



## Copper-Tin and Tin Soft Soldering Alloys

Johnson Matthey's 99C™ is a lead free solder which has a short melting range and good flow characteristics. It has been adopted as the universal plumbers solder.

Johnson Matthey's 97C™ has a longer melting range than 99C™ and consequently builds up greater fillets and is a better gap filler. It is now being used extensively on automotive radiators.

100Sn is 100% tin and is included in this datasheet for completeness. Products made from 100Sn (bar, ingots, wire etc.) are made from virgin tin which is a minimum of 99.9% tin. It can be used in ingot form to replenish or adjust solder baths, as a solder in its own right.

Alloy	Sn	Pb	Cu	Melting Range °C	BS.EN.29453 Ref	EN ISO 9453:2006
97C™	97	-	3	230-250	Alloy No 24	Alloy No. 402
99C™	99	-	1	230-235	Alloy No 23	Alloy No. 401
100Sn	100	-	-	232	-	

### Uses for These Products

Lead-free solders have replaced the traditional lead containing solders in plumbing, automotive, electrical and many electronic components. Lead free alternatives such as 99C™ and 97C™ should be considered wherever possible.

### Conditions for Use

With the correct choice of flux 99C and 99C alloys will join copper and copper alloys, carbon steels and stainless steels.

Flux	Recommended for use on	Corrosive/ Non-corrosive	Working Range °C	Product Availability
Soft Solder Flux No. 1S™	Carbon steel / stainless steel	Corrosive	350°C	1 litre container
Soft Solder Flux No. 2S™	Copper / brass	Non Corrosive	350°C	0.5 litre container
Soft Solder Flux No. 3S™	Copper / brass / carbon steel Stainless steel	Corrosive	350°C	1kg container

### Rosin based or inorganic acid fluxes

Flux cored wire or soldering paste systems for use with tin-lead or tin-copper solders and containing rosin-based fluxes are available as 'RMA' systems without 'activation' and only trace halide content or with various levels of 'activation' from 'RA' (0-0.5% halide content) to 'HA' (typically 1% halide content).

Fluxed binder systems in this group are only suitable for soldering copper and brasses. The ability of these binder systems to solder a brass will depend upon the level of activation used within the flux.



**Johnson Matthey**

Metal Joining York Way, Royston, Hertfordshire, SG8 5HJ, UK

Telephone: +44 (0) 1763 253200

Fax: +44 (0) 1763 253168

email: [mj@matthey.com](mailto:mj@matthey.com)

[www: jm-metaljoining.com](http://www.jm-metaljoining.com)



---

## Copper-Tin and Tin Soft Soldering Alloys

---

Fumes from rosin containing fluxes present a risk to health and safety and in particular can cause asthma. Fumes should be controlled to prevent exposure to operators.

For more information consult the HSE publications:

[COSHH WL17 - Soldering: Hand-held with lead-base, rosin-cored solders](#)

[Controlling health risks from rosin \(colophony\) based solder](#)

---

### Product Availability

---

Johnson Matthey's 100Sn, 99C™ and 97C™ can be supplied in a variety of forms. Wires, sticks, bars, pellets, flux cored wires powders and pastes. Special order only.

Johnson Matthey Plc cannot anticipate all conditions under which this information and our products or the products of other manufacturers in combination with our products will be used. This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is given in good faith, being based on the latest information available to Johnson Matthey Plc and is, to the best of Johnson Matthey Plc's knowledge and belief, accurate and reliable at the time of preparation. However, no representation, warranty or guarantee is made as to the accuracy or completeness of the information and Johnson Matthey Plc assumes no responsibility therefore and disclaims any liability for any loss, damage or injury howsoever arising (including in respect of any claim brought by any third party) incurred using this information. The product is supplied on the condition that the user accepts responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. Freedom from patent or any other proprietary rights of any third party must not be assumed. The text and images on this document are Copyright and property of Johnson Matthey.

This datasheet may only be reproduced as information, for use with or for resale of Johnson Matthey products. The JM logo®, Johnson Matthey name® and product names referred to in this document are trademarks of Johnson Matthey. Easy-flo® and Silver-flo® are registered to JM in the EU. Sil-fos™ is registered to JM in the UK and certain other countries but is marketed as Mattiphos™ in Germany and the USA.



**Johnson Matthey**

Metal Joining York Way, Royston, Hertfordshire, SG8 5HJ, UK

Telephone: +44 (0) 1763 253200

Fax: +44 (0) 1763 253168

email: [mj@matthey.com](mailto:mj@matthey.com)

[www: jm-metaljoining.com](http://www.jm-metaljoining.com)