

SN100E LEAD FREE RA SOLDER

4942-4944

Safety Data Sheet

Section 1: Identification

Product Identifier and Other Means of Identification

Product Name: SN100e Lead Free RA Solder**SDS Code:** 4942-4944**Related Part #** 4942-112G, 4942-454G, 4944-112G, 4944-454G

Recommended Use and Restriction on Use

Use: Lead free solder wire**Uses Advised Against:** Do not use brazing soldering methods such as high temperature torch soldering/torch welding.

Details of Manufacturer or Importer

ManufacturerMG Chemicals
1210 Corporate Drive
Burlington, Ontario L7L 5R6
CANADAMG Chemicals (Head Office)
9347-193 Street
Surrey, British Columbia V4N 4E7
CANADA

☎ +1-800-340-0772
FAX +1-800-340-0773
E-MAIL support@mgchemicals.com
WEB www.mgchemicals.com

☎ +1-905-331-1396
FAX +1-905-331-2682
E-MAIL info@mgchemicals.com

E-MAIL (Competent Person): sds@mgchemicals.com

Emergency Phone Number

For hazardous material incidents ONLY—leaks, spills, fires, exposures or accidents
USA or CANADA: Call CHEMTREC ☎: **+1-800-424-9300****For emergencies involving dangerous goods;** Collect 24/7
CANADA: Call CANUTEC ☎: **+1-613-996-6666** or ***666** on cellular phones

SN100E LEAD FREE RA SOLDER**4942-4944****Section 2: Hazard(s) Identification****Classification of Hazardous Chemical****GHS Categories**

Based on available data, this product does not meet the HCS 2012 or WHMIS 2015 classification criteria.

Label Elements

Signal Word	<i>No signal word</i>
Pictograms	Hazard Statements
<i>None mandated</i>	None

Hazards Not Otherwise Classified

Other Criteria	Hazard Statements/Precautionary Statement	Signal Word	Pictograms
None	None	None	None

Section 3: Composition/Information on Ingredients

CAS #	Chemical Name	%(weight)
7440-31-5	tin	97.3%
65997-05-9	rosin, polymerized ^{a)}	2.2%
7440-50-8	copper	0.5%

a) Based on available data, not classified as hazardous under GHS

SN100E LEAD FREE RA SOLDER**4942-4944****Section 4: First-Aid Measures**

<i>Exposure Condition</i>	<i>GHS Code/Symptoms/Precautionary Statements</i>
IF INHALED	P304 + P340
Immediate Symptoms	<i>cough, irritation of the respiratory track</i>
Response	Remove person to fresh air and keep comfortable for breathing.
IF IN EYES	P305 + P351 + P338, P337 + P313
Immediate Symptoms	<i>redness, mild irritation</i>
Response	Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
IF ON SKIN	P302 + P352
Immediate Symptoms	<i>mild irritation</i>
Response	Wash with plenty of water.
IF SWALLOWED	P301 + P330
Immediate Symptoms	None known
Response	Rinse mouth.

Section 5: Fire-Fighting Measures

Extinguishing Media	In case of fire: Use extinguish media suitable for surrounding materials. In presence of molten metal, do NOT use water on fires.
Specific Hazards	In a fire, this product can release metal oxide fumes and irritating flux fumes.
Combustion Products	Produces CO and CO ₂ and tin oxides (SnO _x) fumes.
Fire-Fighter	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

SN100E LEAD FREE RA SOLDER**4942-4944****Section 6: Accidental Release Measures**

Personal Protection	See personal protection recommendations in Section 8.
Precautions for Response	Avoid breathing fumes. Remove or keep away all sources of extreme heat.
Environmental Precautions	Avoid releasing to the environment.
Containment Methods	Not applicable
Cleaning Methods	Collect waste in a waste container. Reuse molten material if it is not contaminated.
Disposal Methods	Dispose of spill waste according to Section 13.

Section 7: Handling and Storage

Prevention	Keep out of reach of children. Avoid breathing fumes. Do not eat, drink, or smoke when using this product.
Handling	Wear protective gloves/clothing/eye protection. Wash hands thoroughly after handling. Avoid release to the environment.
Storage	Not applicable.

Section 8: Exposure Controls/Personal Protection**Substances with Occupational Exposure Limit Values**

Chemical Name	Country	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
tin	ACGIH	2 mg/m ³	Not established
	U.S.A. OSHA PEL	2 mg/m ³	Not established
	Canada AB	2 mg/m ³	Not established
	Canada BC	2 mg/m ³	Not established
	Canada ON	2 mg/m ³	Not established
	Canada QC	2 mg/m ³	Not established

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SN100E LEAD FREE RA SOLDER**4942-4944***Continued...*

Chemical Name	Country	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
copper (dust and mist)	ACGIH	1.0 mg/m ³	Not established
	U.S.A. OSHA PEL	1.0 mg/m ³	Not established
	Canada AB	1.0 mg/m ³	Not established
	Canada BC	1.0 mg/m ³	Not established
	Canada ON	1 mg/m ³	Not established
	Canada QC	1 mg/m ³	Not established

Note: Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH¹, OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from the RTECS database² and data from suppliers' SDS were also consulted. Short term exposure limits (STEL) are usually for 15 min and long term permissible exposure limits (PEL) for 8 h.

