SolderKing assembly materials ltd

Technical Data Sheet

Micro Connect P2020 SAC305

Issue No. 1.01 January 2020

Description

Solderking Micro Connect P2020 is a no clean solder paste formulated for lead free surface mount assemblies requiring excellent, defect free soldering of even the most difficult to solder components and board finishes, including OSP, ENIG, Ag, Sn and HASL.

Micro Connect P2020 leaves minimal clear, post reflow residue. Tested to Industry standards including J-STD 004B and Bellcore (ECM), solder paste residues can be considered safe to remain on an assembly when no-clean technology is appropriate to the assembly end-use.

Available in Type 4 and Type 5 powder size, P2020 offers excellent print definition for fine and ultra-fine pitch printing and offers extended tack and open times in excess of three days.

Specification

P2020 SAC305 20-38 typical batch analysis.

Flux Classification J-STD 004B	ROL1
Malcom Viscosity 10rpm, 25°C, Pa.s	150-160
Slump J-STD 005A	Pass <0.2 mm
Metal Content J-STD 005A	88.5%
Tack Test J-STD 005A	>3 days
Solder Ball Test J-STD 005A	Pass
Quantitative Halide J-STD 004B	<0.5%
Surface Insulation Resistance J-STD 004B	Pass >100 MΩ
Electrochemical Migration J-STD 004B	Pass
Electromigration Resistance GR78 Core	Pass
Copper Corrosion 10 day J-STD 004B	Pass
Copper Mirror Corrosion J-STD 004B	Pass

Benefits

High reliability solder paste flux type ROL1 to J-STD 004B

Reduces and eliminates voiding and head-in-pillow defects

Powerful wetting on all board finishes

Shiny joint finish

Clear minimal residue

Long tack and open times

12 months refrigerated shelf life

No Clean

Excellent print definition for fine and ultra fine pitch printing,

Availability

Solderking manufacture all solder pastes in the UK. Custom pastes, packaging and modifications are available on request.

P2020 is available in the following packaging:

Flux	Packaging
P2020 88% 20-38µm (T4)	40g, 75g manual
	40g, 75g automatic
P2020 86% 20-38µm (T4)	40g automatic
P2020 88.5% 20-38µm (T4)	250g/500g tubs
	600g cartridges
P2020 88.25% 20-38µm (T4)	250g/500g tubs
	600g cartridges
P2020 88% 15-25 µm (T5)	250g/500g tubs
	600g cartridges

Solder Powder

Solderking Micro Connect P2020 Lead Free Solder pastes incorporate High Purity Solder Powders. Solder powders far exceed the purity requirements of EN29453 and J-STD 006.

Solderking Part	Alloy	Melting Point ºC
SAC305	Sn96.5Ag3Cu0.5	217

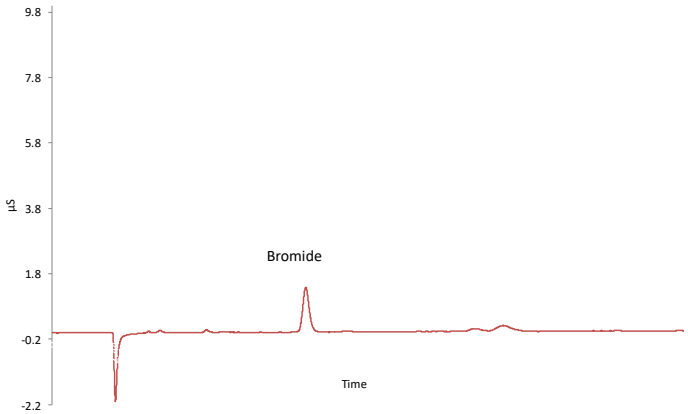
Particle Size Distribution

Solderking Micro Connect P2020 is available in the following powder sizes.

