Safety Data Sheet

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

Product Identifier:
Preact ® RVF

Chemical Name
Inorganic Salt Mixture

Recommended Use
Various Industrial Applications

Manufacturer Information
MINERAL RESEARCH & DEVELOPMENT
5910 Pharr Mill Road
Harrisburg, NC 28075

Phone: 704-454-4811
FAX: 704-454-7390
CHEMTREC: (800) 424-9300
US and Canadian Shipping Only- 1-703-527-3887

General Comments
NOTE: Emergency telephone numbers are to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to customer service.

* * * Section 2 – Hazard Identification * * *

GHS Classification
Acute Toxicity, Oral- Category 4
Skin Corrosion- Category 1B
Serious Eye Damage/Eye Irritation- Category 1
Acute Aquatic Toxicity- Category 1
Chronic Aquatic Toxicity- Category 1

GHS Label Elements

Symbol(s)

Signal Word -
Danger

Hazard Statements
Causes skin burns.
Causes serious eye irritation.
Very toxic to aquatic life with long lasting effects.

Precautionary Statements

Prevention

Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep/Store away from clothing/combustible materials. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not eat, drink or smoke when using this product.

Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention. Specific treatment (see label). In case of fire: Use appropriate media for extinction.

Storage

Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

* * * Section 3 - Composition / Information on Ingredients * * *

CAS #	Component	Percent
12125-02-9	Ammonium Chloride	40 - 45
7646-85-7	Zinc chloride	40 - 48
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 hazardous under the criteria specified in the Canadian Workplace Hazardous Materials Information System (WHMIS).

* * * Section 4 - First Aid Measures * * *

Description of Necessary Measures

First Aid: Eyes

Immediately flush eyes with water for at least 15 minutes, while holding eyelids open. Seek medical attention at once.

First Aid: Skin

For skin contact flush with large amounts of water while removing contaminated clothing. Continue flushing skin with water for 15 minutes. Seek immediate medical attention. Contaminated leather articles, including shoes, that cannot be decontaminated should be discarded.

First Aid: Ingestion

If material is ingested, immediately contact a physician or poison control center. Do not induce vomiting. Never give anything by mouth to a victim who is unconscious or is having convulsions.

First Aid: Inhalation

If inhaled, immediately remove the affected person to fresh air. If the affected person is not breathing, have qualified personnel apply artificial respiration. Do NOT perform mouth-to-mouth resuscitation. Call a physician immediately.

First Aid: Notes to Physician

Provide general supportive measures and treat symptomatically.

* * * Section 5 - Fire Fighting Measures * * *

General Fire Hazards

Product is a negligible fire hazard.

Hazardous Combustion Products

Zinc compounds, Hydrogen Chloride, Ammonia, Nitrogen Oxides and Chlorine.

Extinguishing Media

Dry chemical, foam, carbon dioxide, water fog.

Fire Fighting Equipment/Instructions

This product is corrosive, and presents a severe contact hazard to fire-fighters. Fire fighters should wear full-face, self contained breathing apparatus and impervious protective clothing. Fire fighters should avoid inhaling any combustion products. If this 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 flow of material, if this is without risk. Wear appropriate protective equipment and clothing during clean up. Contain the discharged material and dike the spilled material where possible. Prevent entry into sewers, drains, underground or confined spaces, water intakes and waterways.

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

Isolate exposure. Wear appropriate personal protective equipment. Follow all Local, State, Federal and Provincial regulations for disposal.

* * * Section 7 - Handling and Storage * * *

Handling Procedures

Do not get this material in your eyes, on your skin, or on your clothing. Avoid breathing vapors or mists of this product. Wash thoroughly after handling. Do not eat, drink or use tobacco products when handling this material. Use this product with adequate ventilation. Launder work clothes frequently. See Section 8 for appropriate protective clothing, equipment and air monitoring procedures.

Open containers slowly, on a stable surface. Containers of this product must be properly labeled. Empty containers may contain residual liquid or vapors. Empty containers should be handled with care.

Storage Procedures

Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Store away from incompatible materials (see SECTION 10: Stability and Reactivity). Material should be stored in secondary containers, or in a diked area, as appropriate. Keep container tightly closed when not in use. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged.

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

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)

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)

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

Engineering Controls

Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes/Face

Wear safety glasses; chemical goggles (if splashing is possible).

Personal Protective Equipment: Skin

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

Personal Protective Equipment: Respiratory

Respiratory protection; not normally required for ambient air concentrations not exceeding the Occupational Exposure Limit. If ventilation is not sufficient to effectively prevent buildup of vapors or mists, appropriate approved NIOSH respiratory protection must be provided (i.e. air-purifying respirator with an ammonia cartridge). Respirators should be selected by and used under the direction of a trained health and safety professional following the requirements found in OSHA's respirator standard (29 CFR 1901.134) and ANSI's standard for respiratory protection (Z88.2-1992), applicable U.S. regulations, or the Canadian CSA Standard Z94.4-93 and applicable standards of Canadian Provinces. A written respiratory protection program, including provisions for medical certification, training, fit-testing, exposure assessments, maintenance, inspection, cleaning, and convenient, sanitary storage, must be implemented.

Personal Protective Equipment: General

Eyewash fountains and emergency showers are required. An emergency spill response will necessitate the use of more stringent personal protective equipment.

