



SAFETY DATA SHEET

1. Identification

Product identifier Solder-Safe 95/5 Lead-Free Solder

Other means of identification

SDS number WC006

Recommended use Solder.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer/Supplier Worthington Cylinder Corporation

Address 200 Old Wilson Bridge Road
Columbus, OH 43085
United States

Email: cylinders@worthingtonindustries.com

Telephone Number: 866-928-2657

CHEMTREC - 24 HOURS:

Within US and Canada 800-424-9300

Outside US and Canada +1 703-741-5970 (collect calls accepted)

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Hazard symbol None.

Signal word None.

Hazard statement None.

Precautionary statement

Prevention Observe good industrial hygiene practices.

Response Wash thoroughly after handling.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) Molten material will produce thermal burns.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Tin	7440-31-5	90 - 98
Antimony	7440-36-0	2 - 10

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation Immediately remove from further exposure. Get immediate medical assistance. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. Give supplemental oxygen, if available. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

Skin contact	Remove contaminated clothes and rinse skin thoroughly with water for at least 15 minutes. If skin rash or an allergic skin reaction develops, get medical attention.
Eye contact	Rinse immediately with plenty of water for at least 15 minutes. Remove any contact lenses. Get medical attention if irritation develops or persists.
Ingestion	Immediately rinse mouth and drink a cupful of water. Never give anything by mouth to a victim who is unconscious or is having convulsions. Only induce vomiting at the instruction of medical personnel. Get medical attention immediately.
Most important symptoms/effects, acute and delayed	Elevated temperatures or mechanical action may form dust and fumes which may be irritating to the eye, mucous membranes and respiratory tract. Contact with molten material may cause thermal burns.
Indication of immediate medical attention and special treatment needed	Treat symptomatically. Exposure may aggravate pre-existing respiratory disorders, diseases of the kidney, liver and nervous system. Symptoms may be delayed.
General information	Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media	Extinguish with foam, carbon dioxide or dry powder.
Unsuitable extinguishing media	Do not use water or halogenated extinguishing media.
Specific hazards arising from the chemical	Fire or high temperatures create: Metal oxides.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do it without risk.
General fire hazards	Solid metal is not flammable; however, finely divided metallic dust or powder may form an explosive mixture with air.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Avoid inhalation of dust from the spilled material. Wear protective clothing as described in Section 8 of this SDS. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
Methods and materials for containment and cleaning up	Stop leak if you can do so without risk. Local authorities should be advised if significant spillages cannot be contained. For a dry material spill, use a HEPA (high efficiency particle air) vacuum to collect material and place in a sealable container for disposal. Avoid dust formation. Recover and recycle, if practical. Keep out of water supplies and sewers.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not contaminate water. If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

7. Handling and storage

Precautions for safe handling	Wear appropriate personal protective equipment (See Section 8). Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation at places where dust is formed. Avoid inhalation of dust and fumes. Avoid contact with skin and eyes. Do not get this material on clothing. Do not eat, drink or smoke when using the product. Wash thoroughly after handling. Avoid release to the environment. Inadvertent contaminants to product such as moisture, ice, snow, grease, or oil can cause an explosion when charged to a molten metal bath or metal furnace (preheating metal will remove moisture from product). Any surface that comes in contact with molten metal must be preheated or specially coated and rust free.
Conditions for safe storage, including any incompatibilities	Store in tightly closed original container in a dry, cool and well-ventilated place. Store in a closed container away from incompatible materials. Keep out of reach of children. Keep away from food, drink and animal feedingstuffs. Do not place product, by-products, dust, or product waste in galvanized or aluminum containers.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Antimony (CAS 7440-36-0)	PEL	0.5 mg/m ³
Tin (CAS 7440-31-5)	PEL	2 mg/m ³

US. ACGIH Threshold Limit Values

Components	Type	Value
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³
Tin (CAS 7440-31-5)	TWA	2 mg/m ³

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³
Tin (CAS 7440-31-5)	TWA	2 mg/m ³

Biological limit values	No biological exposure limits noted for the ingredient(s).
Exposure guidelines	No exposure standards allocated.
Appropriate engineering controls	Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of dust. Keep melting/soldering temperatures as low as possible to minimize the generation of fume. Shower, hand and eye washing facilities near the workplace are recommended.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear safety glasses with side shields (or goggles). Wear a face shield when working with molten material.
Skin protection	
Hand protection	Wear protective gloves (i.e. latex, nitrile, neoprene).
Other	Chemical resistant clothing is recommended.
Respiratory protection	Use a respirator when local exhaust or ventilation is not adequate to keep exposures below the OEL. In a confined space a supplied respirator may be required. Selection and use of respiratory protective equipment should be in accordance with OSHA General Industry Standard 29 CFR 1910.134; or in Canada with CSA Standard Z94.4. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.
Thermal hazards	Heat resistant/insulated gloves and clothing are recommended when working with molten material.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	Silver to silver-gray metallic metal.
Physical state	Solid.
Form	Wire.
Color	Silver to gray.
Odor	Odorless.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	232 °F (111.11 °C) (Tin)
Initial boiling point and boiling range	2516 °F (1380 °C) (Antimony) 4100 °F (2260 °C) (Tin)
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.

