



INTERFLUX® SOLDERPASTE

IF 9002

The solderpaste, with resin-like rheological properties is halogen free and provides optimum screenability. The flux media is designed to volatilize at reflow temperatures leaving a non tacky, transparent residue on the boards which does not need to be cleaned. The solderpaste is hydrophobic, has an excellent glue effect, no smell, no slump and no solderballing after reflow. IF 9002 is developed to ensure very good solderability on coppersurfaces, nickel-gold, and pretinned surfaces.

* Chemical Characteristics

State : viscous
Colour : grey
Odour : mildly, sweet odour
pH : 3 (Flux 5 % aq. solution)

| | <u>Value</u> | <u>Unit</u> |
|---------------------------------|-------------------------------------|---------------------|
| Flash Point | 162.7 | °C |
| Melting point | 179 - 183 | °C |
| Solubility in water | Insoluble (residue after soldering) | |
| Auto-ignition point | 370 | °C |
| Density (for 90 % metalcontent) | 4.98 | g/cm ^{1/2} |

* Viscosity

Stencil printing: Brookfield 5 RPM, TF spindle, 20°C :

| | |
|---|---|
| * 600.000 - 800.000 cps (89.5% Metalcontent, 45µ - 75 µ) | * 550.000 - 750.000 cps (89% Metalcontent, 25µ - 45µ) |
| * 650.000 - 850.000 cps (89.5 % Metalcontent, 25µ - 45 µ) | * 250.000 - 400.000 cps (86% Metalcontent, 25µ-45µ) |
| * 350.000 - 450.000 cps (88% Metalcontent, 25µ - 45 µ) | * 200.000 - 350.000 cps (85% Metalcontent, 25µ- 45µ) |

* Storage conditions

Fine pitch solderpaste (25µ - 45µ) and normal pitch solderpaste (45µ - 75µ). In air closed containers in refrigerator. Max 1 year, 5°C to 7°C.

In syringes, store vertical in refrigerator between 5°C and 7°C. Take out downward. Max. 1 year.

* Packaging

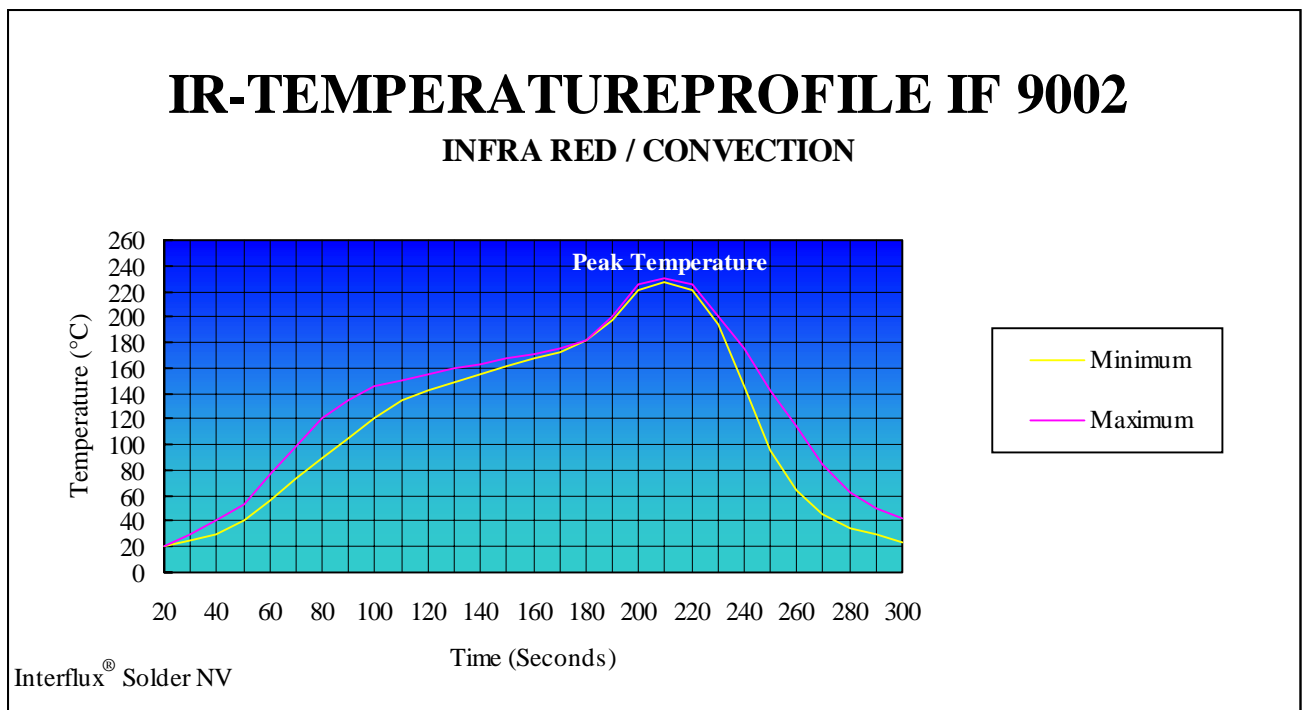
| | | | |
|-------------|-----------|------------|-------|
| Jar : | 250 grams | Syringes : | 5 cc |
| | 500 grams | | 10 cc |
| | | | 30 cc |
| Cartridge : | 500 grams | | |



Reflow-Parameters

Interflux® Solderpaste **IF 9002** requires the following IR/Convection profile:

- Preheating zone: **G1**: Linear temp. rise of 1.6°C - 2.2°C/sec. until 130°C
Activating zone: Variable temp. of 130°C to 180°C in 100sec.-120sec.
Reflow zone: Temp. rise from 180°C to peak temperature (230°C for 62-36-2 and 245°C for 63-37). Passage of the reflowpoint from 180°C, positive tangent, to 180°C, negative tangent in 30 - 60 sec. according to the mesh size of the powder.
G2 : Cooling down in 2.5°C - 5°C / sec.



