*\*

### Chemical Stability

Stable under normal conditions.

### Chemical Stability: Conditions to Avoid

Extreme heat, incompatible materials.

### Incompatibility

Strong acids, strong oxidizing agents, strong alkalis, lead and silver salts, potassium chlorate, bromine trifluoride, bromine pentafluoride, ammonium compounds, nitrates, hydrogen cyanide, metals, coatings, plastics, rubber.  
Corrosive to metals.

### Hazardous Decomposition

Zinc compounds, Hydrogen Chloride, Chlorine, Potassium compounds, Oxides of Sodium, Ammonia and acidic vapors.

### Hazardous Polymerization

Will not occur.

## \*\*\* Section 11 - Toxicological Information \*\*\*

### Acute and Chronic Toxicity

#### A: General Product Information

Acute exposure can cause severe irritation and burns of the eyes, skin, gastrointestinal tract and respiratory tract.

Zinc chloride is an eye, skin and respiratory system irritant. Inhalation of zinc fumes may result in temporary metal fume fever. Other symptoms such as slight leukocytosis, respiratory disease and hypocalcemia have been reported from occupational exposure to zinc compounds.

#### B: Component Analysis - LD50/LC50

##### Zinc chloride (7646-85-7)

Oral LD50 Rat: 350 mg/kg

50 mg/m<sup>3</sup> IDLH (fume)

##### Ammonium chloride (12125-02-9)

Oral LD50 Rat: 1410 mg/kg

##### Sodium chloride (7647-14-5)

Inhalation LC50 Rat: >42 g/m<sup>3</sup>/1H; Oral LD50 Rat: 3 g/kg; Dermal LD50 Rabbit: >10 g/kg

##### Potassium chloride (7447-40-7)

Oral LD50 Rat: 2600 mg/kg

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## Foaming Agent (Proprietary)

Inhalation LC50 Rat: >0.21 mg/L/1H; Oral LD50 Rat: 800-1600 mg/kg; Oral LD50 Rat: 1530 mg/kg; Dermal LD50 Rabbit: >3160 mg/kg  
60 mg/m<sup>3</sup> IDLH

## Carcinogenicity

### A: General Product Information

No information available for the product.

### B: Component Carcinogenicity

#### Foaming Agent (Proprietary)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

## Chronic Toxicity

Prolonged or repeated skin contact may lead to dermatitis. May cause skin sensitization. Components may cause damage to the heart, respiratory system and kidney.

## \* \* \* Section 12 - Ecological Information \* \* \*

## Ecotoxicity

### A: General Product Information

Because of the high pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.

Ecotoxicity data provided by product manufacturer:

#### Zinc Chloride:

Acute hazard level threshold: Fish- 0.1ppm (Zn)

Odorless zinc poisoning causes inflamed gills in fish

Laboratory studies on Atlantic salmon, rainbow trout, carp and goldfish have shown avoidance reactions by these fish to zinc in water.

Water solubility: 432 g/ 100 mL (25°C), 614 g/ 100 mL (100°C). Zinc can persist indefinitely as a caution.

Radioactive zinc (65 Zn) has been found to concentrate in plants, milk, and aquatic life.

Acute Hazard Level Threshold: For vegetables and other crops - 750 ppm (Zn).

#### Potassium Chloride:

Water solubility = 34.2g/ 100 mL (20 C), 1 g/ 2.8 mL, 1 g/1.8 mL (boiling).

### B: Component Analysis - Ecotoxicity - Aquatic Toxicity

#### Ammonium chloride (12125-02-9)

Test & Species		Conditions
24 Hr LC50 Lepomis macrochirus	725 mg/L	
96 Hr LC50 Cyprinus carpio	209 mg/L	static
24 Hr EC50 water flea	202 mg/L	

#### Sodium chloride (7647-14-5)

Test & Species		Conditions
96 Hr LC50 Lepomis macrochirus	9675 mg/L	flow-through
96 Hr LC50 Lepomis macrochirus	12946 mg/L	static
96 Hr LC50 Pimephales promelas	7650 mg/L	static
48 Hr EC50 Daphnia magna	1000 mg/L	

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## Potassium chloride (7447-40-7)

### Test & Species

96 Hr LC50 Lepomis macrochirus	2010 mg/L
72 Hr EC50 Scenedesmus subspicatus	2500 mg/L
48 Hr EC50 Daphnia magna	825 mg/L

### Conditions

static

## Environmental Fate

No information available for the product.

## \*\*\* Section 13 - Disposal Considerations \*\*\*

### US EPA Waste Number & Descriptions

#### A: General Product Information

Wastes must be tested using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes.

