SAFETY DATA SHEET

1. Product And Company Identification

Product Name: MetriShine™
Product Use: Descaler and rust remover

Manufacturer: METREX™ RESEARCH
28210 Wick Rd
Romulus, MI 48174
U.S.A.

Information Phone Number: 1-800-841-1428 (Customer Service)

Chemical Emergency Phone Number (Chemical Spills, Leaks, Fire, Exposure or Accident only):
CHEMTREC 1-800-424-9300 (in the US) 1-703-527-3887 (Outside the US)

MSDS Date Of Preparation/Revision: 12/16/2014

2. Hazards Identification

GHS / HAZCOM 2012 Classification:
Corrosive to Metals Category 1
Skin Corrosion Category 1B
Eye Damage Category 1

Danger!

Hazard Phrases
May be corrosive to metals.
Causes severe skin burns and eye damage.

Precautionary Phrases:
Keep only in original container.
Do not breathe mists.
Wash thoroughly after handling.
Wear protective gloves, protective clothing, eye protection and face protection.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with soap and water.
Wash contaminated clothing before reuse.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Immediately call a POISON CENTER or doctor.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy

to do. Continue rinsing.
Absorb spillage to prevent material damage
Store locked up.
Store in corrosive resistant container with a corrosive resistant inner liner.
Dispose of contents and container in accordance with local and national regulations.

Other hazards: None

3. Composition/Information On Ingredients

Component	CAS No.	Amount
Phosphoric Acid	7664-38-2	35-45%
Glycolic Acid	79-14-1	10%
Water	7732-18-5	45-55%

4. First Aid Measures

Inhalation: Move to fresh air if effects occur. If not breathing or breathing is difficult, give oxygen or artificial respiration. Seek immediate medical attention if symptoms develop..

Skin Contact: Immediately remove contaminated clothing. Flush all affected and exposed areas with plenty of water for at least 15minutes. If skin irritation develops and persists, seek medical attention. Launder clothing before reuse. Discard items that cannot be thoroughly decontaminated, like leather shoes and belts.

Eye Contact: Hold eye open and rinse slowly and gently with water for at least 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. Get immediate medical attention.

Ingestion: If swallowed, get immediate medical advice by calling a Poison Control Center or hospital emergency room. If advice is not available, take victim and product container to the nearest emergency treatment center or hospital. Do NOT induce vomiting. If the victim is alert, rinse their mouth with water. Do not attempt to give anything by mouth to an unconscious person.

Most Important symptoms and effects, both acute and delayed: Causes skin burns and eye damage. Inhalation of mists or vapors may cause severe irritation of the eyes, nose and throat. High concentrations may cause lung damage. Harmful if swallowed. Causes burns to the mouth, throat and intestinal tract.

Indication of any immediate medical attention and special treatment needed: Get immediate medical attention for ingestion, and for eye and skin contact of exposure. Get immediate medical attention in breathing difficulties develop.

5. Fire Fighting Measures

Suitable (and Unsuitable) Extinguishing Media: This product is not combustible. Use any media that is suitable for the surrounding fire. Cool fire exposed containers with water.

Specific Hazards Arising from the Chemical: Thermal decomposition after the water has evaporated may produce carbon monoxide, carbon dioxide, phosphorus oxides.

Special Protective Equipment and Precautions for Fire-fighters: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing.

6: Accidental Release Measures

Personal precautions, Protective equipment, and Emergency procedures: Stop leak if it is safe to do so and move containers from the spill area. Wear appropriate protective clothing and equipment (See Section 8).

Environmental Precautions: Avoid release to the environment. Report all spills as required by local and federal regulations.

Methods and Materials for Containment and Cleaning up: Neutralize spill with a dilute alkaline material (soda ash, lime) or use acid spill kit. Collect material with an inert absorbent material and place in appropriate, labeled container for disposal. Do not use a combustible absorbent such as sawdust.

