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Nitro-Flo Lead Free Solder **SAC/P/0307 (LFB/227S)**

Description

SAC/P/0307 is a Tin, Silver, Copper alloy (SAC) manufactured under carefully controlled conditions from virgin, high purity metals to provide assemblers with a cost effective replacement for Tin / Lead solder.

SAC/P/0307 incorporates the dross-inhibiting technology used in the manufacture of “Nitro-Flo” high purity Tin / Lead solder.

SAC/P/0307 is suitable for use in wave soldering equipment, modified to be compatible with lead free solder at 260°C.

Typical Analysis SAC/P/0307

Tin	98.97%
Silver	0.30%
Copper	0.70%
Arsenic	< 0.001%
Gold	< 0.001%
Bismuth	0.05%
Cadmium	< 0.001%
Iron	< 0.001%
Lead	< 0.005%
Antimony	0.03%

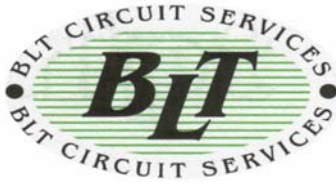
Operating Levels

98-99.0%
0.25-4.0%
0.6-1.0%
0.001-0.01%
0.001-0.1%
0.01-0.04%
0.001-0.003%
0.001-0.02%
0.001-0.1%
0.03-0.1%

Physical Properties SAC/P/0307

Melting - point	216 - 227°C.
Tensile Stencil	25 MPa
Elongation	40%
Wetting Balance	0.75 seconds
Tolerance to copper	Maximum 1.0%

Regular solder analysis is fundamental in the control of the SAC/P/0307, with calculated additions of Tin/Silver dosing alloy, to ensure the correct balance of all critical metal elements is maintained.



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Benefits

Similar soldering performance to 3% Silver Lead Free solder with lower cost and fast wetting speeds. Outperforms Sn/Cu based alloys for solderability and low dross production when utilised with our proven **Nitro-Flo** processing techniques, which reduces dramatically the occurrence of dross inclusions associated with other inferior solders. Excellent drainage properties ensure good fluidity of solder compared to Sn/Cu or stabilised Sn/Cu options. Suited for all PCB types to include Single sided, Double Sided and mixed technology dual wave applications.

The change-over

Owing to high levels of Tin present in Lead Free solders it will be necessary to ensure all Stainless Steel parts utilised in the solder pot are either changed to more compatible metal e.g Titanium or coated with an approved protective layer. **BLT Circuit Services** strongly recommend that this important part be discussed with your wave soldering machine supplier at your earliest convenience, as delay in finalising the finish may be sufficient enough to hinder your change to Lead Free, the deadline for which is 1st July, 2006. Once machines are modified and the change-over from 63/37 is necessary, then the following procedure will be required to ensure compliance with the Lead Free mandate of no more than 0.1% w/w Lead contamination.

1. Completely empty solder pot to include pumps, nozzles and channels of 63/37 alloy removing as much metal as possible (in accordance with Health and Safety guidelines).
2. Refill with Tin/Phos flush (it is anticipated, given time, that a number of machines will be accommodated with one Tin/Phos flush, thus reducing the cost to users). Run the machine, including the reassembled pumps, and operate as normal at 260C for at least one hour to ensure all traces of 63/37 alloy are dissolved in the Tin/Phos flush.
3. Empty Tin Flush trying to remove as much as possible.
4. Refill with Nitro-Flo SAC/P/0307 and analyse to ensure Lead free compliant at <0.1%w/w Lead

Flux Requirements

All tests carried out so far indicate that most standard **BLT** No Residue and VOC Free fluxes are suited to Lead Free with no problems. It should be noted that **35-92** and **35-41** alcohol fluxes are already used for higher heat settings and dual waves applications so these would be the choice, along with all our VOC Free fluxes.



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BLT Circuit Services Ltd offers in house, free of charge solder analysis using the latest optical emission analysis equipment, and a dross recovery service carried out by recognised and licensed waste recycling companies to ensure an efficient, environmentally-acceptable service.

Packaging

1 Kilo bars packed in 25 kilo boxes.

3.5 Kilo Feeder bars.

30mm chunks packed in 25 kilo buckets.

All reasonable endeavors have been made to ensure that the information contained in this data sheet is accurate, but it is submitted on the express condition that BLT Circuit Services Ltd. shall be under no liability whatsoever in respect thereof or for any loss, injury, damage or liability of whatsoever nature arising, suffered or incurred as a consequence of its use.