

Material Safety Data Sheet

Metglas® MSF101 Tin Base Solder

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Metglas® MSF101 Tin Base Solder
OTHER/GENERIC NAMES: MSF101 Solder
PRODUCT USE: Manufacture of electrical transformers; Metal joining

MANUFACTURER: Metglas®, Inc.
 440 Allied Dr.
 Conway, SC - 29526

FOR MORE INFORMATION CALL:
 (Monday-Friday, 8:00am-5:00pm)
 1-800-581-7654

IN CASE OF EMERGENCY CALL:
 (24 Hours/Day, 7 Days/Week)
 1-800-581-7654 or Chemtrec 1-800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT NAME</u>	<u>CAS NUMBER</u>	<u>WEIGHT %</u>
Antimony	7440-36-0	7 - 13
Silver	7440-22-4	20 - 30
Tin	7440-31-5	60 - 70

Trace impurities and additional material names not listed above may also appear in Section 15 toward the end of the MSDS. These materials may be listed for local "Right-To-Know" compliance and for other reasons.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: A shiny metallic foil. As shipped, the primary hazard is the sharp edges of the product. If melted in a fire, toxic fumes may be released.

POTENTIAL HEALTH HAZARDS

This material is non-hazardous as shipped. Potential health hazards are related to dusts, vapors and fumes that may be generated during grinding, sanding, cutting and/or welding.

SKIN: Handling of sharp edges may cause cuts. Repeated contact may result in irritation or dermatitis.

EYES: Not a normal route of entry. Solid particles generated by grinding and sanding may cause irritation.

INHALATION: Vapors and fumes resulting from the grinding, sanding, cutting and/or welding of this material are harmful if inhaled. Symptoms may include irritation of throat and respiratory tract. Exposures may result in "metal fume fever" which can produce flu-like symptoms.

INGESTION: Not a route of entry.

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DELAYED EFFECTS: Repeated handling may result in irritation or dermatitis. Chronic inhalation may result in toxic lung effects. Chronic inhalation of silver may cause a condition (argyria) characterized by blue-gray discoloration of the eyes, skin and mucous membranes.

Ingredients found on one of the OSHA designated carcinogen lists are listed below.

<u>INGREDIENT NAME</u>	<u>NTP STATUS</u>	<u>IARC STATUS</u>	<u>OSHA LIST</u>
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No ingredients listed in this section.

Health Rating (HMIS): Health: 2 Fire: 0 Reactivity: 0 Special: None

4. FIRST AID MEASURES

SKIN: Wash hands with soap and water.

EYES: For irritation caused by particles of dust flush eyes with running water. Seek medical assistance if irritation persists.

INHALATION: Remove to fresh air immediately. If breathing is difficult, get immediate medical assistance. Oxygen may be given by a person trained and qualified to administer it.

INGESTION: Not a route of entry.

ADVICE TO PHYSICIAN: Treat symptomatically.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT:	None
FLASH POINT METHOD:	Not applicable
AUTOIGNITION TEMPERATURE:	Not applicable
UPPER FLAME LIMIT (volume % in air):	Not applicable
LOWER FLAME LIMIT (volume % in air):	Not applicable
FLAME PROPAGATION RATE (solids):	Not determined
OSHA FLAMMABILITY CLASS:	Not

EXTINGUISHING MEDIA:

Use any standard agent for surrounding fire.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

None

SPECIAL FIRE FIGHTING PRECAUTIONS/INSTRUCTIONS:

Toxic and irritating vapors may be released if the product melts or burns in a fire. Use self-contained respiratory protection.

6. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR OTHER RELEASE:

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Material is shipped as an article. Pick up and place into proper storage. Use caution in handling as edges are very sharp.

Spills and releases may have to be reported to Federal and/or local authorities. See Section 15 regarding reporting requirements.

7. HANDLING AND STORAGE

NORMAL HANDLING: (Always wear recommended personal protective equipment.)

Handle with care. Edges of material are very sharp.

STORAGE RECOMMENDATIONS:

Store in a facility that will protect product from physical damage and/or contamination with foreign material. (Do not exposure to moisture or any other substance.)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

Use mechanical ventilation when cutting, grinding, sanding and/or welding product.

PERSONAL PROTECTIVE EQUIPMENT

SKIN PROTECTION:

Wear cut-resistant gloves.

EYE PROTECTION:

Wear safety glasses when grinding, sanding, cutting and/or welding product.

RESPIRATORY PROTECTION:

If necessary to meet exposure limits listed in section 8, wear an air-purifying respirator during grinding, sanding, cutting and/or welding activities.

ADDITIONAL RECOMMENDATIONS:

A safety shower, eyewash or another source of running water should be available in areas where grinding, sanding, cutting and/or welding operations take place.