7. Handling and Storage

Precautions for Safe Handling: Do not get in eyes, on skin or on clothing. Wear appropriate protective clothing when handling concentrate (see Section 8). Do not use this product at elevated temperatures. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Immediately remove and wash contaminated clothing before reuse.

Empty containers retain product residues and may be hazardous. Do not flame cut, drill, weld, etc. on or near empty containers, even empty.

Conditions for Safe Storage, Including any Incompatibilities: Store at normal room temperature. Store away from oxidizing agents and bases. Protect from physical damage.

8. Exposure Controls / Personal Protection

Exposure Limits

Chemical	Exposure Limit
Phosphoric Acid	1 mg/m3 TWA OSHA PEL 1 mg/m3 TWA, 3 mg/m3 STEL ACGIH TLV (All Canadian Provinces)
Glycolic Acid	None Established

Appropriate Engineering Controls: For operations where the exposure limits may be exceeded, mechanical ventilation such as local exhaust may be needed to minimize exposure.

Respiratory Protection: None under normal use conditions with adequate ventilation. For operations where the occupational exposure limits are exceeded, a NIOSH approved respirator with a dust/mist cartridge or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration. Select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.

Hand protection: Impervious gloves such as neoprene or nitrile.

Eye Protection: Splash proof goggles and face shield for handling concentrate. Wear eye protection for using diluted product.

Skin Protection: Wear protective clothing if needed to prevent skin contact. Contaminated clothing must be immediately removed and laundered before re-use.

Hygiene measures: Suitable washing and eye flushing facilities should be available in the work area.

9. Physical and Chemical Properties

Appearance:	Colorless to very slight straw color, clear liquid	**Vapor Pressure:**	Same as water
Odor:	Burnt sugar odor	**Vapor Density:**	Same as water
Odor Threshold:	Not determined	**Relative Density /Specific Gravity:**	1.21 – 1.29
pH:	<1 (concentrate) 1.7-2.1 (1% solution)	**Solubility in Water:**	Complete
Melting/Freezing Point:	Not determined	**Partition Coefficient: (n-octanol/water)**	Not determined
Initial Boiling Point/Range:	Not determined	**Auto-ignition Temperature:**	Not determined
Flash Point:	Not flammable	**Decomposition Temperature:**	Not determined

10. Stability and Reactivity

Reactivity: Not reactive at ambient temperatures.
Chemical Stability: Stable.
Possibility of Hazardous Reactions: Reacts with most common metals to form flammable hydrogen gas.
Conditions to Avoid: Excessive heat.
Incompatible Materials: Strong caustics, metals, sulfides and sulfites.
Hazardous decomposition products: Thermal decomposition will produce carbon monoxide, carbon dioxide, phosphorus oxides.

11. Toxicological Information

Potential Health Effects:

Acute Hazards:
Inhalation: Vapors and mists may cause severe irritation of the eyes, nose and throat. High concentrations may cause lung damage.

Skin Contact: Corrosive. Concentrate may cause severe irritation or burns. Diluted solution may cause skin irritation.

Eye Contact: Corrosive. May cause severe irritation or burns. Permanent damage may occur.

Ingestion: Harmful if swallowed. Causes burns to the mouth, throat and intestinal tract.

Chronic Hazards: Prolonged overexposure to dilute solutions may cause dermatitis.

Carcinogen: None of the components are listed as a carcinogen or potential carcinogen by IARC, NTP, ACGIH, or OSHA.

Acute Toxicity Values:
Phosphoric Acid: LD50 Oral Rat 1530 mg/kg; LD50 dermal rabbit 2740 mg/kg
Glycolic Acid: LD50 Oral Rat 1950 mg/kg; LC50 Inhalation rat 7.7-14 mg/L/4 hr

12. Ecological Information

This product is not classified as aquatically toxic based on the GHS criteria for aquatic toxicity.

