

## SCS7 CLF4128

*Water Soluble Core Wire*



### Product Description

SCS7\* is Asahi's latest lead free alloy development. As an enhanced tin/copper lead free alloy, it is highly recommended to directly replace existing SnCu0.7 solder. This alloy not only exhibits the excellent ductility of SnCu0.7 solder, it also possesses superior mechanical strength both in ambient and high temperature environments. SCS7's fatigue resistance is now comparable to tin/lead solder and as such, SCS7 has addressed the fundamental concerns of SnCu alloys.

SCS7 CLF4128 lead free water soluble core flux solder wire is developed for the use in electronic industries where the difficult assemblies are to be soldered. The flux residue is easily removed with DI water, providing the board with high ionic cleanliness. SCS7 CLF4128 provides excellent instant wetting action and superior solderability on a variety of surface finishes. It is low smoke, low spattering, less odor and no charring on solder iron tip.

### Application

SCS7 CLF4128 lead free water soluble core flux solder wire is easy to use for automatic, manual, rework, point and brush soldering. For the best soldering results, the recommended parameters are shown:

Solder Iron Tips: All Types especially the tapered types  
 Soldering Temp: > 350°C  
 Soldering Time: 1 - 3 secs

- Keep solder iron tips clean.
- Tinned iron tips before use.
- Wear gloves when soldering to avoid contaminating the wire.

(Note: Soldering parameters are dependent on tip type, soldering station wattage configuration, wire diameter and type of applications.)

### Specification

Item	Result
Alloy Composition	Sn/Cu0.7/Si0.02
Flux Content	3.0 ± 0.3 wt%
Halide Content	0.6 ± 0.1 wt%
JIS Z 3197 8.1.4.2.1	
Surface Insulation Resistance	
(85°C, 85%RH, 168hrs)	
IPC-TM-650 2.6.3.3	> 1 x 10 <sup>8</sup> Ω, Pass
JIS Z 3197 8.5.3	> 1 x 10 <sup>11</sup> Ω, Pass
Electromigration	Pass
(85°C, 88.5%RH, 596hrs)	
IPC-TM-650 2.6.14.1	
Copper Corrosion Test	Pass
IPC-TM-650 2.6.15	
JIS Z 3197 8.4.1	
Copper Mirror Test	Classified as "H", Pass
IPC-TM-650 2.3.32	
JIS Z 3197 8.4.2	
Flux Activity Classification	ROH1
IPC J-STD-004	
Spread Factor	> 75% (SCS7)
JIS Z 3197 8.3.1.1	

- \* World Patent No. 2006/045995 A1
- \* US Patent No. 7472817
- \* Japanese Patent No. 4048288

## SCS7 CLF4128 Water Soluble Core Wire

### PHYSICAL PROPERTIES

Melting Temperature	227°C
Coefficient of Thermal Expansion	22.7 $\mu\text{m}/\text{m}^\circ\text{C}$
Density	7.30 $\text{g}/\text{cm}^3$

### MECHANICAL PROPERTIES (As-Cast) (ASTM E8M 3mm/min at 23°C)

Tensile Strength	45.83 MPa
Yield Strength	38.78 MPa
Max Percent Strain	68.16 %
Energy to Yield Point	0.203 J
Energy to Break Point	18.05 J
Toughness	25.54 MPa
Creep Resistance (Load at 1kg @ 145°C)	> 40hrs

### RESIDUAL REMOVAL

The flux residue can be left on board for up to 8 hours. The residue can be easily cleaned off with distilled or de-ionized water with agitation (ultrasonic/spray) and temperature of 40 - 60 °C.

### STORAGE

Store the solder wire in a cool, dry and non-corrosive environment. Wrap up the solder wire when not in use to reduce exposure to environment. SCS7 CLF4128 lead free no clean core flux solder wire can be kept for 2 years if proper storage conditions are observed.

### HEALTH and SAFETY

Wear a chemical mask if the operators are allergic to the fumes released during soldering. For more information, please refer to Material Safety Data Sheet.

### PACKAGING

SCS7 CLF4128 lead free core flux solder wire is commonly available in various diameters such as 0.25, 0.3, 0.4, 0.5, 0.6, 0.8, 1.0, 1.2, 1.6 and 2.0 mm. For different diameters, please specify your requirements.

Packaging	0.03kg	0.10kg	0.20kg	0.25kg	0.50kg	1.0kg	0.20kg
Diameter (mm)	0.25	0.3	0.4	0.5 to 2.0	0.5 to 2.0	0.8 to 2.0	0.4

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### Singapore Asahi Chemical and Solder Industries Pte Ltd

47 Pandan Road Singapore 609288

Tel: +65 6262-1616 Fax: +65 6261-6311

Website: <http://www.asahisolder.com> Email: [enquiry@sinasahi.com.sg](mailto:enquiry@sinasahi.com.sg)