MATERIAL SAFETY DATA SHEET

MAY BE USED TO COMPLY WITH OSHA'S HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200 AND SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA) OF 1986 PUBLIC LAW 99-499. STANDARD SHOULD BE CONSULTED FOR SPECIFIC REQUIREMENTS.

SECTION I (IDENTIFICATION)

MANUFACTURER/ SUPPLIERS NAME: **EUTECTIC CORPORATION** N94 W14355 Garwin Mace Drive Menomonee Falls, WI 53051 USA

TELEPHONE NUMBER: 1-800-558-8524

PRODUCT NAME: **EutecStainTin SN 1199**

PRODUCT CLASSIFICATION: **Tin Silver Alloy Powder**

SECTION II (HAZARDOUS INGREDIENTS/IDENTITY INFORMATION)

IMPORTANT: This section covers the materials from which these products are manufactured. The fumes and gases produced during normal use of these products are covered in Section V. The term "Hazardous" in "Hazardous Ingredients" should not only be interpreted as a term required and defined in OSHA Hazard Communication Standard (29 CFR Part 1910.1200), but also as defined by other regulatory agencies. The chemicals or compounds subject to reporting under Title III, in Section 313, of the Superfund Amendments and Reauthorization Act (SARA) are marked by the symbol #.

WARNING: This product contains or produces a chemical known to the State of California to cause birth defects (or other reproductive harm) and cancer. (California Health & Safety Code 25249.5 et seq.)

	CAS	Exposure Limit (mg/m^3)		
INGREDIENTS	**NUMBER**	**OSHA PEL**	**ACGIH-TLV**	**Percent Ingredients (by Weight)**
Tin	7440-31-5	2	2	60 – 100
Silver #	7440-22-4	0.01	0.1	2 – 7

SECTION III. (PHYSICAL DATA)

Grey powder, no characteristic odor. Specific Gravity: 7.4 Melting point: 1670 ° F - 1742 ° F

SECTION IV (FIRE AND EXPLOSION HAZARD DATA)

Flames can ignite combustibles. Refer to American National Standard Z49.1 for fire prevention during welding/brazing. Use Class D extinguisher, dry sand or other inert extinguishing material. Do not use Class "A", "B", or "C" extinguishers or halogenated agents. Tin powder with a particle size of less than 74 microns is classified as a moderate explosive in a dust cloud by the US Bureau of Mines, report RI-6516. Rating under National Fire Protection 704: Health, 2; Flammability, 1; Reactivity, 0.
Ignition Temperature: Cloud 1166 ° F Layer 806 ° F
Minimum Explosive Concentration: 220 oz / 1000 ft^3

SECTION V (REACTIVITY DATA)

STABILITY: Stable Boiling Point: Tin: 4118 ° F Silver: 4014 ° F
INCOMPATIBILITY (Conditions to avoid): Open flames, strong acids, sulfur, chlorine, sodium and potassium peroxide.
HAZARDOUS POLYMERIZATION: will not occur.
HAZARDOUS DECOMPOSITION OR BYPRODUCTS: Carbon dioxide, carbon monoxide generated on heating. Reaction with strong acids can produce toxic organic or inorganic tin compounds.
Dust should be kept at a minimum. Brazing and soldering fumes cannot be classified simply. The composition and quantity of both are dependent upon the metal being brazed, the process, procedure, and the filler material used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being soldered (such as paint, plating, or galvanizing), the number of workers and the volume of the work area, the quality and the amount of ventilation, position of the workers' head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and decreasing activities).

When the material is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section II. Fume and decomposition products, not the ingredients in the flux are important. Decomposition products include those originating from the volatilization, reaction, or oxidation of materials in Section II, plus those from the base metal and coating, etc., as noted above. These components are virtually always present as complex oxides and not as metals (Characterization of Arc Welding Fume: American Welding Society). Monitor fume levels.

One recommended way to determine the composition and quantity of fumes and gas to which workers are exposed is to take an air sample inside the welder's helmet if worn, or in the worker's breathing zone (see ANSI/AWS F1.1, F1.2, F1.3, F1.4, and F1.5, available from the "American Welding Society," 550 N.W. LeJeune Road, Miami, FL 33126).