Toxicity:

Phosphoric Acid: No data available. Ecotoxcity is based on pH
Glycolic Acid: LC50 Pimephales promelas (Fathead minnow) 164 mg/L/96 hr; EC50 Daphnia magna (Water flea) 141 mg/L/48 hr; EC50 Selenastrum capricornutum (algae) 44 mg/L/72 hr

Persistence and degradability: Biodegradation is not applicable to inorganic substances such as phosphoric acid. Glycolic acid is readily biodegradable.

Bioaccumulative Potential: An estimated BCF of 3.2 was calculated for glycolic acid. This BCF suggests the potential for bioconcentration in aquatic organisms is low

Mobility in Soil: Glycolic acid is expected to have very high mobility in soil.

Other: Releases of large amounts to waterways will affect the pH of the water and may have an adverse effect on aquatic organisms.

13. Disposal Considerations

Product Disposal: Unused concentrate would be classified as a RCRA hazardous waste, characteristic corrosivity. Unused product can be neutralized and flushed with large quantities of water into sewage system in accordance with federal, state and local regulations. For used solution, the waste solution must be characterized by the generator and disposed of according to applicable Federal, State, or local procedures.
Container Disposal: Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. If recycling is not available, discard in trash.

14. Transport Information

	UN Number	UN Proper Shipping Name	Hazard Class(s)	Packing Group	Environmental Hazards
US DOT	UN1805	Phosphoric Acid Solution	8	None	None
Canada TDG	UN1805	Phosphoric Acid Solution	8	III	None
IMDG	UN1805	Phosphoric Acid Solution	8	III	None
IATA/ICAO	UN1805	Phosphoric Acid Solution	8	III	None

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Not applicable – product is transported only in packaged form.

Special precautions: None identified

15. Regulatory Information

US Regulations
EPA SARA 311/312 Hazard Classification: Acute Health

EPA SARA 313: This Product Contains the Following Chemicals Subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372): None

Protection of Stratospheric Ozone: This product is not known to contain or to have been manufactured with ozone depleting substances as defined in 40 CFR Part 82, Appendix A to Subpart A.

CERCLA SECTION 103: This product is not subject to CERCLA release reporting. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

Canadian Regulations
National Pollutant Release Inventory (NPRI): This Product Contains the Following Chemicals Subject to Annual Release Reporting Requirements NPRI: None

WHMIS Classification: Class E
This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations* and the MSDS contains all the information required by the *Controlled Products Regulations*

International Inventories

US EPA TSCA Inventory: All of the components of this product are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory or exempt.

Canadian Environmental Protection Act: All of the components in this product are listed on the Domestic Substances List (DSL) or exempt.

Australia: All of the components in this product are listed on the Australian Inventory of Chemical Substances (AICS) or exempt.

China: All of the components in this product are listed on the Inventory of Existing Chemical Substances in China (IECSC) or exempt.

European Union: All the components in this product are listed on the EINECS inventory or exempt.

Japan: All of the components in this product are listed on the Japanese Existing and New Chemical Substances (ENCS) inventory or exempt.

Korea: All of the components in this product are listed on the Korean Existing Chemicals List (KECL) or exempt.

New Zealand: All of the components in this product are listed on the New Zealand Inventory of Chemicals (NZIoC) or exempt.

Philippines: All of the components of this product are listed on the Philippines Inventory of Chemicals and Chemical Substances (PICCS) or exempt.

Taiwan: All of the components of this product are listed on the National Existing Chemical Inventory (NECI) in Taiwan or exempt.

16. Other Information

NFPA Rating: Fire: 0 Health: 3 Instability: 0

Effective Date: 12/16/2014

Supersedes Date: 10/3/2012

Revision Summary: All sections. Converted to GHS format

The information and recommendations set forth herein are taken from sources believed to be accurate as of the date of preparation, however, METREX™ RESEARCH makes no warranty with respect to the accuracy or suitability of the recommendations, and assumes no liability to any use thereof.