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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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Description

The 488x [where x =0, 4, 5, 6, 7, 8] series of *Sn63/Pb37 Leaded Solder* is an electronic grade solder wire. It uses the eutectic tin-to-lead alloy ratio, which is complemented with a RA-like flux core. The 488x series generally exceeds J-STD-004 and J-STD-006 specifications. It is one of the easiest solders to work with because it offers a low-melting temperature with a sharp melting/solidification point, which results in robust and reliable joints that are highly resistant to whisker formation.

The 488x leaded solders 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

- **Eutectic alloy** (liquidus = solidus temperature)
- **Rosin activated flux**
- **Fast wetting**
- **Fast flowing**
- **Non-corrosive**
- **Non-conductive**

COMPLIANCE

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

Wire Sizes Availability

<i>Cat No.</i>	<i>Std. Wire Gauge</i>	<i>Diameter</i>		<i>Packaging</i>	<i>Sizes</i>
4880	19	1.01 mm	0.040 in	Pocket Pack	0.6 oz
4888	16	1.57 mm	0.062 in	Spool	½ or 1 lb
4887	18	1.27 mm	0.050 in	Spool	½ or 1 lb
4886	19	1.01 mm	0.040 in	Spool	½ or 1 lb
4885	21	0.81 mm	0.032 in	Spool	½ or 1 lb
4884	23	0.63 mm	0.025 in	Spool	½ 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

Continued on the next page

Flux Core Properties

The rosin activated flux wets rapidly and is fast flowing. It is also non-conductive and non-corrosive.

<i>Physical Properties</i>	<i>Method</i>	<i>Value</i>
Flux Classification	J-STD-004 MIL-F-14256F	ROM1 RA
Flux Type		Rosin
%Halides		0.5–2.0%
Color	—	Amber solid
Softening Point of Flux Extract		80 °C [176 °F]
Acid Number (mgKOH/g sample)	IPC-TM-650 2.3.13	150–160
Silver Chromate—Chlorides + Bromides	IPC-TM-650 2.3.33	Detection
Surface Insulation Resistance (SIR)	IPC-TM-650 2.6.3.3	>1.0 × 10 ⁹ Ω
Corrosion Test	IPC-TM-650 2.6.15	Non-corrosive
Cleaning Requirements	—	Application dependent ^{a)}

a) Since there is only 2.2% flux, removal of residue can be considered optional for some applications.

Sn63/Pb37 Alloy Typical Literature Properties

<i>Physical Properties</i>	<i>Value</i> ^{a)}
Color	Silvery-white metal
Density @26 °C [78 °F]	8.40 g/cm ³
Tensile Strength	54 N/mm ² [7 800 lb/in ²]
Elongation	37%
Hardness	14 HB
Shear Strength	37 N/mm ² [5 400 lb/in ²]
<i>Electrical Properties</i>	<i>Value</i>
Volume Resistivity	14.5 μΩ·cm
Electrical Conductivity ^{b)}	11.9% IACS
<i>Thermal Properties</i>	<i>Value</i>
Melting Point, Solidus	183 °C [361 °F]
Melting Point, Liquidus	183 °C [361 °F]
Tip Temperature Upper Limit	Do not exceed 260 °C [500 °F]
Coefficient of Thermal Expansion (CTE) ^{c)}	24.7 ppm/°C
Thermal Conductivity	50 W/(m·K)

NOTE: This table present typical literature values for 63/37 alloys.

a) N/mm² = mPa; lb/in² = psi;

b) International Annealed Copper Standard: 100% give 5.8 × 10⁷ S/m.

c) CTE for pure tin; unit conversions: ppm/°C = μm/(m·K) = in/in/°C × 10⁻⁶ = unit/unit/°C × 10⁻⁶

Solder Alloy Composition

<i>Properties</i>	<i>Value</i>	<i>Properties</i>	<i>Value</i>
<i>MAIN INGREDIENTS</i>		<i>IMPURITIES</i> ^{a)}	
Sn	63.5 to 63.5%	Sb	≤0.20% Max
Pb	36.5 to 37.5%	Ag	≤0.10% Max
Because this product contains lead, it is not RoHS compliant. The following RoHS exemptions are applicable 7(b), 15, 24, 31, 33.		Bi	≤0.10% Max
		In	≤0.10% Max
		Cu	≤0.08% Max
		Au	≤0.05% Max
		As	≤0.03% Max
		Fe	≤0.02% Max
		Ni	≤0.01% Max
		Al	≤0.005% Max
		Zn	≤0.003% Max
		Cd	≤0.002% Max

a) Meets the requirements of J-STD-006

Storage

Protect from direct heat or sunlight.

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

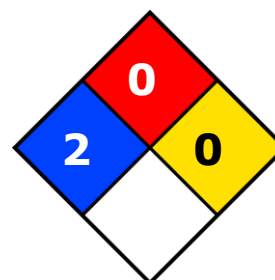
Please see the 488x (where x = 0, 4, 5, 6, 7, 8) **Safety Data Sheet** (SDS) for more details on transportation, storage, handling and other security guidelines.

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

HMIS® RATING

HEALTH:	* 2
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)

Packaging and Supporting Products

<i>Cat. No.</i>	<i>Form</i>	<i>Packaging</i>	<i>Net Weight</i>	
4880-18G	Solid wire	Pocket Pack ^{a)}	18 g	0.6 oz
4884-227G	Solid wire	Spool	227 g	0.5 lb
4884-454G	Solid wire	Spool	454 g	1.0 lb
4885-227G	Solid wire	Spool	227 g	0.5 lb
4885-454G	Solid wire	Spool	454 g	1.0 lb
4886-227G	Solid wire	Spool	227 g	0.5 lb
4886-454G	Solid wire	Spool	454 g	1.0 lb
4887-227G	Solid wire	Spool	227 g	0.5 lb
4887-454G	Solid wire	Spool	454 g	1.0 lb
4888-227G	Solid wire	Spool	227 g	0.5 lb
4888-454G	Solid wire	Spool	454 g	1.0 lb

a) Box of 25 pocket packs

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.

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Warranty

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