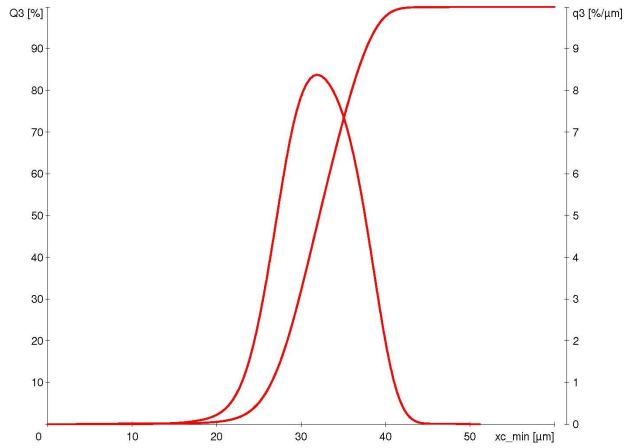
Solderking Part	Distribution µm	J-STD 005A
20-38	20-38	Type 4
15-25	15-25	Type 5

Flux Data—ROL1

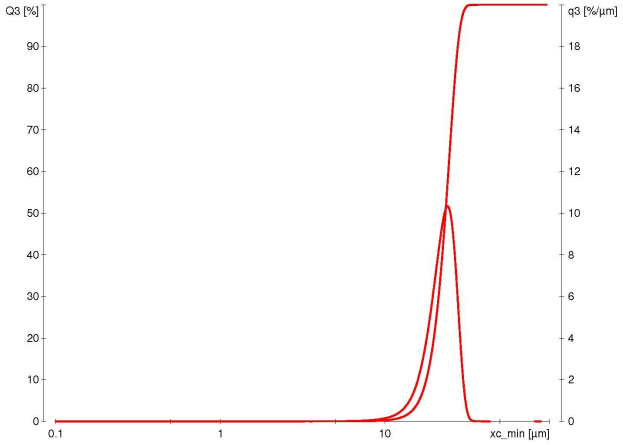
Solderking P2020 flux medium passes the ion chromatography test as <0.5% fluoride, chloride and bromide in accordance with J-STD 004 revision B. This revision demands a reflow pre-treatment of the solder paste flux in accordance with IPC TM650 2.3.34. Older revisions of J-STD 004 do not test for covalent halogens and can lead to confusion by allowing halogen contents over 0.5% (in some cases as high as 2%) to be classified as ROL1. P2020 is a true ROL1.



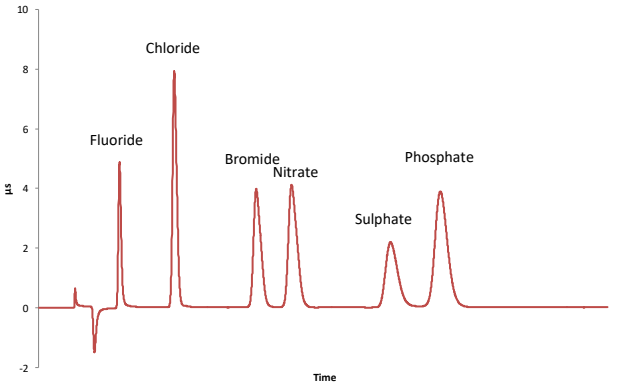
Ion chromatogram of SK P2-5 reflowed flux residue in accordance to J-STD-004B, TM 650 2.2.34, showing <0.5% halide.