EXPOSURE GUIDELINES

<u>INGREDIENT NAME</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>	<u>OTHER LIMIT</u>
Antimony	0.5 mg/m ³ (TWA)	0.5 mg/m ³ (TWA)	None
Silver	0.1 mg/m ³ (TWA)	0.01 mg/m ³ (TWA)	None
Tin	2 mg/m ³ (TWA)	2 mg/m ³ (TWA)	None

*** = Biological Exposure Index (ACGIH).

OTHER EXPOSURE LIMITS FOR POTENTIAL DECOMPOSITION PRODUCTS:

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9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	A shiny metallic foil.	
PHYSICAL STATE:	Solid	
MOLECULAR WEIGHT:	Mixture	
CHEMICAL FORMULA:	Mixture	
ODOR:	None	
SPECIFIC GRAVITY (water = 1.0):	7.80	
SOLUBILITY IN WATER (weight %):	None	
pH:	Not applicable	
BOILING POINT:	Not applicable	
MELTING POINT:	448 - 457 °F (231 - 236 °C)	
VAPOR PRESSURE:	Not applicable	
VAPOR DENSITY (air = 1.0):	Not applicable	
EVAPORATION RATE:	Not applicable	COMPARED TO:
% VOLATILES:	None	
FLASH POINT:	None	

(Flash point method and additional flammability data are found in Section 5.)

10. STABILITY AND REACTIVITY

NORMALLY STABLE? (CONDITIONS TO AVOID):

Normally stable.

INCOMPATIBILITIES:

Product can be attacked by moisture and corrosive materials.

HAZARDOUS DECOMPOSITION PRODUCTS:

Toxic vapors and metallic fumes may be released if melted in a fire (see section 3).

HAZARDOUS POLYMERIZATION:

Not applicable.

11. TOXICOLOGICAL INFORMATION

IMMEDIATE (ACUTE) EFFECTS:

Antimony: LD50 (oral, rat) 7g/kg Can cause 'metal fume fever' with flu-like symptoms.

DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS:

Antimony: Repeated contact can cause skin irritation and dermatitis. Chronic inhalation may result in irritation to the lungs and adverse effects to the cardiovascular system.

Silver: Long term over exposure can result in argyria.

Tin: Chronic inhalation of tin (tin oxide) fumes can cause stannosis.

OTHER DATA:

None

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Not anticipated to present an ecological hazard.

13. DISPOSAL CONSIDERATIONS**RCRA**

Is the unused product a RCRA hazardous waste if discarded? No
If yes, the RCRA ID number is:

OTHER DISPOSAL CONSIDERATIONS: Observe all Federal, State, and Local Environmental regulations. . Some local regulations may restrict disposal of metallic waste based on composition. Recycling of metallic products is recommended where recycling programs are available.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

14. TRANSPORT INFORMATION

US DOT PROPER SHIPPING NAME: Not regulated.
US DOT HAZARD CLASS: Not regulated.
US DOT ID NUMBER: Not regulated.

For additional information on shipping regulations affecting this material, contact the information number found in Section 1.

15. REGULATORY INFORMATION**TOXIC SUBSTANCES CONTROL ACT (TSCA)**

TSCA INVENTORY STATUS: An article manufactured from ingredients listed on the TSCA Inventory.
OTHER TSCA ISSUES: None

SARA TITLE III/CERCLA

"Reportable Quantities" (RQs) and/or "Threshold Planning Quantities" (TPQs) exist for the following ingredients.

<u>INGREDIENT NAME</u>	<u>SARA/CERCLA RQ (lb)</u>	<u>SARA EHS TPQ (lb)</u>
Antimony	5000	None
Silver	1000	None

Spills or releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center [(800) 424-8802] and to your Local Emergency Planning Committee.

SECTION 311 HAZARD CLASS: Not hazardous as shipped.

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The following ingredients are SARA 313 "Toxic Chemicals". CAS numbers and weight percents are found in Section 2.

INGREDIENT NAME

Antimony
Silver

COMMENT

None
None

STATE RIGHT-TO-KNOW

In addition to the ingredients found in Section 2, the following are listed for state right-to-know purposes.

INGREDIENT NAME**WEIGHT %****COMMENT**

No ingredients listed in this section.

ADDITIONAL REGULATORY INFORMATION:

None

WHMIS CLASSIFICATION (CANADA):

Not a controlled product: Basis: As shipped.

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

FOREIGN INVENTORY STATUS:

Article: Ingredients are listed on Canadian DSL and European EINECS.

16. OTHER INFORMATION

CURRENT ISSUE DATE: October 12, 2007

PREVIOUS ISSUE DATE: October, 2003

CHANGES TO MSDS FROM PREVIOUS ISSUE DATE ARE DUE TO THE FOLLOWING:

Content review and added HMIS Rating in Section 3.

OTHER INFORMATION: Contact Metglas®, Inc. if you have specific questions regarding the handling of or applications for this product.