

Issue date 24-Sep-2018

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Revision Number 1

1. IDENTIFICATION

Product identification

Product identifier	Certanium® Solid Solder
Other means of identification	P52064M01
Recommended use	Solder Alloy
Restrictions on use	For industrial use only

Supplier

Corporate Headquarters:
Lawson Products, Inc.
8770 W. Bryn Mawr Ave., Suite 900
Chicago, IL 60631
(866) 837-9908

Canadian Distribution Center:
Lawson Canada
7315 Rapistan Court
Mississauga, ON L5N 5Z4
(800) 323-5922

24 Hour Emergency Phone Number (888) 426-4851 (Prosar)

2. HAZARD(S) IDENTIFICATION

Hazard Classification This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation	Category 4
Serious eye damage/eye irritation	Category 2A
Respiratory sensitization	Category 1
Skin sensitization	Category 1
Germ cell mutagenicity	Category 1A
Carcinogenicity	Category 1A
Reproductive toxicity	Category 1A
Hazardous to the aquatic environment	Category 2
Hazardous to the aquatic environment, long-term hazard	Category 2

Symbol



Signal word

DANGER

Hazard statements

H302 - Harmful if swallowed
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H332 - Harmful if inhaled
H335 - May cause respiratory irritation
H373 - May cause damage to organs through prolonged or repeated exposure
H413 - May cause long lasting harmful effects to aquatic life
H401 - Toxic to aquatic life
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H340 - May cause genetic defects
H350 - May cause cancer
H360 - May damage fertility or the unborn child

Precautionary statements**General**

P101 - If medical advice is needed, have product container or label at hand
P102 - Keep out of reach of children
P103 - Read label before use.

Prevention

P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P233 - Keep container tightly closed
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P263 - Avoid contact during pregnancy/while nursing
P264 - Wash skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing should not be allowed out of the workplace
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing and eye/face protection

Response**General**

P321 - For Specific treatment see section 4 of this sds
P314 - Get medical advice/attention if you feel unwell.
P312 - Call a POISON CENTER or doctor if you feel unwell

Eyes

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Skin

P362 - Take off contaminated clothing and wash before reuse
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P308 + P313 - IF exposed or concerned: Get medical advice/attention

Inhalation

P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician
P304 + P312 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell

Ingestion

P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting

Storage

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up

Disposal

P501 - Dispose of contents/container in accordance with local, regional, national, and

international regulations as applicable

Hazard(s) Not Otherwise Classified (HNOC)

Not available.

Physical Hazards Not Otherwise Classified (PHNOC)

Not available.

Unknown acute toxicity

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS**Composition**

Mixture.

Chemical name	CAS-No	Weight %
Tin	7440-31-5	62
Lead	7439-92-1	36
Rosin	65997-05-9	2.5-3
Silver	7440-22-4	2

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or environment and hence require reporting in this section

4. FIRST-AID MEASURES**Necessary first-aid measures****Inhalation**

Remove from exposure. If not breathing, if breathing is irregular, or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Seek medical attention immediately. Advise of chemical composition (Sec. 3 of this SDS).

Ingestion

Drink plenty of water. Induce vomiting, but only if victim is fully conscious. Seek medical attention immediately. Advise of chemical composition (Sec. 3 of this SDS).

Skin contact

Wash off immediately with plenty of water. If skin irritation or rash occurs, get medical advice/attention.

Eye contact

Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. Consult a physician.

Most important symptoms (acute)

May cause drowsiness or dizziness. May cause eye irritation. Tearing, redness. May cause skin irritation. Excessive inhalation of fumes may cause 'Metal Fume Fever' with flu-like symptoms such as chills, fever, body aches, vomiting, sweating, etc. Inhalation can cause central nervous system (CNS) depression.

Most important symptoms (over-exposure)

Systemic poisoning with symptoms of metallic taste, anemia, insomnia, weakness, constipation, abdominal pain, gastrointestinal disorders, joint and muscle pain and muscular weakness. May cause damage to the blood forming, nervous, kidneys and reproductive systems. Damage may include reduced fertility in both men and women, damage to the fetus of exposed pregnant women, anemia, muscular weakness and kidney dysfunction.

Indication of any immediate medical attention and special treatment needed

Not available.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	Carbon dioxide (CO ₂). Dry chemical.
Unsuitable extinguishing media	Do not use water on molten metal. Large fires may be flooded with water from a safe distance.
Specific hazards	Finely divided dust may form explosive mixture with air. Never drop water or liquids into molten solder. Do not plunge wet or damp solder bars/ pieces into molten solder. Rosin may decompose during heating to form about 5% turpentine (TLV= 100 PPM).
Special protective equipment for fire-fighters	Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Gloves should be worn when handling to prevent cuts. Solid objects may be picked up and placed in a container. Make sure the solid objects are at room temperature before handling. Wear appropriate respirator and protective clothing as needed to avoid eye contact and inhalation of dust.
Methods and materials for containment and cleaning up	Ensure adequate ventilation. Solder is recyclable. Vacuuming is recommended for metal dust from sawing / grinding operations. Reclaim into containers for reuse, recycle, or proper disposal. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container.

7. HANDLING AND STORAGE

Precautions for safe handling	Wet or moist Ingots WILL present an explosion hazard when submerged in molten solder. Avoid fire/explosion risks. Always preheat ingot before charging into furnace.
Conditions for safe storage, including any incompatibilities	Store in a cool, dry, and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	OSHA PEL (TWA)	ACGIH OEL (TWA)	NIOSH - TWA
Tin	2 mg/m ³ TWA	2 mg/m ³ TWA	2 mg/m ³ TWA 2 mg/m ³ TWA
Lead	50 µg/m ³ TWA 50 µg/m ³ TWA	0.05 mg/m ³ TWA	0.050 mg/m ³ TWA 0.050 mg/m ³ TWA
Rosin	-	-	-
Silver	0.01 mg/m ³ TWA	0.1 mg/m ³ TWA	0.01 mg/m ³ TWA

Appropriate engineering controls	A safety shower and eye wash station should be available for emergency use. Local mechanical exhaust ventilation should be used at sources of air contamination, such as open process equipment, or during purging operations, to capture gases and fumes that may be emitted. Use process enclosures, local exhaust ventilation, or other controls to keep air containment concentration below current applicable OSHA permissible exposure limit or ACGIH TLV limit, and volatiles below lower explosive limit.
Individual protection measures, such as personal protective equipment	
Eye protection	Wear approved safety glasses or welding goggles appropriate to the procedure.
Skin and body protection	Protective gloves are recommended, especially for high temperature applications to prevent

burns. Leather gloves. Heat-resistant protective clothing. Protective shoes or boots.

Respiratory protection

Avoid breathing dust. Use a NIOSH/MSHA approved respirator in dusty environments.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Washing hands, face, neck and arms thoroughly before eating or smoking is recommended. Remove and wash contaminated clothing before re-use. Contaminated work clothing should not be allowed out of the workplace.

Canadian Province Occupational Exposure Limits

Chemical name	Alberta OEL	British Columbia OEL	Manitoba OEL	New Brunswick - OEL	Newfoundland and Labrador - OEL	Nova Scotia - OEL	Ontario OEL	Prince Edward Island - OEL	Quebec OEL	Saskatchewan - OEL
Tin	2 mg/m ³ TWA	2 mg/m ³ TWA 2 mg/m ³ TWA	2 mg/m ³ TWA	2 mg/m ³ TWA	2 mg/m ³ TWA 2 mg/m ³ TWA	2 mg/m ³ TWA	2 mg/m ³ TWA 2 mg/m ³ TWA	2 mg/m ³ TWA 2 mg/m ³ TWA	2 mg/m ³ TWA 2 mg/m ³ TWA	4 mg/m ³ STEL 2 mg/m ³ TWA 2 mg/m ³ TWA
Lead	0.05 mg/m ³ TWA	0.05 mg/m ³ TWA 0.05 mg/m ³ TWA	0.05 mg/m ³ TWA	0.05 mg/m ³ TWA	0.05 mg/m ³ TWA 0.05 mg/m ³ TWA	0.05 mg/m ³ TWA	0.05 mg/m ³ TWA 0.05 mg/m ³ TWA 0.05 mg/m ³ TWA 0.05 mg/m ³ TWA	0.05 mg/m ³ TWA 0.05 mg/m ³ TWA	0.05 mg/m ³ TWA 0.05 mg/m ³ TWA	0.15 mg/m ³ STEL 0.05 mg/m ³ TWA 0.05 mg/m ³ TWA
Rosin	-	-	-	-	-	-	-	-	-	-
Silver	0.1 mg/m ³ TWA	0.03 mg/m ³ STEL 0.01 mg/m ³ TWA 0.01 mg/m ³ TWA	0.1 mg/m ³ TWA	0.1 mg/m ³ TWA	0.1 mg/m ³ TWA	0.1 mg/m ³ TWA	0.1 mg/m ³ TWA	0.1 mg/m ³ TWA	0.1 mg/m ³ TWA 0.05 mg/m ³ TWA	0.3 mg/m ³ STEL 0.1 mg/m ³ TWA

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Solid
Color	Silver
Odor	Odorless
Odor threshold	No information available
pH	Not applicable
Melting point/range °C	179
Melting point/range °F	354
Boiling point/range °C	No data available
Boiling point/range °F	No data available
Flash point °C / °F	No data available
Evaporation rate	Not applicable
Flammability (Solid, Gas)	No data available

Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor pressure	Not applicable
Vapor density	Not applicable
Relative density	8.820 g/ml
Solubility	insoluble
Partition coefficient (n-octanol/water)	Not applicable
Autoignition temperature °C	No data available
Autoignition temperature °F	No data available
Decomposition temperature °C	No data available
Decomposition temperature °F	No data available
Viscosity	No data available

10. STABILITY AND REACTIVITY

Reactivity	No dangerous reactions under normal conditions of use.
Chemical stability	Stable.
Possibility of hazardous reactions	None under normal conditions of use.
Conditions to avoid	None known.
Incompatible materials	Strong acids. Strong alkalis.
Hazardous decomposition products	Small amounts of turpentine. May emit hydrogen chloride fumes (5% of flux) during soldering. Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	Dermal. Inhalation. Eyes.
Symptoms	Silver may cause discoloration of the eyes and skin. (Argyria). Prolonged or excessive exposures may result in argyria, a permanent localized blue-gray discoloration of the eye, skin, or mucous membranes. Tin exposure may cause skin irritation. Chronic exposure to high levels of airborne or ingested lead may result in anemia, insomnia, weakness, constipation, nausea, and abdominal pain. Irritant to skin and mucous membranes. Possible local irritation by contact with flux or fumes. Irritant to the eyes. Smoke during soldering can cause eye irritation. Inhalation: Flux fumes during soldering may cause irritation and damage of mucous membranes and respiratory system.
Delayed and immediate effects as well as chronic effects from short and long-term exposure	May damage fertility or the unborn child. Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Numerical measures of toxicity

Chemical name	Inhalation LC50:	Dermal LD50:	Oral LD50:
Tin	-	-	= 700 mg/kg (Rat)
Lead	-	-	-
Rosin	-	-	-
Silver	-	> 2000 mg/kg (Rat)	> 5000 mg/kg (Rat)

ATEmix (dermal) Not available

ATEmix (oral) Not available

ATEmix (inhalation-gas) Not available

ATEmix (inhalation-vapor) Not available

ATEmix (inhalation-dust/mist) Not available

Carcinogenicity

Chemical name	ACGIH OEL - Carcinogens	IARC	OSHA RTK Carcinogens	NTP
Tin	-	-	-	-
Lead	A3	Group 2A	Listed	Reasonably Anticipated
Rosin	-	-	-	-
Silver	-	-	-	-

Canadian Province carcinogenicity limits

Chemical name	Alberta - Carcinogen	British Columbia - Carcinogen	Manitoba - Carcinogen	New Brunswick - Carcinogen	Nova Scotia - Carcinogen	Quebec - Carcinogen
Tin	-	-	-	-	-	-
Lead	-	IARC 2A IARC 2B	ACGIH A3	ACGIH A3	ACGIH A3	C3 carcinogen
Rosin	-	-	-	-	-	-
Silver	-	-	-	-	-	-

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish
Tin	-	-
Lead	-	0.44: 96 h Cyprinus carpio mg/L LC50 semi-static 1.32: 96 h Oncorhynchus mykiss mg/L LC50 static 1.17: 96 h Oncorhynchus mykiss mg/L LC50 flow-through
Rosin	-	-
Silver	-	0.00155 - 0.00293: 96 h Pimephales promelas mg/L LC50 static 0.064: 96 h Lepomis macrochirus mg/L

Chemical name	Algae/aquatic plants	Fish
		LC50 static 0.0062: 96 h Oncorhynchus mykiss mg/L LC50 flow-through

Persistence and degradability Component(s) of this product are not biodegradable.

Bioaccumulation

Chemical name	CAS-No	Partition coefficient (log Kow)
Tin 7440-31-5	7440-31-5	-
Lead 7439-92-1	7439-92-1	-
Rosin 65997-05-9	65997-05-9	-
Silver 7440-22-4	7440-22-4	-

Mobility in soil Not available.

Other adverse effects Danger to drinking water if even extremely small quantities leak into the ground.

13. DISPOSAL CONSIDERATIONS

Disposal information Must not be disposed of together with household garbage. Do not allow product to reach sewage system. Dispose of all product, residues and clean-up materials in accordance with local, state, and federal regulations. Do not allow product to reach sewage system, soil, surface or ground water, or any water course. Notify proper authorities if entry occurs.

Contaminated packaging Dispose in accordance with local, state and federal regulations.

14. TRANSPORTATION INFORMATION

Shipping Descriptions

DOT
ID-No Not Regulated

TDG
ID-No Not Regulated

IATA
ID-No Not Regulated

IMDG/IMO
ID-No Not Regulated

Marine Pollutants

Chemical name	CAS-No	USDOT Marine Pollutant	Canada TDG Marine Pollutant	IMDG Marine Pollutant
Tin	7440-31-5	-	-	-
Lead	7439-92-1	-	-	-
Rosin	65997-05-9	-	-	-
Silver	7440-22-4	-	-	-

Special Precautions

Multi-modal shipping descriptions are provided for informational purposes and do not consider container size. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

15. REGULATORY INFORMATION

State regulations**U.S. state Right-to-Know regulations**

Chemical name	CAS-No	Massachusetts - RTK	New Jersey - RTK	Pennsylvania - RTK
Tin	7440-31-5	X	X	X
Lead	7439-92-1	X	X	X
Rosin	65997-05-9	-	-	-
Silver	7440-22-4	X	X	X

California Prop. 65

WARNING: This product contains a chemical(s) known to the state of California to cause cancer, birth defects or other reproductive harm

Chemical name	CAS-No	California Prop. 65
Tin	7440-31-5	-
Lead	7439-92-1	Carcinogen Developmental Female Reproductive Male Reproductive
Rosin	65997-05-9	-
Silver	7440-22-4	-

U.S. Federal Regulations**US EPA SARA 313**

See information below

Chemical name	CAS-No	CERCLA/SARA Hazardous Substances RQ	SARA 313 - Threshold Values
Tin	7440-31-5	-	-
Lead	7439-92-1	10 lb 4.54 kg	0.1 %
Rosin	65997-05-9	-	-
Silver	7440-22-4	1000 lb 454 kg 1 lb 0.454 kg	1.0 %

US EPA SARA 311/312 hazardous categorization

Not available

International inventories

All components of this product are listed on the following inventories: U.S.A. (TSCA 8(b)), Canada (DSL/NDSL) or are exempt.

Chemical name	DSL/NDSL	Inventory - United States - Section 8(b) Inventory (TSCA)	U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification
Tin	X	X	-
Lead	X	X	-
Rosin	X	X	-
Silver	X	X	-

Legend X - Listed

16. OTHER INFORMATION

NFPA

Health 2
 Flammability 0
 Instability 0

HMIS

Health 2
 Flammability 0
 Physical hazards 0

Notice: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA).

Prepared by Regulatory Affairs

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Revision note**Key to abbreviations**

ACGIH (American Conference of Governmental Industrial Hygienists)
 ATE (Average Toxicity Estimate)
 DSL/NDSL (Domestic Substance List/Non-Domestic Substance List)
 HMIS (Hazardous Materials Identification System)
 IARC (International Agency for Research on Cancer)
 IATA (International Air Transport Association)
 IMDG/IMO (International Maritime Dangerous Goods/International Maritime Organization)
 NFPA (National Fire Protection Association)
 NTP (National Toxicology Program)
 OEL (Occupational Exposure Level)
 OSHA (Occupational Safety and Health Administration of the US Department of Labor)
 PEL (Permissible Exposure Limit)
 TSCA (Toxic Substance Control Act)
 USEPA (United States Environmental Protection Agency)

Disclaimer

The information accumulated herein is believed to be accurate, but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and

suitable to their circumstances.

End of Safety Data Sheet