



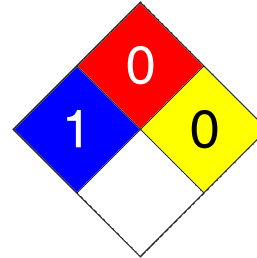
MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product Name Metal Free
CAS # Mixture
Product use Deactivates iron, copper, and other trace metals. Prevents stains and water discoloration.
Manufacturer Natural Chemistry, Inc.
40 Richards Ave.
Norwalk, CT 06854 US
Phone: (800) 753-1233
Emergency Phone: CHEMTREC (800) 424-9300

| LEGEND HMIS/NFPA | |
|---------------------|---|
| Severe | 4 |
| Serious | 3 |
| Moderate | 2 |
| Slight | 1 |
| Minimal | 0 |

| | |
|---------------------|-----|
| Health | / 1 |
| Flammability | 0 |
| Physical Hazard | 0 |
| Personal Protection | B |



2. Hazards Identification

Emergency overview CAUTION
EYE AND SKIN IRRITANT.

Potential short term health effects

Routes of exposure Eye, Skin contact, Inhalation, Ingestion.

Eyes May cause irritation.

Skin May cause irritation.

Inhalation May cause respiratory tract irritation.

Ingestion May cause stomach distress, nausea or vomiting.

Target organs Eyes. Skin.

Chronic effects Prolonged or repeated exposure can cause drying, defatting and dermatitis.

Signs and symptoms Symptoms may include redness, edema, drying, defatting and cracking of the skin. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

3. Composition / Information on Ingredients

| Ingredient(s) | CAS # | Percent |
|---------------|---------|-----------|
| Citric acid | 77-92-9 | 0.5 - 1.5 |

4. First Aid Measures

First aid procedures

Eye contact Flush with cool water. Remove contact lenses, if applicable, and continue flushing. Obtain medical attention if irritation persists.

Skin contact Flush with cool water. Wash with soap and water. Obtain medical attention if irritation persists.

Inhalation If symptoms develop move victim to fresh air. If symptoms persist, obtain medical attention.

Ingestion Do not induce vomiting. Never give anything by mouth if victim is unconscious, or is convulsing. Obtain medical attention.

Notes to physician Symptoms may be delayed.

General advice

If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Avoid contact with eyes and skin. Keep out of reach of children.

5. Fire Fighting Measures

| | |
|---|---|
| Flammable properties | Not flammable by WHMIS/OSHA criteria. |
| Extinguishing media | |
| Suitable extinguishing media | Dry chemical. Carbon dioxide. Water spray. Foam. |
| Unsuitable extinguishing media | Not available |
| Protection of firefighters | |
| Specific hazards arising from the chemical | Not available |
| Protective equipment for firefighters | Firefighters should wear full protective clothing including self contained breathing apparatus. |
| Hazardous combustion products | May include and are not limited to: Oxides of carbon. Oxides of nitrogen. |
| Explosion data | |
| Sensitivity to mechanical impact | Not available |
| Sensitivity to static discharge | Not available |

6. Accidental Release Measures

| | |
|--------------------------------|---|
| Personal precautions | Keep unnecessary personnel away. Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak. |
| Methods for containment | Stop leak if you can do so without risk. Prevent entry into waterways, sewers, basements or confined areas. |
| Methods for cleaning up | Before attempting clean up, refer to hazard data given above. Small spills may be absorbed with non-reactive absorbent and placed in suitable, covered, labelled containers. Prevent large spills from entering sewers or waterways. Contact emergency services and supplier for advice. Never return spills in original containers for re-use. |

7. Handling and Storage

| | |
|-----------------|--|
| Handling | Use good industrial hygiene practices in handling this material. |
| Storage | Keep out of reach of children. Store in a closed container away from incompatible materials. |

8. Exposure Controls / Personal Protection

| | |
|---------------------------------------|---|
| Exposure limits | |
| Ingredient(s) | Exposure Limits |
| Citric acid | ACGIH-TLV TWA: 10 mg/m3 OSHA-PEL TWA: 10 mg/m3 |
| Engineering controls | General ventilation normally adequate. |
| Personal protective equipment | |
| Eye / face protection | Wear safety glasses with side shields. |
| Hand protection | Rubber gloves. Confirm with a reputable supplier first. |
| Skin and body protection | As required by employer code. |
| Respiratory protection | Where exposure guideline levels may be exceeded, use an approved NIOSH respirator. |
| General hygiene considerations | Handle in accordance with good industrial hygiene and safety practice. When using do not eat or drink. Wash hands before breaks and immediately after handling the product. |