Particle Size 20-38 µm



Particle Size 10-25 µm

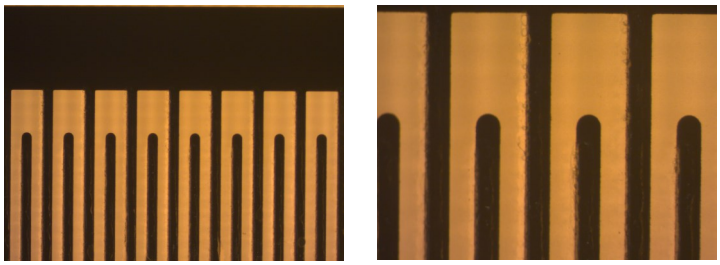


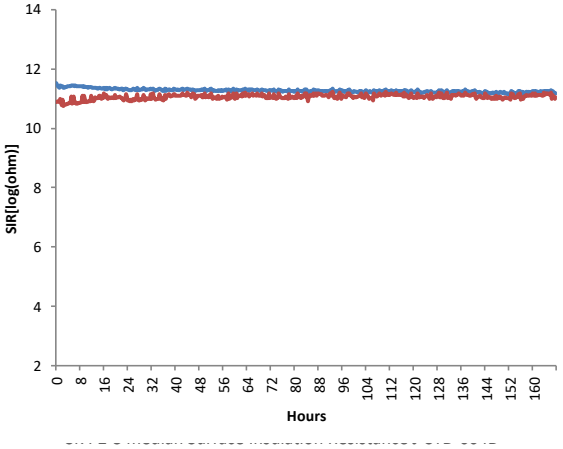
Ion chromatogram of halide analytical standard showing fluoride, chloride, bromide, nitrate, sulphate and phosphate as low as 3 mg Kg^{-1}

Cleaning

P2020 is no clean. If cleaning is required a range of Solderking solvent, water based and saponification cleaners are available for ultrasonic, spray in air and spray under immersion.

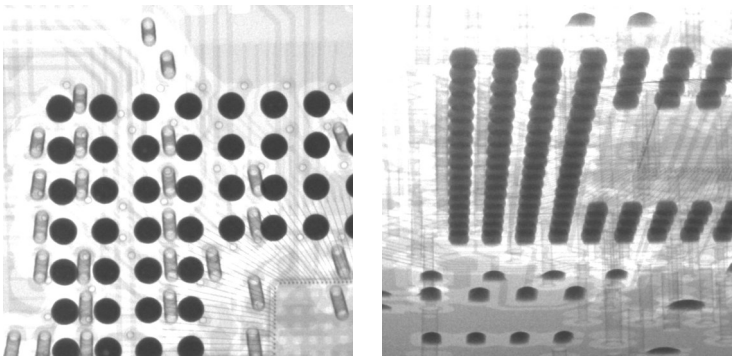
Surface Insulation Resistance





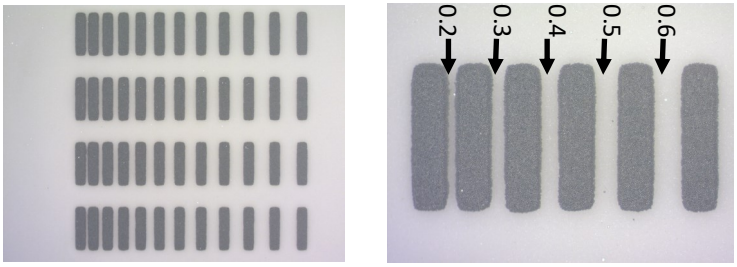
Above: J-STD 004B Surface Insulation Resistance test showing no conductive anodic filament (CAF) migration or dendritic growth after 168 hours at 40°C 90% relative humidity

No voiding, or head-in pillow defect



Typical P2020 x-ray images of BGA's with no voiding, or head-in-pillow defect visible

No Slump



J-STD 005A 150°C, 15 minutes—no slump to 0.2mm

No Solder Balls



J-STD 005A Solder balls– no solder balls

Storage & Care of Paste

Shelf Life Un-opened containers –12 months from manufacture date.

Shelf life Open Containers- Will depend on the environmental conditions, ensure lids are replaced and tightened.

Conditions- When solder paste is received at the customer's location, the temperature should be in the range of 0 - 25 ºC. It is recommended that the solder paste be stored in a refrigerator within the range of 0 - 10 ºC.

Safety information

Always read safety data sheet before use. For any further information please contact::

info@solderking.com.

RoHS & REACH Directive

Solderking P2020 Solder Paste is RoHS and REACH compliant. The product does not contain any SVHC's as per the current list.

The information supplied in this technical data sheet is designed only as guidance for use and handling of the product. This information is correct to the best of our knowledge and belief at the date of publication however no guarantee is made to its accuracy. This information related only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process.