

## Description

The 4925–4926 SAC305 Lead Free Solder (RA) is an electronic grade, lead-free solder wire. It uses the predominant lead-free alloy composition and exceeds J-STD-006 purity specifications. It is complemented with a rosin activated, medium activity flux that is classified as ROM1 according to J-STD-004B. This solder is a great alternative to leaded solders.

The 4925–4926 non-leaded solder series achieve a consistent solder and flux percentage through a state-of-the-art, extrusion, wire-drawing machine. This machine continually monitors the wire to prevent voids and ensure consistency, providing a top-grade solder wire.

## Benefits & Features

- **Lead free & Rosin Activated flux**
- **Exceeds J-STD-006 impurity requirements**
- **Fast wetting**
- **Fast Flowing**
- **Non-corrosive**
- **Non-conductive**

### COMPLIANCE

- ✓ Dobb-Frank ([DRC conflict free](#))
- ✓ REACH ([compliant](#))
- ✓ RoHS ([compliant](#))

## Wire Sizes Availability

| <i>Cat No.</i> | <i>Std. Wire Gauge</i> | <i>Diameter</i> |          | <i>Packaging</i> | <i>Sizes</i> |
|----------------|------------------------|-----------------|----------|------------------|--------------|
| 4925           | 21                     | 0.81 mm         | 0.032 in | Spool            | ¼ or 1 lb    |
| 4926           | 19                     | 1.02 mm         | 0.040 in | Spool            | ¼ or 1 lb    |

## General Flux Parameters

| <i>Properties</i> | <i>Value</i>                               |
|-------------------|--|
| Residue Removal   | Not required                               |
| Flux Percentage   | 2.2%                                       |
| Flux Feature      | Fast wetting, fast flowing, non-conductive |
| Shelf Life        | 5 y  |

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| <b>Thermal Properties</b>                            | <b>Value</b>                  |
|--|-------------------------------|
| Melting Point, Solidus                               | 217 °C [423 °F]               |
| Melting Point, Liquidus                              | 221 °C [430 °F]               |
| Tip Temperature Upper Limit                          | Do not exceed 350 °C [662 °F] |
| Coefficient of Thermal Expansion (CTE) <sup>c)</sup> | 23.5 ppm/°C                   |
| Thermal Conductivity                                 | 58.7 W/(m·K)                  |


**NOTE:** This table present typical literature values for SAC305 alloys.

a) N/mm<sup>2</sup> = mPa; lb/in<sup>2</sup> = psi;

b) International Annealed Copper Standard: 100% give 5.8 × 10<sup>7</sup> S/m.

c) CTE unit conversions: ppm/°C = μm/(m·K) = in/in/°C × 10<sup>-6</sup> = unit/unit/°C × 10<sup>-6</sup>

## Solder Alloy Composition

| <b>Properties</b>  | <b>Value</b>  | <b>Properties</b>               | <b>J-STD-006C</b>   | <b>4925–4926</b>      |
|--|---------------|---------------------------------|---------------------|-----------------------|
| <i>MAIN INGREDIENTS</i>  |               | <i>IMPURITIES</i> <sup>a)</sup> | <i>REQUIREMENTS</i> | <i>SPECIFICATIONS</i> |
| Sn   | 96.2 to 96.8% | Sb                              | ≤0.20% Max          | ≤0.05% Max            |
| Ag   | 2.8 to 3.2%   | Bi                              | ≤0.10% Max          | ≤0.05% Max            |
| Cu   | 0.4 to 0.6%   | In                              | ≤0.10% Max          | ≤0.05% Max            |
|  |               | Pb                              | ≤0.07% Max          | ≤0.05% Max            |
|  |               | Au                              | ≤0.05% Max          | ≤0.002% Max           |
|  |               | As                              | ≤0.03% Max          | ≤0.01% Max            |
|  |               | Fe                              | ≤0.02% Max          | ≤0.01% Max            |
|  |               | Ni                              | ≤0.01% Max          | ≤0.005% Max           |
|  |               | Al                              | ≤0.005% Max         | ≤0.001% Max           |
|  |               | Zn                              | ≤0.003% Max         | ≤0.001% Max           |
|  |               | Cd                              | ≤0.002% Max         | ≤0.001% Max           |

a) Exceeds the requirements of J-STD-006

## Storage

Protect from direct heat or sunlight. Store between 18 to 27 °C [65 to 80 °F].

## Cleaning

The flux residue does not need to be removed for typical applications. If removal is desired, a solvent system like the *MG 4140* can be used. For best results, warm the cleaning solution to about 40 °C [104 °F].

## Health and Safety

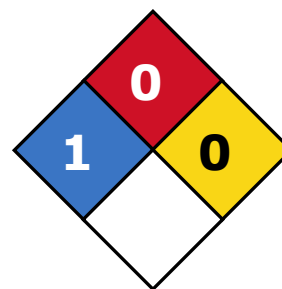
Please see the 4925x (where x = 5, 6) **Safety Data Sheet** (SDS) for more details on transportation, storage, handling and other security guidelines.

**Health and Safety:** Avoid breathing fumes. Wash hands thoroughly after use. Do not ingest.

### HMIS® RATING

|                             |            |
|-----------------------------|------------|
| <b>HEALTH:</b>              | <b>* 1</b> |
| <b>FLAMMABILITY:</b>        | <b>0</b>   |
| <b>PHYSICAL HAZARD:</b>     | <b>0</b>   |
| <b>PERSONAL PROTECTION:</b> |            |

### NFPA® 704 CODES



*Approximate HMIS and NFPA Risk Ratings Legend:*

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

## Packaging and Supporting Products

| <i>Cat. No.</i>  | <i>Form</i> | <i>Package</i> | <i>Net Weight</i> |         |
|------------------|-------------|----------------|-------------------|---------|
| <b>4925-112G</b> | Solid wire  | Spool          | 113 g             | 0.25 lb |
| <b>4925-454G</b> | Solid wire  | Spool          | 454 g             | 1.0 lb  |
| <b>4926-112G</b> | Solid wire  | Spool          | 113 g             | 0.25 lb |
| <b>4926-454G</b> | Solid wire  | Spool          | 454 g             | 1.0 lb  |

a) Box of 25 pocket packs



ISO 9001 Registered Quality System.  
Burlington, Ontario, Canada QMI File # 004008

# SAC305 Lead Free Solder Wire (RA) 4925–4926 Technical Data Sheet

4925–4926

## Technical Support

Contact us regarding any questions, improvement suggestions, or problems with this product. Application notes, instructions, and FAQs are located at [www.mgchemicals.com](http://www.mgchemicals.com).

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## Warranty

*M.G. Chemicals Ltd.* warrants this product for 12 months from the date of purchase by the end user. *M.G. Chemicals Ltd.* makes no claims as to shelf life of this product for the warranty. The liability of *M.G. Chemicals Ltd.* whether based on its warranty, contracts, or otherwise shall in no case include incidental or consequential damage.

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