Vapor pressure Not available.

Vapor density Not available.

Relative density 5.77 - 5.84

Solubility(ies)

Solubility (water) Not soluble

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity Not available.

10. Stability and reactivity

Reactivity The product is non-reactive under normal conditions of use, storage and transport.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions Hazardous polymerization does not occur.

Conditions to avoid Contact with incompatible materials. Avoid molten metal contact with water.

Incompatible materials Chlorine. Turpentine. Strong acids. Strong bases. Nascent hydrogen. Reducing agents. Fluorine. Bromine.

Hazardous decomposition products Toxic metal oxides are emitted when heated above the melting point. Under reducing condition, such as any strong acid or base plus an active metal, or in the presence of nascent hydrogen, highly toxic stibine gas (TLV = 0.10 ppm) may be evolved.

11. Toxicological information

Information on likely routes of exposure

Inhalation Elevated temperatures or mechanical action may form dust and fumes which may be irritating to the mucous membranes and respiratory tract. Lung damage and possible pulmonary edema can result from dust exposure. Inhalation of fumes may cause a flu-like illness called metal fume fever.

Skin contact Dust may irritate skin. Contact with molten material may cause thermal burns.

Eye contact Elevated temperatures or mechanical action may form dust and fumes which may be irritating to the eye.

Ingestion Ingestion of dusts generated during working operations may cause nausea and vomiting.

Symptoms related to the physical, chemical and toxicological characteristics Elevated temperatures or mechanical action may form dust and fumes which may be irritating to the eye, mucous membranes and respiratory tract. Contact with molten material may cause thermal burns.

Information on toxicological effects

Acute toxicity May cause eye, skin and respiratory tract irritation. Exposure to antimony and its compounds can cause gastrointestinal pain, cough, loss of appetite, itching, skin eruptions, and irritation of skin, eyes, nose and throat.

Skin corrosion/irritation Dust may irritate skin.

Serious eye damage/eye irritation Elevated temperatures or mechanical action may form dust and fumes which may be irritating to the eye.

Respiratory or skin sensitization

Respiratory sensitization No sensitizing effects known.

Skin sensitization No sensitizing effects known.

Germ cell mutagenicity No data available.

Carcinogenicity Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity	No data available.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not relevant, due to the form of the product.
Chronic effects	Prolonged and repeated overexposure to dust and fumes can lead to benign pneumoconiosis (stannosis). Exposure to antimony and its compounds can cause headache, sleeplessness, dizziness, metallic taste, ulcers, weight loss, nausea, vomiting, diarrhea, impairment of sense of smell, and pain or tightness in chest.
Further information	No other specific acute or chronic health impact noted.

12. Ecological information

Ecotoxicity	Harmful to aquatic life with long lasting effects.
Persistence and degradability	The product is not biodegradable.
Bioaccumulative potential	No data available.
Mobility in soil	Alloys in massive forms are not mobile in the environment.
Other adverse effects	None expected.

13. Disposal considerations

Disposal instructions	Dispose in accordance with all applicable regulations.
Local disposal regulations	Dispose of in accordance with local regulations.
Hazardous waste code	Not regulated.
Waste from residues / unused products	Dispose of in accordance with local regulations. Scrapped material should be sent for refining to recover precious metal content. Solid metal and alloys in the form of particles may be reactive. Its hazardous characteristics, including fire and explosion, should be determined prior to disposal.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Antimony (CAS 7440-36-0)

LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - No
 Delayed Hazard - No
 Fire Hazard - No
 Pressure Hazard - No
 Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Antimony	7440-36-0	2 - 10

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Antimony (CAS 7440-36-0)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US. Massachusetts RTK - Substance List

Antimony (CAS 7440-36-0)

Tin (CAS 7440-31-5)

US. New Jersey Worker and Community Right-to-Know Act

Antimony (CAS 7440-36-0)

Tin (CAS 7440-31-5)

US. Pennsylvania Worker and Community Right-to-Know Law

Antimony (CAS 7440-36-0)

Tin (CAS 7440-31-5)

US. Rhode Island RTK

Antimony (CAS 7440-36-0)

US. California Proposition 65

Not Listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 28-May-2015

Revision date -

Solder-Safe 95/5 Lead-Free Solder

908010 Version #: 01 Revision date: - Issue date: 28-May-2015

SDS US

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Version # 01
Further information HMIS® is a registered trade and service mark of the NPCA.
HMIS® ratings Health: 1
Flammability: 0
Physical hazard: 0

NFPA ratings



References

ACGIH
EPA: AQUIRE database
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices

Disclaimer

All information in this Material Safety Data Sheet is believed to be accurate and reliable. However, no guarantee or warranty of any kind is made with regard to the accuracy of information or the suitability of the recommendations contained herein. It is the user's responsibility to assess the safety and toxicity of this product under their own conditions of use and to comply with all applicable laws and regulations.