1. Product and Company Identification

Product identifier | Metal Free
--- | ---
Other means of identification | Not available
Recommended use | Deactivates iron, copper, and other trace metals. Prevents stains and water discoloration.
Recommended restrictions | None known.
Manufacturer | Natural Chemistry L.P.
 | 40 Richards Ave.
 | Norwalk, CT 06854 US
 | Phone: (800) 753-1233
 | Emergency Phone: CHEMTREC (800) 424-9300

2. Hazards Identification

Physical hazards | Not classified.
Health hazards | Not classified.
Environmental hazards | Not classified.
OSHA defined hazards | Not classified.
Label elements
 | Hazard symbol | None.
 | Signal word | None.
 | Hazard statement | The mixture does not meet the criteria for classification.
Precautionary statement
 | Prevention | Observe good industrial hygiene practices.
 | Response | Wash hands after handling.
 | Storage | Store away from incompatible materials.
 | Disposal | Dispose of waste and residues in accordance with local authority requirements.
Hazard(s) not otherwise classified (HNOC) | None known.
Supplemental information | Not applicable.

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Mixture</th>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric Acid</td>
<td>77-92-9</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. First Aid Measures

Inhalation | If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.
Skin contact | Rinse skin with water/shower. Get medical attention if irritation develops and persists.
Eye contact | Rinse with water. Get medical attention if irritation develops and persists.
Ingestion | Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.
Most important symptoms/effects, acute and delayed | Irritant effects.
Indication of immediate medical attention and special treatment needed | Treat symptomatically.
General information | Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures

Suitable extinguishing media | Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media | None known.
Specific hazards arising from the chemical
During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire-fighting equipment/instructions
Move containers from fire area if you can do so without risk.

Specific methods
Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards
No unusual fire or explosion hazards noted.

Hazardous combustion products
Oxides of carbon.

Explosion data
- Sensitivity to mechanical impact: Not available.
- Sensitivity to static discharge: Not available.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up
- Stop the flow of material, if this is without risk.
- Large Spills: Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.
- Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Environmental precautions
- Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
- Avoid discharge into drains, water courses or onto the ground.

7. Handling and Storage

Precautions for safe handling
Use care in handling/storage.

Conditions for safe storage, including any incompatibilities
Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure Controls/Personal Protection

Occupational exposure limits
No exposure limits noted for ingredient(s).

Biological limit values
No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls
Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment
- Eye/face protection: Safety glasses if eye contact is possible.
- Skin protection
  - Hand protection: If there is constant skin contact, rubber gloves are recommended.
  - Other: Wear suitable protective clothing.
- Respiratory protection
  - No personal respiratory protective equipment normally required.
- Thermal hazards: Not applicable.
- General hygiene considerations: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and Chemical Properties

Appearance
Clear

Physical state
Liquid.

Form
Liquid.

Color
Colorless

Odor
None
Odor threshold: Not available.

pH: 5.9 - 6.5

Melting point/freezing point: Not available.

Initial boiling point and boiling range: Not available.

Pour point: Not available.

Specific gravity: 1.08 - 1.14

Partition coefficient (n-octanol/water): Not available.

Flash point: None

Evaporation rate: Not available.

Flammability (solid, gas): Not applicable.

Upper/lower flammability or explosive limits:
- Flammability limit - lower (%): Not available.
- Flammability limit - upper (%): Not applicable
- Explosive limit - lower (%): Not available.
- Explosive limit - upper (%): Not available.

Vapor pressure: Not available.

Vapor density: Not available.

Relative density: 9 - 9.5 lb/gal

Solubility(ies): Not available.

Auto-ignition temperature: Not available.

Decomposition temperature: Not available.

Viscosity: Not available.

10. Stability and Reactivity

Reactivity: None known.

Possibility of hazardous reactions: No dangerous reaction known under conditions of normal use.

Chemical stability: Material is stable under normal conditions.

Conditions to avoid: Contact with incompatible materials.

Incompatible materials: Strong oxidizing agents.

Hazardous decomposition products: Oxides of carbon.

11. Toxicological Information

Information on likely routes of exposure:
- Ingestion: Expected to be a low ingestion hazard.
- Inhalation: No adverse effects due to inhalation are expected.
- Skin contact: May be irritating to the skin.
- Eye contact: May be irritating to eyes.

Symptoms related to the physical, chemical and toxicological characteristics: Irritant effects.

Information on toxicological effects:

Acute toxicity

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric Acid (CAS 77-92-9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td>Dermal</td>
<td>Not available</td>
</tr>
<tr>
<td>LD50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Components

<table>
<thead>
<tr>
<th>Species</th>
<th>Oral LD50</th>
<th>Skin corrosion/irritation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mouse</td>
<td>5040 mg/kg</td>
<td>Prolonged skin contact may cause temporary irritation.</td>
</tr>
<tr>
<td>Rat</td>
<td>3000 mg/kg</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

| Exposure minutes | Not available. |
| Erythema value   | Not available. |
| Oedema value     | Not available. |

**Serious eye damage/eye irritation**

- Corneal opacity value: Not available.
- Iris lesion value: Not available.
- Conjunctival redening value: Not available.
- Conjunctival oedema value: Not available.
- Recover days: Not available.

**Respiratory or skin sensitization**

- Respiratory sensitization: Not classified.
- Skin sensitization: This product is not expected to cause skin sensitization.

**Germ cell mutagenicity**

- No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Mutagenicity**

- No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Carcinogenicity**

- This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

**Reproductive toxicity**

- This product is not expected to cause reproductive or developmental effects.

**Teratogenicity**

- Not classified.

**Specific target organ toxicity - single exposure**

- Not classified.

**Specific target organ toxicity - repeated exposure**

- Not classified.

**Aspiration hazard**

- Not classified.

**Chronic effects**

- Not classified.

**Further information**

- Not available.

**Name of Toxicologically Synergistic Products**

- Not available.

### 12. Ecological Information

**Ecotoxicity**

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric Acid (CAS 77-92-9)</td>
<td>Acute Crustacea EC50</td>
<td>Daphnia magna, 120 mg/l, 72 hr</td>
</tr>
<tr>
<td></td>
<td>Acute Aquatic LC50</td>
<td>Bluegill (Lepomis macrochirus), 1516 mg/l, 96 hr</td>
</tr>
</tbody>
</table>

**Persistence and degradability**

- No data is available on the degradability of this product.

**Bioaccumulative potential**

- No data available.

**Mobility in soil**

- No data available.

**Mobility in general**

- Not available.

**Other adverse effects**

- No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

### 13. Disposal Considerations

**Disposal instructions**

Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

**Local disposal regulations**

Dispose in accordance with all applicable regulations.
Hazardous waste code: The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products: Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

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 SDS contains all the information required by the Controlled Products Regulations.

Canada WHMIS Ingredient Disclosure: Threshold limits
Citric Acid (CAS 77-92-9) 1 %

WHMIS status: Controlled
WHMIS classification: Class D - Division 2B
WHMIS labeling:

US federal regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

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

SARA 302 Extremely hazardous substance
No

SARA 311/312 Hazardous chemical
No

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations
Safe Drinking Water Act (SDWA)
Not regulated.

Food and Drug Administration (FDA)
Not regulated.

US state regulations:
California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance
Not listed.

US - Texas Effects Screening Levels: Listed substance
Citric Acid (CAS 77-92-9) Listed.
US. Massachusetts RTK - Substance List  
Not regulated.

US. Pennsylvania RTK - Hazardous Substances  
Not regulated.

US. Rhode Island RTK  
Not regulated.

Inventory status

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

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

16. Other Information

LEGEND

<table>
<thead>
<tr>
<th></th>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
<th>PHYSICAL HAZARD</th>
<th>PERSONAL PROTECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Serious</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Slight</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Minimal</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available. 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.

Issue date  
11-July-2014

Effective date  
01-July-2014

Expiry date  
01-July-2017

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

Prepared by  
Dell Tech Laboratories, Ltd.  Phone: (519) 858-5021

Other information  
This Safety Data Sheet was prepared to comply with the current OSHA Hazard Communication Standard (HCS) adoption of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). This SDS conforms to the ANSI Z400.1/Z129.1-2010 Standard.