



QUALITEK®

Delta Elite™

691-A

Solder Paste, Low Residue No-Clean

DESCRIPTION

691 No-clean is a low residue solder paste designed for surface mount and other electronic assembly applications. The unique properties of this formula provide excellent activity, long stencil life, long tack time, high print speed, and a longer shelf life. Post soldering residues are transparent, non-corrosive, non-conductive, and pin-testable.

BENEFITS

- Bellcore compliant
- 24 hour stencil life
- Excellent wetting on OSP
- 48 hour tack time
- Prints up to 8 in per sec.
- Pin testable
- Low residue
- Air or nitrogen reflow

APPLICATION

STENCIL PRINTING/PARTICLE SIZE

≥ 50 mil pitch: Use -200+325 mesh
≥ 16 mil pitch: Use -325+500 mesh
≤ 16 mil pitch: Use -400+635 mesh

ALLOYS

Sn63/Pb37, Sn62/Pb36/Ag2, etc.
(Meets J-STD-006 Specification)

METAL CONTENT

Stencil Printing: 89%
Screen Printing: 88%

REFLOW PROFILE

The melting temperature of the solder and the heat resistance of components determine reflow Profile. 691 can be processed in most reflow media, (i.e. IR, Vapor-phase, Forced convection, etc.). Ramp rate of 2.5-3.0°C per second is desirable, since most components are rated for 4.0°C per second.

PHYSICAL / CHEMICAL CHARACTERISTICS

| | |
|--|---|
| Color and Appearance | Metallic Gray |
| Copper Mirror Test | Pass/No breakthrough |
| Silver Chromate (Chloride & Bromide Test) | Pass/No discoloration |
| Surface Insulation Resistance | |
| Bellcore ⁴ | 3.12 x 10 ¹² ohms (4 days, 35°C, 85% R.H.) |
| J-STD-004 | 9.73 x 10 ¹² ohms (7 days, 85°C, 85% R.H.) |
| pH-5% Aqueous Solution (Flux Extract) | |
| | 6.0-8.0 |
| Softening Point | 125°C (257°F) |
| Electromigration, Bellcore⁴ | Pass |
| Viscosity | |
| Malcom ¹ | 160-220 kcps, 89% metal, (-325+500 mesh) |
| Brookfield ² | 950 kcps +/- 10%, 89% metal, (-325+500 mesh) |
| Tack³ | |
| Time | 48 Hours (22°C, 45% R.H.) |
| Initial tack force | 54.1 grams (1.63g/mm ²) |
| Tack retention after 24 hours | 68.6 grams (2.07g/mm ²) |

SHIPPING & STORAGE

Recommended Storage Temperature 35°-50°F

SHELF LIFE

| | | |
|--------------------|----------|---------------------|
| Unopened Container | 35°-65°F | 6 Months (from DOM) |
| | 77°F | 3 Months (from DOS) |

1. Malcom PCU-Series, 10 RPM, 25°C
2. Brookfield RVTD, TF spindle, 5 RPM, 25°C, 0.75" spindle depth
3. Per IPC-TM-650 2.4.44
4. Bellcore GR-78-CORE

Delta Elite® is a registered trademark of Qualitek International, Inc.

TEL: (630) 628-8083 FAX: (630) 628-6543 E-MAIL: solder@qualitek.com HOME PAGE: <http://www.qualitek.com>

HEADQUARTERS: 315 Fairbank St., Addison, IL 60101 U.S.A.

WORLDWIDE BRANCHES: UNITED KINGDOM – MEXICO – CHINA – PHILIPPINES – SINGAPORE

QUALITEK INTERNATIONAL, INC. AN ISO 9002 CERTIFIED COMPANY

This data is based on information that the manufacturer believed to be reliable and offered in good faith. Qualitek International, Inc. makes no warranties expressed or implied as to its accuracy and assumes no responsibilities and liabilities arising out of its use by others as conditions and methods of use of the products is beyond the control of Qualitek International, Inc. The user must determine the suitability of the product before using it on a commercial basis. The warranties extend only to the conformity of the product to the physical descriptions. In no event will Qualitek International, Inc. be responsible for special, incidental and consequential damages whether the claim is in contract, negligence or otherwise.

RevA: 120107-691A

Consult MSDS for health and safety information

691 PROFILE