Engineering Controls**Ventilation**

Keep airborne concentrations below the occupational exposure limits (OEL).

Soft soldering temperatures (<450 °C) are generally too low to generate significant amounts of metal vapors, however, metal oxide fumes/dust or flux decomposition fumes can occur.

Recommendation: For frequent or prolonged soldering processes, use of a local exhaust system to avoid exposure to thermal decomposition products. For example, use fume cabinet, a hood on a flexible arm, or tip-mounted fume extraction system on the soldering iron.

Personal Protective Equipment**Eye protection**

Wear appropriate protective eyeglasses or chemical safety goggles.

Recommendation: Ensure that glasses have side shields for lateral protection.

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SN100E LEAD FREE RA SOLDER**4942-4944****Skin Protection**

For incidental contacts, use nitrile or other chemically resistant gloves. If contact with molten metal is likely, wear thermally resistant gloves.

Respiratory Protection

If exposed to fumes or dust above the exposure limit, a suitable wear respirator meeting local/regional/national guidelines.

Generally, for emergencies and exposure above 0.01 mg/m³, use a self-contained breathing apparatus with full face piece operated in a pressure positive mode.

RECOMMENDATION: Consult your local safety supply store to ensure that your respirator has a NIOSH (U.S.) approved filter cartridges appropriate for the ingredients listed in Section 3. The respirator should be fitted to the employee by a professional.

General Hygiene Considerations

Wash hands thoroughly with water and soap after handling.

Section 9: Physical and Chemical Properties

Physical State	Solid	Lower Flammability Limit	Not applicable
Appearance	Silver grey	Upper Flammability Limit	Not applicable
Odor	None	Vapor Pressure @20 °C	Not available
Odor Threshold	Not available	Vapor Density	Not applicable
pH	Not available	Specific Gravity @25 °C	7.4
Freezing/Melting Point	228°C [442 °F]	Solubility in Water	Negligible ^{a)}
Boiling Point	Not available	Partition Coefficient	Not available
Flash Point	Not applicable	Auto-ignition Temperature	Not available
Evaporation Rate	Not available	Decomposition Temperature	Not available
Flammability (solid, gas)	Not applicable	Viscosity @40°C	Not applicable

a) Metal components are sparingly soluble

SN100E LEAD FREE RA SOLDER**4942-4944****Section 10: Stability and Reactivity**

Reactivity	Not available
Chemical Stability	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Extreme temperatures above 450 °C, such as those due to welding
Incompatibilities	Oxidizing agents, strong acids
Polymerization	Will not occur
Decomposition	Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5.

Section 11: Toxicological Information**Routes of Exposure**

Inhalation, Ingestion, and Eye Contact

Symptoms Summary

Eyes	May cause redness and mild irritation.
Skin	May cause mild irritation.
Inhalation	May cause nose, throat and lung irritation; and coughing. Overexposure to dust or metal fumes may lead to pneumoconiosis (or Stannosis), anemia, and central nervous system effects.
Ingestion	Low toxicity
Chronic	Not available

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SN100E LEAD FREE RA SOLDER**4942-4944****Acute Toxicity (Lethal Exposure Concentrations)**

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation
tin	>2 000 mg/kg Rat	>2 000 mg/kg Rabbit	4.75 mg/m ³ Rat 4 h
copper	>5 000 mg/kg Mouse	Not available	>5.11 mg/L Rat 4 h

Note: Toxicity data from the RTECS² and ECHA were consulted. The data from supplier (M)SDS were also consulted.

Other Toxicological Effects**Skin corrosion/irritation**

Based on available data,
the classification criteria are not met.

**Serious eye
damage/irritation**

Based on available data,
the classification criteria are not met.

Sensitization
(allergic reactions)

Based on available data,
the classification criteria are not met.

Carcinogenicity
(risk of cancer)

None of the ingredients are classified or listed as a
carcinogen by IARC, ACGIH, CA Prop 65, or NTP.

Mutagenicity
(risk of heritable genetic effects)

Based on available data,
the classification criteria are not met.

Reproductive Toxicity
(risk to sex functions)

Based on available data,
the classification criteria are not met.

Teratogenicity (risk of fetus
malformation)

Based on available data,
the classification criteria are not met.

STOT-single exposure

Based on available data,
the classification criteria are not met.

STOT-repeated exposure

Based on available data,
the classification criteria are not met.

Aspiration hazard

Not applicable. This product doesn't contain any Cat 1
ingredients and is a solid.

SN100E LEAD FREE RA SOLDER**4942-4944****Section 12: Ecological Information**

Ecological classifications are based on the IMDG/GHS criteria in conjunction with ecotoxicological data from our suppliers, the European Chemical Agency database (<http://echa.europa.eu>), and other reliable sources.

