

MATERIAL SAFETY DATA SHEET

Date Prepared: October 12, 1988

Emergency Phone No. 214/590-5000

File No. MSDS8/2

Identity: Soft Flow Alloy, SFAG-8-5, 0386-0488

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This MSDS is based on air/fuel or oxy/fuel process. There may be other cautions for electric process.

**SECTION II - Hazardous Ingredients/Identify Information**

| Hazardous Components | (Specific Chemical Identity) | CAS No.    | Common Name(s) | mg/m <sup>3</sup> | mg/m <sup>3</sup> | OTHER LIMITS |
|----------------------|------------------------------|------------|----------------|-------------------|-------------------|--------------|
|                      |                              |            |                | OSHA PEL          | ACGIH TLV         | RECOMMENDED  |
|                      | <u>Metal</u>                 |            |                |                   |                   |              |
| Tin                  |                              | 7440-31-5  |                | 2.0               | 2.0               | N/A          |
| Silver               |                              | 7440-22-4  |                | 0.0               | 0.1               | N/A          |
|                      | <u>Flux</u>                  |            |                |                   |                   |              |
| Zinc Chloride        |                              | 7646-85-7  |                | 1.0               | 2.0               |              |
| Ammonium Chloride    |                              | 12125-02-9 |                | 10.0*             | 1.0               |              |

\*As NH<sub>4</sub>Cl Fumes

**SECTION III - Physical/Chemical Characteristics**

Boiling Point - Flux = 650°F, Tin - 2270°C, Silver 2212°C, Vapor Pressure(mmHg) - N/A |  
 Solubility in Water - Flux - 100%, Metal - None | Appearance & Odor - Metallic, Grey Color, Odorless |  
 Vapor Density (AIR=1) - 7.1 | Melting Point - 221°C | Evaporation Rate, Butyl Acetate = 1 - N/A

**SECTION IV - Fire and Explosion Hazard Data**

|                           |     |                  |                 |         |               |
|---------------------------|-----|------------------|-----------------|---------|---------------|
| Flash Point (Method Used) | N/A | Flammable Limits | OZ/1000 cu. ft. | LEL 220 | Not UEL Known |
|---------------------------|-----|------------------|-----------------|---------|---------------|

Extinguishing Media  
 Dry sand or other inert material.

**Special Fire Fighting Procedures**

Do not use Class "A," "B" or "C" extinguishers or halogenated agents. Use a self-contained respiratory system when volatile fire exists.

Unusual Fire and Explosion Hazards: When heated or in contact with acid it can emit toxic fumes, above 650°F flux decomposes to form ammonia, hydrogen chloride gas, zinc chloride fumes.

**SECTION V - Reactivity Data**

|           |          |                          |
|-----------|----------|--------------------------|
| Stability | Unstable | Conditions to Avoid: N/A |
|           | Stable   | X                        |

Incompatibility (Materials to Avoid) Cyanides (may release toxic HCN gas) and Sulfides (may release toxic H<sub>2</sub>S gas)

Hazardous Decomposition or Byproducts: Will not occur except at high temperatures.

|                |                |                          |
|----------------|----------------|--------------------------|
| Hazardous      | May Occur      | Conditions to Avoid: N/A |
| Polymerization | Will not Occur | X                        |

**SECTION VI - Health Hazard Data**

|                    |             |       |            |
|--------------------|-------------|-------|------------|
| Route(s) of Entry: | Inhalation? | Skin? | Ingestion? |
|                    | Yes         | Yes   | Yes        |

## Health Hazards (Acute and Chronic)

Eyes: Eye irritant - Flush eyes with water for at least 15 minutes..see a physician immediately. Skin: Causes burns on contact. Immediately flush with plenty of water. Remove contaminated clothing. Call a physician. Ingestion: Will cause burns to mouth, throat & digestive tract. Give large quantities of water or milk to dilute. DO NOT INDUCE VOMITING. Call a physician.

Inhalation: Zinc Chloride Flux fumes may cause irritation of the respiratory tract. Remove from exposure & place individual under care of a physician if necessary.

|                  |      |                  |                 |
|------------------|------|------------------|-----------------|
| Carcinogenicity: | NTP? | IARC Monographs? | OSHA Regulated? |
|------------------|------|------------------|-----------------|

This product has not been listed as a suspect carcinogen by NTP, IARC or OSHA

**SECTION VII - Precautions for Safe Handling and Use**

Sweep up spillage. Flush area with plenty of water to an approved chemical sewer.

## Waste Disposal Method:

Comply with Federal, State & Local regulations. Product may be transferred to a disposal contractor.

## Precautions to Be Taken in Handling and Storing:

Keep in tightly closed container.

## Other Precautions:

N/A

**SECTION VIII - Control Measures**

## Respiratory Protection (Specify Type):

None necessary if used with proper local ventilation.

|             |  |         |     |
|-------------|--|---------|-----|
| Ventilation | Local Exhaust - Recommended while soldering        | Special | N/A |
|             | Mechanical (General) - Recommended while soldering | Other   | N/A |

## Protective Gloves:

Should be worn while soldering

## Eye Protection

Safety glasses or face shield recommended

## Other Protective Clothing or Equipment:

None required

Work/Hygienic Practices: Wash hands after using. KEEP OUT OF REACH OF CHILDREN