According to the profile, IF 9002 needs 4-5 minutes for the total reflow cycle.
The Interflux® Solderpaste IF 9002 can also be used under Nitrogen.

Manufacturing Quality Control

Interflux® provides a certificate of conformity with each batch number.
The final Quality Control contains the following analysis : Viscosity, Metalcontent, pH value, Halide content, Copper mirror.



TEST RESULTS OF INTERFLUX® IF 9002

* Copper mirror test

Applied Standards: J-STD-004, '94
IPC-TM-650 Method 2.3.32
Requirement: No discoloration or removal of the Cu film
Results: Raw Flux : Passed Paste : Passed

* Presence of halides in the flux (Silver Chromate test paper)

Applied Standards: J-STD-004, '94
IPC-TM-650 Method 2.3.33
Requirement: No colour change
Results: Raw flux : Passed Flux extract : Passed

* Corrosion, flux

Applied Standards: J-STD-004, '94
IPC-TM-650 Method 2.6.15
Requirement: No evidence of green-blue discoloration after 10 days at 40°C, 93% R.H.
Results: Passed

* Surface Insulation test

Applied Standards: J-STD-004, '93
IPC-TM-650 Method 2.6.3.3
Requirement: After 24 hrs, 96 hrs and 168 hrs at 65°C, 85% R.H., with applied bias 50 V DC, must be 5×10^8 Ohm or 10^2 Mohm. (Measurement with 100 VDC)
Results: Passed

| | <u>IF 9002 paste</u> | <u>IF 9002 flux</u> | <u>Control board</u> |
|----------------|--------------------------|--------------------------|--------------------------|
| Initial value: | 2.9×10^{10} Ohm | 3.2×10^{10} Ohm | 2.7×10^{10} Ohm |
| 24 hrs: | 6.1×10^8 Ohm | 7.6×10^8 Ohm | 6.1×10^8 Ohm |
| 96 hrs: | 6.1×10^8 Ohm | 7.7×10^8 Ohm | 6.2×10^8 Ohm |
| 168 hrs: | 6.3×10^8 Ohm | 7.9×10^8 Ohm | 6.3×10^8 Ohm |

Climatic chamber cooled down, measurement after 24 hour at ambient T°.
 3.3×10^{10} Ohm 3.7×10^{10} Ohm 3.2×10^{10} Ohm



*** pH of the 5% aqueous solution**

Applied Standards: Bellcore TR-NWT-000078
Requirement: 3 - 7
Results: Raw Flux : Passed Flux extract : Passed

*** Solderball test**

Applied Standards: J-STD-005, '93
IPC-TM-650 Method 2.4.43
Requirement: Reflow within 15 minutes
Reflow after 4 hours
Results: Reflow within 15 min.: Passed (Cat. I)
Reflow after 4 hrs: Passed (Cat.I)

*** Wetting test**

Applied Standards: J-STD-005, '93
IPC-TM-650, Method 2.4.45
Requirement: Shall uniformly wet the Cu coupon without evidence of dewetting or non wetting
Results: Passed

*** Spread test**

Applied Standards: J-STD-004, '94
IPC-TM-650, Method 2.4.46
Requirement: Solderspread is expressed in mm²
Results: 96.23 mm²

*** Slump test**

Applied Standards: J-STD-005, '93
IPC-TM-650, Method 2.4.35
Requirement: 15 min. at 25°C, 50% R.H. and 10 min. at 150°C, no slump effect or bridging may occur.
Results: After 15 min.at 25°C, 50% R.H.: Passed
After 10 min at 150°C: Passed

*** Metalcontent**

Applied Standards : J-STD-005, '93
IPC-TM-650, Method 2.2.20
Requirement : Expressed in %
Results : * 90% (Stencil) * 89 % (Screen or Stencil)
* 89.5% (Stencil) * 88% to 85% (Syringes)



*** Powder specifications**

Following types are available :

| Alloy | Mesh size | Microns |
|-------------|------------|------------------------|
| Sn63Pb37 | -200 + 325 | 75μ - 45μ |
| Sn63Pb37 | -325 + 500 | 45μ - 25μ (Fine Pitch) |
| Sn62Pb36Ag2 | -200 + 325 | 75μ - 45μ |
| Sn62Pb36Ag2 | -325 + 500 | 45μ - 25μ (Fine Pitch) |

Only high quality solderpowders are used.

A certificate of analysis is available on request, including the particle size distribution.

Paste removal from the stencil or screen can be done by using Isopropanol, other solvents alcohol based or by using a basic soap and hot water.

For more information about health and safety we refer to our MSDS.

Product information in other European languages can be obtained at *Interflux® Solder NV, 9042 Gent*. Because we cannot anticipate or control the many different conditions under which this information and our products may be used, we do not guarantee the applicability or the accuracy of this information or the suitability of our products in any given situation. Users of our products should make their own tests to determine the suitability of each such product for their particular purposes. The products discussed are sold without such warranty, either expressed or implied.

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