1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Name: MICROLOX SPECIAL 20 LF

Other means of identification:
- Product Code: 179
- UN/ID No.: UN3264
- Synonyms: None

Recommended use of the chemical and restrictions on use:
- Recommended Use: Acid Cleaner.
- Uses advised against: PREVENT DISPERSION OF MISTS!

Manufacturer Address:
Anderson Chemical Company, 325 South Davis Avenue, Litchfield, MN 55355 (320-693-2477)

Emergency telephone number:
Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification:
- Acute toxicity - Inhalation (Dusts/Mists): Category 4
- Skin corrosion/irritation: Category 1 Sub-category B
- Serious eye damage/eye irritation: Category 1
- Corrosive to metals: Category 1

Label elements:

Emergency Overview:

Danger:
- Hazard statements:
  - Harmful if inhaled
  - Causes severe skin burns and eye damage
  - May be corrosive to metals

Appearance: aqueous solution
Physical state: liquid
Odor: None

Precautionary Statements - Prevention:
- Do not breathe dust/fume/gas/mist/vapors/spray
- Wash face, hands and any exposed skin thoroughly after handling
- Keep only in original container
- Use only in well-ventilated areas
- Wear protective gloves/protective clothing/eye protection/face protection
Precautionary Statements - Response
Immediately call a POISON CENTER or doctor/physician
Specific treatment (see Section 4 on this label)
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting
Absorb spillage to prevent material damage

Precautionary Statements - Storage
Store locked up
Store in a corrosive resistant container.

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Other Information
• Harmful to aquatic life with long lasting effects
• Harmful to aquatic life

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>Weight-%</th>
<th>Trade Secret</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitric acid</td>
<td>7697-37-2</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Phosphoric acid</td>
<td>7664-38-2</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Sulfuric acid</td>
<td>7664-93-9</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

First aid measures

Eye contact
Flush immediately with water for 15 minutes. Lift upper and lower eyelids for complete rinsing. Get immediate medical attention.

Skin Contact
Flush with water for 15 minutes. Get medical attention. Remove contaminated clothing and wash before reuse.

Inhalation
Remove victim from immediate source of exposure to fresh air. If breathing is difficult, administer oxygen if available. If victim is not breathing, administer CPR. If individual experiences nausea, headache, or dizziness, get immediate medical attention.

Ingestion
Rinse mouth with water. Give water to dilute. Do not induce vomiting. Get immediate medical attention. Never give anything by mouth to a semi-comatose, comatose, convulsing or unconscious person.

Most important symptoms and effects, both acute and delayed

Symptoms
Corrosive. Causes tissue destruction, permanent damage to the cornea, blindness. Causes irritation (possibly severe), burns to the skin. Mists may cause lung irritation, shortness of breath, fluid in lungs. Ingestion causes nausea, vomiting, diarrhea, corrosion, burns to mouth and esophagus, abdominal pain, chest pain, shortness of breath, seizures, death.
Indication of any immediate medical attention and special treatment needed

Note to physicians
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media
None known.

Specific hazards arising from the chemical
If the stock solution container breaks, the solution should be handled with care as it is corrosive. May produce poisonous or irritating gas or fumes. This material is reactive with many materials.

Explosion data
Sensitivity to Mechanical Impact
None.
Sensitivity to Static Discharge
None.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Use water spray to cool fire exposed containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions
Evacuate nonessential personnel. Ventilate area. Wear appropriate personal protection equipment. Remove all sources of ignition.

Environmental precautions
See Section 12 for additional ecological information.

Methods for containment
Stop leak if you can do it without risk. Completely contain spilled material with dikes or sand bags, etc.

Methods for cleaning up
Recover as much material as possible into containers for disposal or reuse. Remaining material may be diluted with water and neutralized. Flush spill area with water. Neutralization products, both solid and liquid, must be recovered for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling
Do not get in eyes, on skin, or clothing. Do not breathe vapors or mists. Do not ingest. Wash thoroughly after handling. Wear protective clothing/equipment. Use with adequate ventilation.