### Disposal Instructions

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

## \*\*\* Section 14 - Transportation Information \*\*\*

### US DOT Information

**Shipping Name:** Corrosive solids, acidic, inorganic, n.o.s. (Zinc Chloride, Ammonium Chloride)

**UN/NA #:** UN3260 **Hazard Class:** 8 **Packing Group:** III

**Required Label(s):** CORROSIVE

### Canada Transportation of Dangerous Goods Information

**Shipping Name:** Corrosive solids, acidic, inorganic, n.o.s. (Zinc Chloride, Ammonium Chloride)

**UN/NA #:** UN3260 **Hazard Class:** 8 **Packing Group:** III

**Required Label(s):** CORROSIVE

## \*\*\* Section 15 - Regulatory Information \*\*\*

### US Federal Regulations

#### A: General Product Information

All components are on the U.S. EPA TSCA Inventory List.

#### B: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

#### Zinc chloride (7646-85-7)

CERCLA: 1000 lb final RQ; 454 kg final RQ

#### Ammonium chloride (12125-02-9)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

#### Foaming Agent (Proprietary)

SARA 313: 1.0 % de minimis concentration

CERCLA: 5000 lb final RQ; 2270 kg final RQ

#### C: Federal Insecticide, Fungicide, and Rodenticide Act

This material contains the following chemicals present on either the Listing of Pesticide Chemicals (40 CFR 180) or Pesticides Classified for Restricted Use as listed by FIFRA :

#### Ammonium chloride (12125-02-9)

FIFRA Section number 180.910; Section number 180.940

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**Sodium chloride (7647-14-5)**

FIFRA Section number 180.950

**Potassium chloride (7447-40-7)**

FIFRA Section number 180.950

**SARA 311/312: Acute Health Yes Chronic Health No Fire No Pressure No Reactive No**

**State Regulations**

**A: General Product Information**

Other state regulations may apply. Check individual state requirements.

**B: Component Analysis - State**

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
Zinc chloride	7646-85-7	Yes	Yes	Yes	Yes	Yes	Yes
Ammonium chloride	12125-02-9	Yes	Yes	Yes	Yes	Yes	Yes
Foaming Agent	Proprietary	Yes	Yes	Yes	Yes	Yes	Yes

**Canadian WHMIS Information**

**A: General Product Information**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all information required by CPR.

**B: Component Analysis - WHMIS IDL**

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
Zinc chloride	7646-85-7	1 %
Ammonium chloride	12125-02-9	1 %
Foaming Agent	Proprietary	0.1 %

**WHMIS Classification:**

Class E - Corrosive

Class D2A- Chronic Effects

**Additional Regulatory Information**

**A: General Product Information**

No additional information available.

**B: Component Analysis - Inventory**

Component	CAS #	TSCA	DSL	NDSL	EINECS	AUST	MITI	PHIL	KOREA	ELINCS	CHINA
Zinc chloride	7646-85-7	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes
Ammonium chloride	12125-02-9	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes
Sodium chloride	7647-14-5	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes
Potassium chloride	7447-40-7	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes
Foaming Agent	Proprietary	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes

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## \*\*\* Section 16 - Other Information \*\*\*

### Other Information

Disclaimer: Supplier gives no warranty of merchantability or of fitness for a particular purpose. Any product purchased is sold on the assumption the purchaser will make his own tests to determine the quality and suitability of the product. Supplier expressly disclaims any and all liability for incidental and/or consequential property damage arising out of the use of this product. No information provided shall be deemed to be a recommendation to use any product in conflict with any existing patent rights. Read the Material Safety Data Sheet before handling product.

### Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists; CAS = Chemical Abstracts Service; CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act; CFR = Code of Federal Regulations; CPR = Controlled Products Regulations; DOT = Department of Transportation; DSL = Domestic Substances List; EINECS = European Inventory of Existing Commercial Chemical Substances; EPA = Environmental Protection Agency; IARC = International Agency for Research on Cancer; IATA = International Air Transport Association; mg/Kg = milligrams per Kilogram; mg/L = milligrams per Liter; mg/m<sup>3</sup> = milligrams per Cubic Meter; MSHA = Mine Safety and Health Administration; NA = Not Applicable or Not Available; NIOSH = National Institute for Occupational Safety and Health; NJTSR = New Jersey Trade Secret Registry; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit; TDG = Transport Dangerous Goods; TSCA = Toxic Substances Control Act; WHMIS = Workplace Hazardous Materials Information System.

This is the end of MSDS # CSI-091