Silver-flo™ 60 – Cadmium-free Silver Brazing Filler Metal

Silver-flo™ 60 is a cadmium free silver brazing alloy. It has a short melting range and a relatively low zinc content. In addition Silver-flo™ 60 has a brazing temperature that is above the annealing or stress relieving temperature of many copper-nickel alloys. Consequently Silver-flo™ 60 is recommended for use on cupro-nickel (in particular 70:30 cupro-nickel) and high nickel content copper alloys where intergranular penetration or stress cracking may otherwise be a problem.

Silver-flo™ 60 also offers resistance to dezincification in marine environments. This alloy also provides a good colour match for stainless steel but should only be used for this application where crevice corrosion in the joints is not considered to be a service hazard.

The optimum joint gap for this filler metal at brazing temperature is normally 0.05-0.20mm.

**Composition:**
60%Ag, 26%Cu, 14%Zn

**Specification:**
JM proprietary (formerly EN 1044 1999 AG202, BS 1845 (1984) AG13, DIN 8513 L-Ag60)*

**Melting range:**
695-730°C

*Please note that the current standard for brazing filler metals ISO17672 does not contain a direct equivalent for this composition and the standards EN 1044 1999 AG202, BS 1845 (1984) AG13, DIN 8513 L-Ag60 are now obsolete.

**Uses for this Product**

Silver-flo™ 60 is principally used on cupro-nickel (in particular 70:30 cupro-nickel), high nickel content copper alloys as well as a range of nickel chromium and nickel chromium iron alloys.

This filler metal can be used to join all the common engineering materials (excluding aluminium) – such as copper, copper alloys (including, brasses, bronzes, gun metal, nickel silvers, aluminium bronze, copper nickel) and steel (including, mild, carbon, tool steel, stainless steels and low alloy steel). It is not normally recommended for brazing tungsten carbide and PCD segments where lower melting or specialised silver brazing filler metals containing nickel / manganese are often preferred.

**Conditions for Use**

This filler metal is mainly used for brazing in air with a flux. However, flux selection is application dependent. In most cases Easy-flo™ flux can be used in conjunction with Silver-flo™ 60. Please refer to JM technical department or flux product datasheets before selecting a flux.

**Product Availability**

<table>
<thead>
<tr>
<th>Type</th>
<th>Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rod</td>
<td>0.7mm, 1.5mm</td>
</tr>
<tr>
<td>Wire, Strip, Foil, Flux Coated Rod</td>
<td>On request</td>
</tr>
<tr>
<td>Others</td>
<td>Rings, preformed shapes, brazing paste – on request</td>
</tr>
</tbody>
</table>

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. Si-flo™ is registered to JM in the UK and certain other countries but is marketed as Mattiphos™ in Germany and the USA.