9. Physical and Chemical Properties

| | |
|---|----------------|
| Appearance | Clear. |
| Color | Colorless |
| Form | Liquid |
| Odor | Mild |
| Odor threshold | Not available |
| Physical state | Liquid |
| pH | 6.25 - 6.35 |
| Melting point | Not available |
| Freezing point | Not available |
| Boiling point | Not available |
| Flash point | None |
| Pour point | Not available |
| Evaporation rate | Not available |
| Flammability limits in air, lower, % by volume | Not applicable |
| Flammability limits in air, upper, % by volume | Not applicable |
| Vapor pressure | Not available |
| Vapor density | Not available |
| Specific gravity | 1.09 - 1.11 |
| Relative density | 9.14 - 9.18 |
| Octanol/water coefficient | Not available |
| Auto-ignition temperature | Not applicable |
| Percent volatile | Not available |

10. Stability and Reactivity

| | |
|---|---|
| Chemical stability | Stable under recommended storage conditions. |
| Conditions to avoid | Do not mix with other chemicals. |
| Incompatible materials | Caustics. Oxidizers. Reducing agents. |
| Hazardous decomposition products | May include and are not limited to: Oxides of carbon. Oxides of nitrogen. |
| Possibility of hazardous reactions | Hazardous polymerization does not occur. |

11. Toxicological Information

Component analysis - LC50

| Ingredient(s) | LC50 |
|----------------------|---------------|
| Citric acid | Not available |

Component analysis - Oral LD50

| Ingredient(s) | LD50 |
|----------------------|----------------------------------|
| Citric acid | 5040 mg/kg mouse; 3000 mg/kg rat |

Effects of acute exposure

| | |
|-----------------------------|---|
| Eye | May cause irritation. |
| Skin | May cause irritation. |
| Inhalation | May cause respiratory tract irritation. |
| Ingestion | May cause stomach distress, nausea or vomiting. |
| Sensitization | Non-hazardous by WHMIS/OSHA criteria. |
| Chronic effects | Non-hazardous by WHMIS/OSHA criteria. |
| Carcinogenicity | Non-hazardous by WHMIS/OSHA criteria. |
| Mutagenicity | Non-hazardous by WHMIS/OSHA criteria. |
| Reproductive effects | Non-hazardous by WHMIS/OSHA criteria. |
| Teratogenicity | Non-hazardous by WHMIS/OSHA criteria. |

12. Ecological Information

Ecotoxicity Components of this product have been identified as having potential environmental concerns.

Ecotoxicity - Freshwater Fish Species Data

Citric acid 77-92-9 96 Hr LC50 *Lepomis macrochirus*: 1516 mg/L [static]

Ecotoxicity - Microtox Data

Citric acid 77-92-9 15 Min EC50 *Photobacterium phosphoreum*: 14 mg/L

Ecotoxicity - Water Flea Data

Citric acid 77-92-9 72 Hr EC50 *Daphnia magna*: 120 mg/L

Environmental effects Not available

Aquatic toxicity Not available

Persistence / degradability Not available

Bioaccumulation / accumulation Not available

Partition coefficient Not available

Mobility in environmental media Not available

Chemical fate information Not available

Other adverse effects Not available

13. Disposal Considerations

Waste codes Not available

Disposal instructions Review federal, state/provincial, and local government requirements prior to disposal.

Waste from residues / unused products Not available

Contaminated packaging Not available

14. Transport Information

U.S. Department of Transportation (DOT)

Not regulated as dangerous goods.

Transportation of Dangerous Goods (TDG - Canada)

Not regulated as dangerous goods.

15. Regulatory Information

Canadian federal regulations 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.

Canada - WHMIS - Ingredient Disclosure List

Citric acid 77-92-9 1 %

US Federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.

CERCLA/SARA Hazardous Substances - Not applicable.

Occupational Safety and Health Administration (OSHA)

29 CFR 1910.1200 hazardous chemical Yes

CERCLA (Superfund) reportable quantity

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
 Immediate Hazard - Yes
 Delayed Hazard - No
 Fire Hazard - No
 Pressure Hazard - No
 Reactivity Hazard - No

Section 302 extremely hazardous substance No
Section 311 hazardous chemical Yes
Clean Air Act (CAA) Not available
Clean Water Act (CWA) Not available
WHMIS status Controlled
WHMIS classification Class D - Division 2B
WHMIS labeling



State regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

Inventory name

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|-----------------------------|---|------------------------|
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other Information

Disclaimer Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

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Other information For an updated MSDS, please contact the supplier/manufacturer listed on the first page of the document.