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

Appearance:	White, granular solid	**Odor:**	odorless
Physical State:	solid	**Odor Threshold:**	Not available
Vapor Pressure:	Approx. 0	**pH:**	3 to 4 (in water)
Vapor Density:	<1.0	**Specific Gravity:**	2.907 @ 15°C (59°F)
Boiling Point / Boiling Range:	Not available	**Evaporation Rate:**	Not available
Melting Point / Freezing Point:	Not available	**Relative Density:**	Not available
Solubility (H2O):	Complete	**Auto-ignition Temperature:**	Not available
Flash Point:	Not Flammable	**Decomposition Temperature:**	Not available
Upper Flammable Limit (UFL):	Not Applicable	**Lower Flammable Limit (LFL):**	Not Applicable
Viscosity:	Not available	**Partition Coefficient (n-octanol / water):**	Not available
Flammability:	Not available		

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

Chemical Stability

Stable under normal conditions.

Chemical Stability: Conditions to Avoid

Avoid contact with incompatible materials.

Incompatibility

This product is incompatible with strong bases, strong oxidizing agents, alkali metals and their carbonate, lead and silver salts. Corrosive to metals.

Hazardous Decomposition

Decomposition may yield zinc compounds, hydrogen chloride, ammonia, nitrogen oxides, and chlorine.

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

Water (7732-18-5)
Oral LD50 Rat: >90 mL/kg

Zinc chloride (7646-85-7)
Oral LD50 Rat: 350 mg/kg
50 mg/m3 IDLH (fume)

Ammonium chloride (12125-02-9)
Oral LD50 Rat: 1410 mg/kg

Carcinogenicity

A: General Product Information

No carcinogenicity data available for this product.

B: Component Carcinogenicity

Ammonium Chloride (12125-02-9)
Oral LD50 Rat: 1410 mg/kg

Zinc chloride (7646-85-7)
Oral LD50 Rat: 350 mg/kg
50 mg/m3 IDLH (fume)

Sodium chloride (7647-14-5)
Inhalation LC50 Rat: >42 g/m3/1H; Oral LD50 Rat: 3 g/kg; Dermal LD50 Rabbit: >10 g/kg

Potassium chloride (7447-40-7)

Oral LD50 Rat: 2600 mg/kg

Chronic Toxicity

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

* * * Section 12 - Ecological Information * * *

Ecotoxicity

A: General Product Information

Due to the acidic nature of this product, a release of this product in a river or other body of water (especially in large volumes) will kill fish and other aquatic life.

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	

Potassium chloride (7447-40-7)

Test & Species		Conditions
96 Hr LC50 Lepomis macrochirus	2010 mg/L	static
72 Hr EC50 Scenedesmus subspicatus	2500 mg/L	
48 Hr EC50 Daphnia magna	825 mg/L	

Environmental Fate

The components of this product are relatively stable under ambient, environmental conditions.

* * * 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.

B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

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
ERG: #154

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

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

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

Component Analysis - WHMIS IDL

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

Component	CAS #	Minimum Concentration
Ammonium Chloride	12125-02-9	1 %
Zinc chloride	7646-85-7	1 %

WHMIS Classification: E Corrosive

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
Ammonium Chloride	12125-02-9	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes
Zinc chloride	7646-85-7	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

* * * Section 16 - Other Information * * *

Summary of Changes

New SDS: 04/09/2015

Key / Legend

ACGIH = American Conference of Governmental Industrial Hygienists; **AU** = Australia; **BOD** - Biochemical Oxygen Demand; **C** - Celsius; **CA** - Canada; **CAS** = Chemical Abstracts Service; **CERCLA** = Comprehensive Environmental Response, Compensation, and Liability Act; **CFR** = Code of Federal Regulations; **CN** = China; **CPR** = Controlled Products Regulations; **DOT** = Department of Transportation; **DSL** = Domestic Substances List; **EINECS** = European Inventory of Existing Commercial Chemical Substances; **ELINCS** = European List of Notified Chemical Substances; **EmS** = Emergency Response Procedures for Ships Carrying Dangerous Goods; **EPA** = Environmental Protection Agency; **EU** = European Union; **F** - Fahrenheit; **HEPA** = High Efficiency Particulate Air; **HMIS** = Hazardous Material Information System; **HPV** – High Production Volume Chemical (EU); **IARC** = International Agency for Research on Cancer; **IATA** = International Air Transport Association; **ICL** – In Commerce List (Canada); **IDL** - Ingredient Disclosure List; **IDLH** - Immediately Dangerous to Life and Health; **JP** = Japan; **KR** = Korea; **LEL** - Lower Explosive Limit; **MITI** = Japan Ministry of International Trade and Industry; **mg/Kg** = milligrams per Kilogram; **mg/L** = milligrams per Liter; **mg/m^3** = milligrams per Cubic Meter; **MSHA** = Mine Safety and Health Administration; **NA** = Not Applicable or Not Available; **NFPA** = National Fire Protection Association; **NIOSH** = National Institute for Occupational Safety and Health; **NJTSR** = New Jersey Trade Secret Registry; **NDSL** = Non-Domestic Substances Inventory; **NTP** = National Toxicology Program; **NZ** = New Zealand; **OSHA** = Occupational Safety and Health Administration; **PH** = Philippines; **RCRA** = Resource Conversation &

Recovery Act; **RQ** = Reportable Quantity; **SARA** = Superfund Amendments and Reauthorization Act; **STEL** = Short Term Exposure Limit; **TDG** = Transport Dangerous Goods; **TSCA** = Toxic Substances Control Act; **TWA** - Time Weighted Average; **UEL** - Upper Explosive Limit; **US** - United States; **WHMIS** = Workplace Hazardous Materials Information System.

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 Safety Data Sheet before handling product.

End of Sheet MRD-217R