Revision Number: 003.6

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1. PRODUCT AND COMPANY IDENTIFICATION

Product name: **BONDERITE M-ZN 952 R Z ZINC PHOSPHATE REPLENISHER known as BONDERITE 952 REPLENISHING Z**

IDH number: 1695785

Product type/use: Conversion coating

Restriction of Use: None identified

Region: United States

Company address:
Henkel Corporation
One Henkel Way
Rocky Hill, Connecticut 06067

Contact information:
Telephone: +1 (860) 571-5100
MEDICAL EMERGENCY Phone: Poison Control Center
1-877-671-4608 (toll free) or 1-303-592-1711
TRANSPORT EMERGENCY Phone: CHEMTREC
1-800-424-9300 (toll free) or 1-703-527-3887
Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER**:** CONTAINS FLUORIDES. MAY CAUSE DELAYED BURNS (NOT IMMEDIATELY PAINFUL OR VISIBLE)! LONG TERM EXPOSURE TO FLUORIDES OVER YEARS MAY CAUSE FLUOROSIS!
MAY BE CORROSIVE TO METALS.
HARMFUL IF SWALLOWED OR IN CONTACT WITH SKIN.
CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.
MAY CAUSE AN ALLERGIC SKIN REACTION.
MAY CAUSE ALLERGY OR ASTHMA SYMPTOMS OR BREATHING DIFFICULTIES IF INHALED.
MAY CAUSE RESPIRATORY IRRITATION.
SUSPECTED OF CAUSING GENETIC DEFECTS.
MAY CAUSE CANCER.
MAY DAMAGE FERTILITY OR THE UNBORN CHILD.
CAUSES DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE.
MAY CAUSE DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE.

HAZARD CLASS	HAZARD CATEGORY
CORROSIVE TO METALS	1
ACUTE TOXICITY ORAL	4
ACUTE TOXICITY DERMAL	4
SKIN CORROSION	1C - Corrosive
SERIOUS EYE DAMAGE	1
RESPIRATORY SENSITIZATION	1
SKIN SENSITIZATION	1
GERM CELL MUTAGENICITY	2
CARCINOGENICITY	1A
REPRODUCTIVE TOXICITY	1B
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE	3
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE	1
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE	2

PICTOGRAM(S)

Precautionary Statements

Prevention:

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep only in original packaging. Do not breathe vapors, mist, or spray. Wash affected area thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves, clothing, eye and face protection. In case of inadequate ventilation wear respiratory protection.

Response:

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical attention. If skin irritation or rash occurs: Get medical attention. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.

Storage:

Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.

Disposal:

Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Percentage*
Zinc dihydrogen phosphate	13598-37-3	10 - 20
Manganese dihydrogen phosphate	18718-07-5	5 - 10
Phosphoric acid	7664-38-2	1 - 5
Zinc nitrate	7779-88-6	1 - 5
Nickel nitrate	13138-45-9	1 - 5
fluorosilicic acid	16961-83-4	0.1 - 1
Hydrogen fluoride	7664-39-3	0.1 - 1
Hydroxylamine sulfate	10039-54-0	0.1 - 1

* Exact percentages may vary or are trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

Inhalation:

If mist or vapor of this product is inhaled, remove person immediately to fresh air. Seek medical attention if symptoms develop or persist. If breathing is difficult, give oxygen. Trained personnel should administer 2.5% calcium gluconate through a nebulizer for 20 minutes.

Skin contact:

Remove contaminated clothing and footwear while rinsing the affected area with large amounts of running water for at least 15 minutes. GET IMMEDIATE MEDICAL ATTENTION. If iced solution of 0.13% aqueous Benzalkonium Chloride (Zephiran) or 2.5% calcium gluconate gel is available, rinsing may be limited to 5 minutes, with the soak solution or gel applied as soon as the rinsing is stopped. Gloves should be worn when applying the gel to prevent transfer of HF and secondary burns. If using calcium gluconate gel, it should be continuously re-applied and massaged into the affected area until pain has been relieved for at least 30 minutes. If Benzalkonium Chloride (Zephiran) or calcium gluconate gel is not available, rinsing must continue until medical treatment is provided.

Eye contact:	Immediately flush affected eye with large amounts of gently flowing water or 0.9% sterile saline solution for at least 15 minutes. Hold eyelid wide open. Get immediate medical attention. Eye flushing should continue during transportation to a doctor.
Ingestion:	Get immediate medical attention. Do not induce vomiting. Attempt immediate administration of a fluoride binding substance: milk, chewable calcium carbonate tablets or 4-8 ounces (120-240 ml) of milk of magnesia or a liquid antacid. Avoid large amounts of liquid as it may induce vomiting. Never give anything by mouth to an unconscious person.
Symptoms:	See Section 11.
Notes to physician:	Treatment of hypocalcemia associated with corrosive fluoride compounds exposure may be corrected by intravenous calcium gluconate or calcium chloride. Treatment of hypomagnesemia may be corrected by intravenous magnesium sulfate.