Conditions for safe storage, including any incompatibilities

Storage Conditions
Keep containers tightly closed and properly labeled. This product reacts violently with bases liberating heat and causes spattering. Store in a cool, dry, well-ventilated area. Wash hands before eating, drinking, using tobacco, applying make-up or using the toilet. Do not store, use, and/or consume foods, beverages, tobacco in areas where this product is stored.

Incompatible materials
Fluorine, strong oxidizing and reducing agents, bases, metals, sulfur tioxide, and phosphorus petoxide. Reacts explosively with metallic powders, hydrogen sulfide, carbides, chlorates, fulminates, nitrates, picrates., cyanides, sulfides, and turpentine. Increases the the flammability of combustible, organic and readily oxidizable materials.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitric acid</td>
<td>STEL: 4 ppm</td>
<td>TWA: 2 ppm</td>
<td>IDLH: 25 ppm</td>
</tr>
<tr>
<td>7697-37-2</td>
<td>TWA: 2 ppm</td>
<td>TWA: 5 mg/m³</td>
<td>TWA: 2 ppm</td>
</tr>
<tr>
<td></td>
<td>(vacated) TWA: 2 ppm</td>
<td>(vacated) TWA: 5 mg/m³</td>
<td>TWA: 5 mg/m³</td>
</tr>
<tr>
<td></td>
<td>(vacated) STEL: 4 ppm</td>
<td>(vacated) STEL: 10 mg/m³</td>
<td>STEL: 4 ppm</td>
</tr>
<tr>
<td>Phosphoric acid</td>
<td>STEL: 3 mg/m³ ³</td>
<td>TWA: 1 mg/m³</td>
<td>IDLH: 1000 mg/m³</td>
</tr>
<tr>
<td>7664-38-2</td>
<td>TWA: 1 mg/m³ ³</td>
<td>TWA: 1 mg/m³</td>
<td>TWA: 1 mg/m³</td>
</tr>
<tr>
<td></td>
<td>(vacated) TWA: 1 mg/m³ ³</td>
<td>(vacated) TWA: 3 mg/m³</td>
<td>STEL: 3 mg/m³</td>
</tr>
<tr>
<td>Sulfuric acid</td>
<td>TWA: 0.2 mg/m³ thoracic fraction</td>
<td>TWA: 1 mg/m³ ³</td>
<td>IDLH: 15 mg/m³</td>
</tr>
<tr>
<td>7664-93-9</td>
<td></td>
<td>(vacated) TWA: 1 mg/m³ ³</td>
<td>TWA: 1 mg/m³</td>
</tr>
</tbody>
</table>

Appropriate engineering controls

Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection
Wear protective splash proof safety goggles. Additional full face protection is recommended if splashing is a possibility.

Skin and body protection
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection
If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>aqueous solution</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>clear colorless</td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>1.6</td>
<td>1% Solution</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Flash point</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Flammability Limit in Air</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper flammability limit:</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Lower flammability limit:</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Flammability Limit in Air</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper flammability limit:</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Lower flammability limit:</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Vapor density</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.234</td>
<td></td>
</tr>
<tr>
<td>Water solubility</td>
<td>Soluble in water</td>
<td></td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No information available</td>
<td></td>
</tr>
</tbody>
</table>
Partition coefficient  No information available  
Autoignition temperature  No information available  
Decomposition temperature  No information available  
Kinematic viscosity  No information available  
Dynamic viscosity  No information available  
Explosive properties  No information available  
Oxidizing properties  No information available  

Other Information

Softening point  No information available  
Molecular weight  No information available  
VOC Content (%)  No information available  
Density  No information available  
Bulk density  No information available

10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Conditions to avoid
High temperatures might lead to formation of nitrogen dioxide. Contact with water may cause violent reaction with evolution of 
heat. To dilute: Add product slowly to lukewarm water; not water to product.