SECTION VI (HEALTH HAZARD DATA)

Threshold Limit Value: The ACGIH 1999 preface states: "The TLV-TWA should be used as guides in the control of health hazards and should not be used as firm lines between safe and dangerous concentrations." See Section V for specific fume constituents which may modify the TLV. Persons with sensitive skin should avoid contact with product.

Effects of Overexposure:

FUMES AND GASES can be dangerous to your health. **PRIMARY ROUTES OF ENTRY** are the respiratory system, skin contact, or ingestion. **PREEXISTING** respiratory or allergic conditions may be aggravated in some individuals.

SHORT TERM (ACUTE) AND CHRONIC OVEREXPOSURE to fumes may result in discomfort such as dizziness, nausea, or dryness or irritation of nose, throat or eyes. Dust exposure may cause localized or generalized argyrosis (pigmentation of skin, eyes, and nails). Possible damage to the eyes. Symptoms and effects to exposure are listed below:

TIN: Certain tin salts are mild irritants to the skin and mucous membranes. May also result in irritation to skin, eyes, and respiratory system. Exposure to fume can cause stannosis (a benign pneumoconiosis / lung condition), shortness of breath, and respiratory tract infection.

SILVER: Certain silver compounds have shown toxicity in animal studies. Chronic exposure via inhalation may cause argyria.

Emergency &First Aid Procedures: Call for medical aid. Employ first aid techniques recommended by The American Red Cross. **SWALLOWING:** Call a physician or your poison control center at once. Advise of Section II. **SKIN:** Wash thoroughly with water to remove all residue. If a rash develops, call a physician. **INHALATION:** Remove to fresh air. **EYES:** Flush with water for at least 15 minutes to remove all residue. Get medical attention immediately.

CARCINOGENICITY

WELDING FUMES (not otherwise specified) are considered to be carcinogenic defined with no further categorization by **NIOSH** and **IARC**.

SECTION VII (PRECAUTION FOR SAFE HANDLING AND USE/APPLICABLE CONTROL MEASURES)

Steps to be taken if material is released or spilled: Wear protective clothing, goggles and a NIOSH approved respirator. Sprinkle moderately with damp sand and collect for disposal avoiding dust clouds as much as possible.

Waste disposal method: Dispose of in accordance with all federal state, and local regulations.

SECTION VIII (SPECIAL PROTECTION INFORMATION)

Read and understand the manufacturer's instructions and precautionary label on this product. See American National Standard Z49.1 Safety in Welding and Cutting, published by the American Welding Society, P.O. Box 351040, Miami FL 33135 and OSHA Publication 2206 (29CFR 1910), U. S. Government Printing Office, Washington, D.C. 20402 for more detail on the following:

Ventilation: Use enough ventilation, local exhaust at the arc, or both, to keep the fumes and gases below the TLV's in the workers breathing zone and the general area. Train the worker to keep his head out of the fumes. Maintain airflow away from user to exhaust all dusts and fumes, so that the TLV is never exceeded. Minimum face velocity of 60 f.pm. is required.

Respiratory protection: Use NIOSH/MSHA approved air respiratory protection or air supplied respirator when using in confined space or where local exhaust or ventilation does not keep exposure below TLV.

Eye protection: Wear safety goggles.

Protective Clothing: Wear head, hand, and body protection which help to prevent injury from material. See ANSI Z49.1. At a minimum, this includes chemical impervious gloves and a protective face shield or goggles and may include arm protectors, aprons, hats, shoulder protection, and any other equipment used in soldering or brazing operations as to prevent any contact.

Storage: Store in dry conditions, ambient temperatures avoiding contact with acids. Keep covered until use.

Wash thoroughly after handling to remove all residue. Remove and professionally wash contaminated clothing before reuse.

Additional precautions: Wash after use and before eating/drinking.

Exposure limits are subject to change. Contact ACGIH, OSHA, NIOSH, and IARC for current values.