Based on transformation/dissolution data published by ECHA registrants, the classification threshold is not met for massive copper.

Based on available data for tin and polymerized rosin, the GHS aqueous toxicity classification criteria are not met.

Acute Ecotoxicity

Non regulated: Based on available data, the classification criteria are not met.

Chronic Ecotoxicity

Non regulated: Based on available data, the classification criteria are not met.

Biodegradability

Not available

Bioaccumulation

Not available

Other Effects

Not available

Section 13: Disposal Information

Dispose of contents in accordance with all local, regional, national, and international regulations.

SN100E LEAD FREE RA SOLDER**4942-4944****Section 14: Transport Information****Ground**

Refer to TDG regulations (Canadian Transportation of Dangerous Goods regulations);
USA DOT 49 CFR (Parts 100 to 185) **Regulations.**

Non Regulated

Air

Refer to ICAO-IATA Dangerous Goods Regulations.

Non Regulated

Sea

Refer to IMDG regulations.

Non Regulated

Section 15: Regulatory Information**Canada****Domestic Substance List (DSL) / Non-Domestic Substance Lists (NDSL)**

All hazardous ingredients are listed on the DSL.

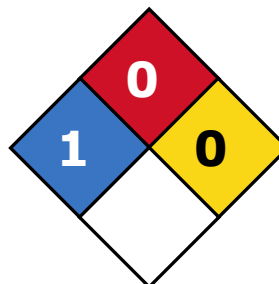
Industry and Science Canada

MG Labels products intended for the workplace to conform to WHMIS labeling regulations. Product identification, net quantity declaration, minimum printing type size heights, and packaging of this product are in compliance.

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SN100E LEAD FREE RA SOLDER**4942-4944****USA****Other Classifications****HMIS[®] RATING**

HEALTH:	1
FLAMMABILITY:	0
PHYSICAL HAZARD:	0
PERSONAL PROTECTION:	

NFPA[®] 704 CODES*Approximate HMIS and NFPA Risk Ratings Legend:*

0 (Low or none); 1 (Slight); 2 (Moderate); 3 (Serious); 4 (Severe)

CAA (Clean Air Act, USA)

This product does not contain any class 1 ozone depleting substances.

This product does not contain any class 2 ozone depleting substances.

This product does not contain substances that are listed as hazardous air pollutants.

EPCRA (Emergency Planning and Right to Know Act, USA, 40 CFR 372.45)

This product contains copper (CAS# 7440-50-8; reportable quantity = 5 000 lb), which is subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372.

TSCA (Toxic Substances Control Act of 1976, USA)

All substances are TSCA listed.

California Proposition 65 (Chemicals known to cause cancer or reproductive toxicity, June 06, 2014 revision, USA).

This product does not contain any of the listed substances.

Europe**RoHS** (Restriction of Hazardous Substances Directive)

This product does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's, or PBDE's, and complies with European RoHS regulations.

WEEE (Waste Electrical and Electronic Equipment Directive)

This product is not a piece of electrical or electronics equipment, and is therefore not governed by this regulation.

SN100E LEAD FREE RA SOLDER**4942-4944****Section 16: Other Information****SDS Prepared by** Michel Hachey**Date of Review** 25 Octobre 2016**Supersedes** Not applicable**Reason for Changes:** Classification according to WHMIS 2015 and HCS 2012.**Reference**

1) ACGIH 2013 TLVs and BEIs: Based on the documentation of the threshold limit values for chemical substances and physical agents & biological exposure indices, American Conference of Governmental of Industrial Hygienist Cincinnati, OH (2013).

2) All toxicological data were checked against the RTECS (Registry of Toxic Effects of Chemical Substances®)

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists (USA)
EC50	Half maximal effective concentration
EL50	Half maximal effective loading
IARC	International Agency for Research on Cancer
NOELR	No observable effect loading ratio
NTP	National Toxicology Program
GHS	Globally Harmonized System of Classification of Labeling of Chemicals
LC50	Lethal Concentration 50%
LCLo	Lowest published lethal concentration
LD50	Lethal Dose 50%
OEL	Occupational Exposure Limit
PEL	Permissible Exposure Limit
SDS	Safety Data Sheet
STEL	Short-Term Exposure Limit
TCLo	Lowest published toxic concentration
TWA	Time Weighted Average
VOC	Volatile Organic Content

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SN100E LEAD FREE RA SOLDER**4942-4944**

Technical Queries Contact us regarding any questions, improvement suggestions, or problems with this product. Application notes, instructions, and FAQs are located at www.mgchemicals.com.

Email: support@mgchemicals.com

Mailing Addresses *Manufacturing & Support*
1210 Corporate Drive
Burlington, Ontario, Canada
L7L 5R6

Head Office
9347-193rd Street
Surrey, British Columbia, Canada
V4N 4E7

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