Incompatible materials
Fluorine, strong oxidizing and reducing agents, bases, metals, sulfur tioxide, and phosphorus petoxide. Reacts explosively with 
metallic powders, hydrogen sulfide, carbides, chlorates, fulminates, nitrates, picrates., cyanides, sulfides, and turpentine.
Increases the the flammability of combustible, organic and readily oxidizable materials.

Hazardous Decomposition Products
At flame temperatures, toxic sulfur dioxide, nitrogen oxides and toxic phosphoric oxide fumes may be emitted. May react with 
certain metals to produce flammable hydrogen gas.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information  No data available

Inhalation  May cause irritation of respiratory tract.
Eye contact  Risk of serious damage to eyes.
Skin Contact  Contact causes severe skin irritation and possible burns.
Ingestion  Harmful if swallowed.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitric acid 7697-37-2</td>
<td>-</td>
<td>-</td>
<td>= 67 ppm ( Rat ) 4 h</td>
</tr>
<tr>
<td>Phosphoric acid 7664-38-2</td>
<td>= 1530 mg/kg ( Rat )</td>
<td>= 2730 mg/kg ( Rabbit )</td>
<td>&gt; 850 mg/m³ ( Rat ) 1 h</td>
</tr>
<tr>
<td>Sulfuric acid 7664-93-9</td>
<td>= 2140 mg/kg ( Rat )</td>
<td>-</td>
<td>= 510 mg/m³ ( Rat ) 2 h</td>
</tr>
</tbody>
</table>
179 MICROLOX SPECIAL 20 LF

Information on toxicological effects

Symptoms
No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization
No information available.

Germ cell mutagenicity
No information available.

Carcinogenicity
No information available.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitric acid 7697-37-2</td>
<td></td>
<td>Group 2A</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Sulfuric acid 7664-93-9</td>
<td>A2</td>
<td>Group 1</td>
<td>Known</td>
<td>X</td>
</tr>
</tbody>
</table>

Reproductive toxicity
No information available.

STOT - single exposure
No information available.

STOT - repeated exposure
No information available.

Aspiration hazard
No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document.

| ATEmix (oral) | 8237 mg/kg |
| ATEmix (dermal) | 18200 mg/kg |
| ATEmix (inhalation-dust/mist) | 1.1 mg/l |
| ATEmix (inhalation-vapor) | 419 mg/l |

12. ECOLOGICAL INFORMATION

Ecotoxicity

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Algae/aquatic plants</th>
<th>Fish</th>
<th>Crustacea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitric acid 7697-37-2</td>
<td>-</td>
<td>72: 96 h Gambusia affinis mg/L</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>120h LC50</td>
<td></td>
</tr>
<tr>
<td>Phosphoric acid</td>
<td>-</td>
<td>3 - 3.5: 96 h Gambusia affinis mg/L</td>
<td>4.6: 12 h Daphnia magna mg/L</td>
</tr>
<tr>
<td>7664-38-2</td>
<td></td>
<td>120h LC50</td>
<td>29: 24h Daphnia magna mg/L</td>
</tr>
<tr>
<td>Sulfuric acid 7664-93-9</td>
<td>-</td>
<td>500: 96 h Brachydanio rerio mg/L</td>
<td>48: 24h Daphnia magna mg/L</td>
</tr>
<tr>
<td></td>
<td></td>
<td>120h LC50 static</td>
<td>29: 24h Daphnia magna mg/L</td>
</tr>
</tbody>
</table>

Persistence and degradability
No information available.

