SAFETY DATA SHEET
SUPERIOR NO. 23
DATE REVISED: January 1, 2018

SECTION 1 -- IDENTIFICATION
Product Name/Part number: Superior No. 23
Recommended use: Inorganic Acid Soldering Flux
6615 Parkland Blvd
Cleveland OH, 44139
Emergency Phone No.: 1-800-424-9300 (CHEMTREC)

SECTION 2 – HAZARD(S) IDENTIFICATION
Classification of the substance or mixture
GHS Classification in accordance with OSHA HCS (29 CFR 1910)
- Corrosive to metals (Category 1) H290
- Acute toxicity, Oral (Category 4) H302
- Skin corrosion (Category 1A) H314
- Serious eye damage (Category 1) H318
- Specific target organ toxicity – Single exposure, Respiratory system (Category 3) H335
- Acute aquatic toxicity (Category 1) H400
- Chronic aquatic toxicity (Category 1) H410

See below for full text of H-Statement

GHS Label Elements, including precautionary statements
Pictogram(s):

Signal Word: Danger
Hazard Statement(s)
- H290 May be corrosive to metals
- H302 Harmful if swallowed
- H318 Causes serious eye damage
- **H314 Causes severe skin burns and eye damage
- H335 May cause respiratory irritation
- **H400 Very toxic to aquatic life
- H410 Very toxic to aquatic life with long lasting effects
**May be omitted from label due to presence of stronger statement.

Precautionary statement(s)
P260 Do not breathe mist, fumes, or vapors
P264 Wash skin thoroughly after handling
P270 Do not eat, drink or smoke when using this product
P273 Avoid release to the environment
P280 Wear protective clothing and face protection
P301+P312+P330 IF SWALLOWED: Call a POISON CENTER if you feel unwell. Rinse mouth
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304+P340+P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a doctor
P305+P351+P338+P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call doctor
P363 Wash contaminated clothing before reuse.
P391 Collect spillage
P403+405 Store in a well ventilated place and locked up
P501 Dispose of contents and container to an approved waste disposal plant

Hazards not otherwise classified or not covered by GHS: None

SECTION 3 – COMPOSITION INFORMATION

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS Number</th>
<th>%</th>
</tr>
</thead>
</table>
| Zinc chloride       | 7646-85-7     | 30-68%
| Acetic acid         | 64-19-7       | 1-4%
| Hydrochloric acid   | 7647-01-0     | 1-6%
| Water               | 7732-18-5     | 30-60% |

SECTION 4 – FIRST AID MEASURES

Description of first aid measures

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Inhalation: If breathed in, move to fresh air. If not breathing, give artificial respiration. Consult a physician.

Eyes: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

Skin: Wash off with soap and plenty of water. Consult a physician.

Ingestion: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most Important Symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in section 2 (labeling)

SECTION 5 – FIREFIGHTING MEASURES

Flash Point: NA
Flammable Limits: NA
Extinguishing Media: Dry chemical, CO₂ foam
Auto Ignition Temperature: None
Special Fire Fighting Procedures: Normal cautions when dealing with chemicals.
Unusual Fire and Explosion Hazards: Will release small amounts of HCl upon decomposition
SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment and emergency procedures: Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. See section 8 for personal protection.

Environmental Precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

In Case Material is spilled: First neutralize with soda ash or sodium bicarbonate, dilute with water and dispose of in accordance with EPA regulations.

SECTION 7 - HANDLING AND STORAGE

Precautions for safe handling: Avoid contact with skin and eyes.
For full precaution statements see Section 2

Storage Requirements: Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

CONTROL PARAMETERS

OSHA Permissible Exposure Limit (PEL): 2 mg/m³
ACGIH Threshold Limit Value (TLV): 2 mg/m³

Engineering Controls: Use local exhaust ventilation to maintain air concentrations of vapors and fumes below occupational exposure standards.

Special Engineering Control Needs: NA

Respiratory Protection: Where risk assessment shows air-purifying respirators are appropriate, use a full-face respirator with multi-purpose combination (USA) or ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested an approved under appropriate government standards such as NIOSH (USA) or CEN (EU).

Protective Gloves: Handle with gloves. (Nitrile Rubber recommended) Gloves must be inspected prior to use. Use proper glove removal techniques (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good lab practices. Wash and dry hands after handling.

Eye Protection: Use tightly fitting safety goggles. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (USA) or EN 166 (EU)

Body Protection: Complete suit protecting against chemical, flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation.
of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

SECTION 9 - PHYSICAL AND CHEMICAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Clear to light green liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>Vinegar</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>0-1.00 @ 20-25°C</td>
</tr>
<tr>
<td>Melting point/Freezing point</td>
<td>0°C / 32°F</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>104°C / 220°F</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation rate (Butyl Acetate = 1)</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Flammability (Solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper flammability or explosive limits</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower flammability or explosive limits</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.320 (Water = 1)</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>Soluble in water</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
</tbody>
</table>

SECTION 10 - STABILITY AND REACTIVITY

Reactivity: No data available
Stability: Product is stable under recommended storage conditions
Possibility of hazardous reactions: No data available
Conditions to Avoid: Metals
Incompatibility: Alkaline, strong oxidizers or reducers, cyanides or combustible materials

Hazardous Decomposition Products HCl, zinc chloride, zinc oxide
In the event of fire: See Section 5

SECTION 11 - TOXICOLOGICAL INFORMATION

Likely Route(s) of Exposure: Inhalation, ingestion, skin and eye contact
Symptoms (Immediate and Chronic) from
  - Acute Exposure: No data available
  - Prolonged or Repeated Exposure: No data available

Measure(s) of toxicity
  - No data available

Is this chemical listed in the National Toxicology Program (NTP) Report on Carcinogens?
  - No data available

Is this chemical found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs or by the Occupational Safety and Health Administration (OSHA)
  - No data available
SECTION 12 - ECOLOGICAL INFORMATION
Toxicity
No data available
Persistence and degradability
No data available
Bioaccumulative potential No data available
Mobility in soil No data available
Other adverse effects Hazard to ozone layer: No data available

SECTION 13 - DISPOSAL CONSIDERATIONS
Waste treatment methods
Product Contact a licensed professional waste disposal service to dispose of this material.
Contaminated packaging Dispose of as unused product.

SECTION 14- TRANSPORTATION
D.O.T.
Proper Shipping Name: Corrosive Liquid, Acidic, Inorganic, N.O.S. (Contains Zinc Chloride, Hydrochloric Acid)
Identification Number: UN3264 Hazard Class(es): 8
Packing Group: III Corrosive

SECTION 15 - REGULATORY INFORMATION
SARA 302 Components No Chemicals in this material are subject to the reporting requirement of SARA Title III, Section 302.
SARA 313 Components This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
SARA 302 Components Fire Hazard, Acute Health Hazard, Chronic Health Hazard

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

THIS PRODUCT IS ROHS 2 COMPLIANT

SDS. Superior No. 23. Page 5 of 6
SECTION 16 - OTHER INFORMATION

Further information:
Judgments as to the suitability of information herein or the purchaser's purposes are necessarily the purchaser's responsibility. The above information does not represent any guarantee of the properties of the product. It is believed to be correct, but does not purport to be all inclusive and should be used only as a guide. Reasonable care has been taken in the preparation of this material, and is based on the present state of our knowledge.

Superior Flux & Mfg. Co. shall not be held liable for any damage resulting from handling or from contact with the above product.

Reference(s):
Zaclon – SDS for Product Zinc Chloride

Preparation information
Superior Flux & Mfg. Co.
440-349-3000