5. FIRE FIGHTING MEASURES

Extinguishing media:	Water spray (fog), foam, dry chemical or carbon dioxide.
Special firefighting procedures:	Wear full protective clothing. Wear self-contained breathing apparatus.
Unusual fire or explosion hazards:	May liberate large quantities of dense, foul-smelling smoke which may contain unidentified toxic gasses.
Hazardous combustion products:	Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons. Hydrogen fluoride.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions:	Prevent further leakage or spillage if safe to do so. Wear appropriate protective equipment and clothing during clean-up. Do not allow product to enter sewer or waterways.
Clean-up methods:	Absorb spill with inert material. Shovel material into appropriate container for disposal. Dispose of according to Federal, State and local governmental regulations.

7. HANDLING AND STORAGE

Handling:	Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Avoid breathing vapors or mists of this product. For industrial use only. Do not take internally.
Storage:	For safe storage, store at or above 4.4 °C (39.9 °F) Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials. Thaw and mix thoroughly if frozen.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Zinc dihydrogen phosphate	None	None	None	None
Manganese dihydrogen phosphate	0.02 mg/m3 TWA (as Mn) Respirable fraction. 0.1 mg/m3 TWA (as Mn) Inhalable fraction.	5 mg/m3 Ceiling (as Mn)	None	None
Phosphoric acid	3 mg/m3 STEL 1 mg/m3 TWA	1 mg/m3 PEL	None	None
Zinc nitrate	None	None	None	None
Nickel nitrate	0.1 mg/m3 TWA (as Ni) Inhalable fraction.	1 mg/m3 PEL (as Ni)	None	None
fluorosilicic acid	None	None	None	None
Hydrogen fluoride	2 ppm Ceiling (as F) 0.5 ppm TWA (as F) (SKIN) (as F)	2.5 mg/m3 PEL (as F) 3 ppm TWA	None	None
Hydroxylamine sulfate	None	None	None	None

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.

Respiratory protection: If ventilation is not sufficient to effectively prevent buildup of aerosols, mists or vapors, appropriate NIOSH/MSHA respiratory protection must be provided.

Eye/face protection: Wear chemical goggles; face shield (if splashing is possible).

Skin protection: Wear impervious gloves for prolonged contact. Gloves should be tested to determine suitability for prolonged contact. Use of impervious apron and boots are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid
Color: Green
Odor: Acidic
Odor threshold: Not available.
pH: < 1
Vapor pressure: Not available.
Boiling point/range: > 100 °C (> 212°F)calculated
Melting point/ range: Not determined
Specific gravity: 1.32 - 1.35
Vapor density: Not determined
Flash point: Not applicable
Flammable/Explosive limits - lower: Not determined
Flammable/Explosive limits - upper: Not determined
Autoignition temperature: Not determined
Flammability: Not applicable
Evaporation rate: Not available.
Solubility in water: Complete
Partition coefficient (n-octanol/water): Not determined
VOC content: Not applicable
Viscosity: Not available.
Decomposition temperature: Not available.

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions of storage and use.
Hazardous reactions:	None under normal processing.
Hazardous decomposition products:	Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons. May liberate hydrogen fluoride.
Incompatible materials:	This product may react with strong acids, bases and oxidizing agents. This material will react with glass, concrete, certain metals, silica containing materials, rubber, leather, and many organics.
Reactivity:	Not available.
Conditions to avoid:	Keep away from heat, ignition sources and incompatible materials.

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Skin, Inhalation, Eyes, Ingestion

Potential Health Effects/Symptoms

Inhalation: Mists, vapors or liquid may cause severe irritation or burns. Contains fluorides. Exposure to fluorides over years may cause fluorosis.

Skin contact: This product is severely irritating to the skin and may cause burns. Liquid or vapor can cause fluoride-type irritation or burns which may not be immediately painful or visible. Hydrofluoric acid will penetrate the skin and attack underlying tissue and bone. Large burns (over 25 square inches) may also cause hypocalcemia and other systemic effects which may be fatal.

Eye contact: This product is severely irritating to the eyes and may cause irreversible damage including burns and blindness.

Ingestion: Ingestion of small amounts of this product may result in potentially fatal hypocalcemia and systemic toxicity. Ingestion of large amounts of this product may result in fluoride poisoning including symptoms of calcification of the ligaments and severe bone changes making normal movements painful, mottling of the teeth, pulmonary fibrosis, anemia, anorexia, dental effects, and possibly death. Ingestion causes burns of the upper digestive and respiratory tracts. Contains fluorides. Exposure to fluorides over years may cause fluorosis.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Zinc dihydrogen phosphate	None	Blood, Central nervous system, Corrosive, Endocrine, Gastrointestinal, Immune system, Irritant, Kidney, Metabolic, Pancreas, Respiratory
Manganese dihydrogen phosphate	None	Behavioral, Blood, Developmental, Irritant, Kidney, Lung, Mutagen, Nervous System, Reproductive, Respiratory
Phosphoric acid	Oral LD50 (Rat) = 1,530 mg/kg Dermal LD50 (Rabbit) = 2,740 mg/kg	Irritant, Corrosive
Zinc nitrate	Oral LD50 (Rat) = 1,400 mg/kg Oral LD50 (Mouse) = 241.3 mg/kg Oral LD50 (Rat) = 1,558.7 mg/kg	Blood, Cardiac, Central nervous system, Corrosive, Endocrine, Gastrointestinal tract, Immune system, Irritant, Kidney, Metabolic, Pancreas, Respiratory, Vascular
Nickel nitrate	None	Allergen, Blood, Cardiac, Central nervous system, Corrosive, Developmental, Immune system, Irritant, Kidney, Liver, Lung, Mutagen, Reproductive, Respiratory, Sensory, Some evidence of carcinogenicity, Vascular
fluorosilicic acid	Oral LD50 (Rat) = 430 mg/kg	Blood, Central nervous system, Corrosive, Carcinogen, Gastrointestinal tract, Irritant, Kidney, Metabolic, Muscle, Teeth, Less weight gain and food intake.
Hydrogen fluoride	None	Allergen, Blood, Bone Marrow, Cardiac, Central nervous system, Corrosive, Irritant, Kidney, Liver, Lung, Muscle, Nervous System, Respiratory, Teeth
Hydroxylamine sulfate	None	Allergen, Blood, Central nervous system, Irritant, Mutagen, Skin

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Zinc dihydrogen phosphate	No	No	No
Manganese dihydrogen phosphate	No	No	No
Phosphoric acid	No	No	No
Zinc nitrate	No	No	No
Nickel nitrate	Known To Be Human Carcinogen.	Group 1	No
fluorosilicic acid	No	No	No
Hydrogen fluoride	No	No	No
Hydroxylamine sulfate	No	No	No

12. ECOLOGICAL INFORMATION

Ecological information: Do not empty into drains / surface water / ground water.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Dispose of according to Federal, State and local governmental regulations.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name:	Corrosive liquid, acidic, inorganic, n.o.s. (Phosphoric acid, Fluorosilicic acid)
Hazard class or division:	8
Identification number:	UN 3264
Packing group:	III
DOT Hazardous Substance(s):	Nickel nitrate, Zinc nitrate

International Air Transportation (ICAO/IATA)

Proper shipping name:	Corrosive liquid, acidic, inorganic, n.o.s. (Phosphoric acid, Fluorosilicic acid)
Hazard class or division:	8
Identification number:	UN 3264
Packing group:	III

Water Transportation (IMO/IMDG)

Proper shipping name:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Phosphoric acid, Fluorosilicic acid)
Hazard class or division:	8
Identification number:	UN 3264
Packing group:	III

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status:	All components are listed as active or are exempt from listing on the Toxic Substances Control Act (TSCA) inventory.
TSCA 12 (b) Export Notification:	None above reporting de minimis
CERCLA/SARA Section 302 EHS:	Hydrogen fluoride (CAS# 7664-39-3).
CERCLA/SARA Section 311/312:	Immediate Health, Delayed Health
CERCLA/SARA Section 313:	This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Zinc dihydrogen phosphate (CAS# 13598-37-3). Zinc nitrate (CAS# 7779-88-6). Nickel nitrate (CAS# 13138-45-9). Manganese dihydrogen phosphate (CAS# 18718-07-5).
CERCLA Reportable quantity:	Nickel nitrate (CAS# 13138-45-9) 100 lbs. (45.4 kg) Zinc nitrate (CAS# 7779-88-6) 1,000 lbs. (454 kg) Hydrogen fluoride (CAS# 7664-39-3) 100 lbs. (45.4 kg)
California Proposition 65:	This product contains a chemical known in the State of California to cause cancer.

Canada Regulatory Information

CEPA DSL/NDSL Status:	All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: 2, 4, 6, 7, 8, 10, 11

Prepared by: Product Safety and Regulatory Affairs

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