Bioaccumulation
No information available.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Partition coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitric acid 7697-37-2</td>
<td>-2.3</td>
</tr>
</tbody>
</table>

Other adverse effects
No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes
Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging
Do not reuse container.
### Chemical Name | California Hazardous Waste Status
---|---
Nitric acid | Toxic  
7697-37-2 | Corrosive  
Ignitable
Phosphoric acid | Corrosive  
7664-38-2
Sulfuric acid | Toxic  
7664-93-9 | Corrosive

#### 14. TRANSPORT INFORMATION

DOT
Regulated
UN/ID No. UN3264
Proper shipping name Corrosive liquid, acidic, inorganic, n.o.s.
Hazardous ingredients (nitric acid/phosphoric acid)
Hazard Class 8
Packing Group II

#### 15. REGULATORY INFORMATION

**International Inventories**
- TSCA: Complies  
- DSL/NDSL: Complies  
- EINECS/ELINCS: Complies  
- ENCS: Does not comply  
- IECSC: Complies  
- KECL: Complies  
- PICCS: Complies  
- AICS: Complies

**Legend:**
- TSCA - United States Toxic Substances Control Act Section 8(b) Inventory  
- DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List  
- EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
- ENCS - Japan Existing and New Chemical Substances  
- IECSC - China Inventory of Existing Chemical Substances  
- KECL - Korean Existing and Evaluated Chemical Substances  
- PICCS - Philippines Inventory of Chemicals and Chemical Substances  
- AICS - Australian Inventory of Chemical Substances

**US Federal Regulations**

**SARA 313**
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>SARA 313 - Threshold Values</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitric acid - 7697-37-2</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Sulfuric acid - 7664-93-9</td>
<td>1.0</td>
<td></td>
</tr>
</tbody>
</table>

**SARA 311/312 Hazard Categories**
- Acute health hazard: Yes
- Chronic Health Hazard: No
- Fire hazard: No
Sudden release of pressure hazard No
Reactive Hazard No

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CWA - Reportable Quantities</th>
<th>CWA - Toxic Pollutants</th>
<th>CWA - Priority Pollutants</th>
<th>CWA - Hazardous Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitric acid 7697-37-2</td>
<td>1000 lb</td>
<td>-</td>
<td>-</td>
<td>X</td>
</tr>
<tr>
<td>Phosphoric acid 7664-38-2</td>
<td>5000 lb</td>
<td>-</td>
<td>-</td>
<td>X</td>
</tr>
<tr>
<td>Sulfuric acid 7664-93-9</td>
<td>1000 lb</td>
<td>-</td>
<td>-</td>
<td>X</td>
</tr>
</tbody>
</table>

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Hazardous Substances RQs</th>
<th>CERCLA/SARA RQ</th>
<th>Reportable Quantity (RQ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitric acid 7697-37-2</td>
<td>1000 lb</td>
<td>1000 lb</td>
<td>RQ 1000 lb final RQ</td>
</tr>
<tr>
<td>Phosphoric acid 7664-38-2</td>
<td>5000 lb</td>
<td>-</td>
<td>RQ 5000 lb final RQ</td>
</tr>
<tr>
<td>Sulfuric acid 7664-93-9</td>
<td>1000 lb</td>
<td>1000 lb</td>
<td>RQ 1000 lb final RQ</td>
</tr>
</tbody>
</table>

US State Regulations
California Proposition 65
This product does not contain any Proposition 65 chemicals.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>California Proposition 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfuric acid - 7664-93-9</td>
<td>Carcinogen</td>
</tr>
</tbody>
</table>

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitric acid 7697-37-2</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Phosphoric acid 7664-38-2</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Sulfuric acid 7664-93-9</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

U.S. EPA Label Information
EPA Pesticide Registration Number Not Applicable

16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health hazards 3</th>
<th>Flammability 0</th>
<th>Instability 1</th>
<th>Physical and Chemical Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMIS</td>
<td>Health hazards 3</td>
<td>Flammability 0</td>
<td>Physical hazards 1</td>
<td>Personal protection X</td>
</tr>
</tbody>
</table>

Prepared By lmt
Issue Date 08-Oct-2014
Revision Date 04-Dec-2014
Revision Note No information available
Disclaimer
The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet