Canfield Technologies, Inc.
BOW Electronic Solders

Manufactured for **CHIPQUIK®**. Products covered:
SMDSW.020 1OZ SMDSW.020 4OZ
SMDSW.031 1OZ SMDSW.031 4OZ
SMDSW.020 2OZ
SMDSW.031 2OZ

Material Safety Data Sheet

1. Chemical Product & Company Information

Product Name:	Tin /Lead Alloy, Rosin Core Solder
Product Code:	
Product Use/Restriction:	Flux Cored Solder
Manufacturer Name:	Canfield Technologies/BOW Electronic Solders
Address:	1 Crossman Road, Sayreville, NJ 08872
General Phone Number:	732-316-2100
INFOTRAC	24 Hour Emergency Telephone Number: 1-800-535-5053
Website:	www.solders.com
MSDS Creation Date	1-May-14
MSDS Revision Date:	1-May-14

2. Composition & Ingredients

Chemical Name	CAS#	Ingredient Percent	EC Number
Gum rosin	8050-0907	0-10 by weight	
Proprietary ingredients	Proprietary	1 - 5 by weight	
Antimony:	7440-36-0	0-10 by weight	
Bismuth:	7440-69-9	0-10 by weight	
Copper:	7440-50-8	0-10 by weight	
Silver:	7440-22-4	0-100 by weight	
Zinc:	7440-66-6	0-10 by weight	
Tin:	7440-31-5	0-100 by weight	
Lead	7439-92-1	0-100 by weight	

3. Hazard Identification

Emergency Overview:	Warning! Severe Irritant. Potential Sensitizer. Exposure to soldering fumes and vapors may be irritating to eyes, respiratory system and skin.
Route of Exposure:	Eyes, Skin, Inhalation, Ingestion
Eye:	Smoke during soldering can cause eye irritation
Skin:	May cause irritation
Inhalation:	Inhalation of vapors, fumes or mist of this product causes severe respiratory system irritation. May cause sensitization by inhalation.
Ingestion:	May be harmful if swallowed. May cause vomiting.
Chronic Health Effects:	Suspected of damaging fertility or the unborn child. Repeated or prolonged exposure to lead and lead compounds may cause abdominal pains, diarrhea, loss of appetite, metallic taste, headache and dizziness, nausea, vomiting, lassitude, insomnia, muscle weakness, joint and muscle pain, nausea, vomiting, and irritability.
Lead:	
Carcinogenicity:	IARC: Group 2B: Possibly carcinogenic to humans.
Aggravation of pre-existing conditions:	May aggravate pre-existing respiratory disorders, allergy, eczema, or skin conditions.

4. First Aid

Eye Contact:	Immediately flush eyes with water 15 to 20 minutes. Get medical attention, if irritation or symptoms of overexposure persists.
Skin Contact:	Immediately wash skin with soap and plenty of water. Get medical attention if irritation develops or persists.
Inhalation:	If inhaled, remove to fresh air, If not breathing, give artificial respiration or give oxygen by trained personnel, seek immediate attention.
Ingestion:	If swallowed, do not induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

5. Firefighting

Flash Point:	>93ºC (>199 ºF)
Upper Flammable/Explosive Limit:	Not applicable.
Lower Flammable/Explosive Limit:	Not applicable.
Extinguishing Media:	Use alcohol resistant foam, carbon dioxide, dry chemical or water fog or spray when fighting fires involving this material.
Unsuitable Media:	Do not use a solid water stream as it may scatter and spread fire.
Protective Equipment:	As in any fire, wear Self-Contained Breathing Apparatus (SCBA), MSHA/NIOSH (approved or equivalent)and full protective gear.
Hazardous Combustion Byproducts:	Oxides of carbon, oxides of nitrogen, aliphatic aldehydes, and other organic substances may be formed during combustion. Melted solder above 1000 deg F will liberate toxic lead and / or antimony fumes.
NFPA Ratings	
NFPA Health:	2
NFPA Flammability:	1
NFPA Reactivity:	1
NFPA Other:	

6. Accidental Release Measures

Personnel Precautions:	Evacuate area and keep unnecessary and unprotected personnel from entering the spill area . Avoid breathing vapor, aerosol or mist. Avoid contact with skin, eyes and clothing.
Environmental Precautions:	Avoid runoff into storm sewers, ditches, and waterways.
Methods For Containment:	Melted solder will solidify on cooling and can be scraped up.
Methods For Cleanup:	Solidified solder can be scraped up upon cooling. Use caution to avoid breathing fumes if a gas torch is used to cut up large pieces.

7. Handling and Storage

Storage, Handling, and Shelf Life:

Storage must be in a dry, non-corrosive environment. The surface may lose its shine and appear a dull shade of grey. This is a surface phenomena and is not detrimental to product functionality. Flux cored solder wire has a limited shelf life determined by the alloy used in the wire. For alloys containing > 70% lead, the shelf life is two years from date of manufacture. Other alloys have a shelf life of three years from date of manufacture.

Health & Safety:

This product, during handling or use, may be hazardous to health or the environment. Read the Material Safety Data Sheet and warning label before using this product.

8. Exposure Controls & Personal Protection

Engineering Controls:	Use appropriate engineering control such as process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Where such systems are not effective wear suitable other recognized standards. Consult with local procedures for selection, training, inspection and maintenance of the personal protective equipment.
Eye/Face Protection:	Safety glasses with side-shields.
Hand Protection Description:	Wear appropriate protective gloves. Consult glove manufacturers data for permeability data.
Respiratory Protection:	When ventilation is not sufficient to remove fumes from the breathing zone a safety approved respirator or self-contained breathing apparatus should be worn.
Exposure Guidelines	
Gum Rosin:	Sensitizer:
Antimony:	
Guideline ACGIH:	TLV-TWA : 0.5mg/m³
Guideline OSHA	PEL-TWA : 0.5 mg/m³
Copper:	
Guideline ACGIH:	TLV-TWA: 1 mg/m³
Guideline OSHA	PEL-TWA :1 mg/m³
Silver:	
Guideline ACGIH:	TLV-TWA: 0.1 mg/m³
Guideline OSHA	PEL-TWA :0.01 mg/m³
Tin:	
Guideline ACGIH:	TLV-TWA: 2 mg/m³
Guideline OSHA	PEL-TWA : 2 mg/m³
Lead:	
Guideline ACGIH:	TLV-TWA : 0.05mg/m^3
	PEL-TWA : 0.05 mg/m^3

9. Physical & Chemical Properties

Physical State Appearance:	Solid
Color:	Amber
Odor:	Mild chemical
Boiling Point:	Not determined.
Melting Point:	>100 ºC (>212ºF)
Density:	>7 g/cm³ (@ 20 ºc (68ºF))
Flash Point:	>93ºC (>199 ºF)

10. Stability & Reactivity

Chemical Stability:	Stable under normal temperatures and pressures.
Hazardous Polymerization:	Not reported.
Conditions to Avoid:	No thermal decomposition if used according to specifications.
Incompatible Materials:	Oxidizing agents. Strong acids and alkalis.
Special Decomposition Products:	When heated to soldering temperatures, the solvents are evaporated and rosin may be thermally degraded to liberate aliphatic aldehydes and acids.

11. Toxicological Information

Gum rosin:	VL0480000
RTECS Number:	Oral- Mouse LD50: 2.2 mg/kg [Behavioral- somnolence (general depressed activity)
Ingestion:	cardiac- pulse rate lungs, thorax Respiration- respiratory depression]

	Oral Rat LD50: 3.0 mg/kg[Brian and Coverings- other degenerative changes Liver- other changes Biochemical- Metabolism (Intermediary)-other] (RTECS)
Inhalation:	Inhalation. Rat LC50: 110 mg/m³[Behavioral- somnolence (general depressed activity) cardiac- pulse rate lungs, thorax Respiration- respiratory depression](RTECS)
Antimony:	
Ingestion:	Oral- Rat LD50:100 mg/kg [Details of toxic effects not reported other than lethal dose value.] (RTECS)
Bismuth:	
Ingestion:	Oral - Mouse LD50:10 mg/kg [Details of toxic effects not reported other than lethal dose value.] Oral - Rat LD50:5 mg/kg [Details of toxic effects not reported other than lethal dose value.] (RTECS)
Copper:	
Ingestion:	Oral - MouseLD50:413 mg/kg [Details of toxic effects not reported other than lethal dose value.]
Ingestion:	Oral - Mouse LD50: >5000 mg/kg [Behavioral- food intake (animal) gastrointestinal Hypermotility, diarrhea Gasrointesinal-nasusea or vomiting] (RTECS)
Silver:	
Ingestion:	Oral- Mouse LD50:100 mg/kg [Details of toxic effects not reported other than lethal dose value.] (RTECS)
Zinc:	
Skin:	Skin- Human Standard Draize Test.: 300 mg/3D-I[mild](RTCES)
Inhalation:	Inhalation- Human TCLO- Lowest published toxic concentration:124 mg/m³/50M [Lugs, Thorax, or Respiration- cough Lungs, Thorax, Respiration- dyspnea Skin and
Tin:	Appendages - sweating] (RTECS)
Ingestion:	Oral- Bird duck LDLo: 388 mg/kg- [Autonomic Nervous System - other (direct) parasympathomimetic oral - ataxia Blood - changes in leukocyte (WBC) Count] (RTECS)

12. Ecological Information

Ecotoxicity:	No ecotoxicity data was found for the product.
Environmental Fate:	No environmental information found for this product.

13. Disposal Considerations

Waste Disposal:	Consult with this US EPA Guidelines listed in 40 CFR Part 261.3 for the classifications of hazardous waste prior to disposal. Furthermore, consult with your state and local waste requirements or guidelines, if applicable, to ensure compliance. Arrange disposal in accordance to the EPA and / or state and local guidelines.

14. Transport Information

DOT Shipping Name:	Not Regulated
DOT UN Number:	Not Regulated
IATA Shipping Name	Not Regulated
IATA UN Number:	Not Regulated
IMDG Shipping Name:	Not Regulated
IMDG UN Number:	Not Regulated
RID Shipping Name:	Not Regulated
RID UN Number:	Not Regulated

15. Regulatory Information

Canada Reg. Status:	This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation and the MSDS contains all

	of the information required by the the Controlled Products Regulations.
Canada WHMIS:	Controlled- Cass: D24 Very Toxic
Tin:	
TSCA Inventory Status:	Listed
Canada DSL:	Listed
Antimony:	
TSCA Inventory Status:	Listed
Canada DSL:	Listed
Bismuth:	
TSCA Inventory Status:	Listed
Canada DSL:	Listed
Copper:	
TSCA Inventory Status:	Listed
Canada DSL:	Listed
Silver:	
TSCA Inventory Status:	Listed
Canada DSL:	Listed
Zinc:	
TSCA Inventory Status:	Listed
Canada DSL:	Listed

16. Additional Information

General Use:	Solder
HMIS Health Hazard:	2
HMIS Fire Hazard:	0
HMIS Reactivity:	0
HMIS Personal Protection:	X
MSDS Creation Date:	1-May-14
MSDS Revision Date:	1-May-14
Disclaimer:	The information contained herein is based on data considered accurate and is offered solely is offered solely for information, consideration and investigation. Canfield Technologies, Inc. extends no warranties, makes no representations and assumes no responsibility as to the accuracy, completeness or suitability of this data for any purchaser's use. The data on this Material Safety Sheet relates only to this product and does not relate to use with any other material or in any process. All chemical products should be used only by, or under the direction of, technically qualified personnel who are aware of the hazards involved and necessity for reasonable care in handling. Hazard communication regulations require that employees must be trained on how to use a Material Safety Data Sheet as a source for hazard information.