ELFLUX 1004S Flux for Solar Industries

General Description

ELFLUX 1004S is a solvent-based, halide-free, organic no clean flux. ELSOLD 1004S is particularly suitable for use in soldering processes of the solar industries and designed for soldering solar modules, joining of silicon cells and strings. ELFLUX 1004S is low in solids and is free from rosin. It is effective on lead containing as well as on lead-free platings. ELFLUX 1004S leaves practically no residues, and no discoloration on the modules.
Besides the standard version of 2 % solids content there is a version with 1.5 % solids for applications where the small amount of residue shall be reduced further. For difficult to solder components (long storage or else) there is a version of 2.5 % available.
Following technology steps in the manufacturing process of solar modules are not affected negatively.

Areas of Use

ELFLUX 1004S is particularly suited for soldering strings and connectors to solar cells in lead and lead-free applications and for general surface-mount technology.

Classification

ELFLUX 1004S is classified as ORL0 per DIN EN 61190-1-1 and per IPC ANSI/J-STD-004.

Technical Specification

	ELFLUX 1004S 2 %	ELFLUX 1004S 1.5 %	ELFLUX 1004S 2.5 %
Appearance	Clear, transparent liquid	Clear, transparent liquid	Clear, transparent liquid
Smell	Mild alcoholic	Mild alcoholic	Mild alcoholic
Density [g/cm³] (20 °C)	0.790 ± 0.003	0.788 ± 0.003	0.793 ± 0.003
Solids content [%] (per IPC-TM-650 2.3.34)	2.0	1.5	2.5
VOC content [%]	> 90, Solvent-based	> 90, Solvent-based	> 90, Solvent-based
Acid number [mg KOH/gFlux]	16 ± 1	12 ± 1	20 ± 1
Halides [%]	Nil	Nil	Nil
Flash point [°C]	12	12	12
Ignition temperature [°C]	399	399	399
Recommended thinner	ELSOLD 200	ELSOLD 200	ELSOLD 200

Application

ELFLUX 1004S can be applied by spraying, brushing, and dipping.

Hüttenstraße 1 · D-38871 Ilsenburg
Phone +49 (0)39452 4879-11 · Fax: -66
info@tamura-elsold.de

When selecting the appropriate process parameters respect the guidelines of the equipment maker and the requirements of the product to be soldered. Optimum preheat temperatures are in the range of 110 – 150 °C as measured at the bottom side. However, the thermal stability of 1004S flux allows for even higher temperatures without any loss of activity.

Process Control

When processing the flux in a spray fluxer from a closed system it is normally not required to control the density or acid number of the flux.

Cleaning

ELFLUX 1004S is a no clean flux. Generally, cleaning is not required.

General Safety Precautions

ELFLUX 1004S should be used according to industrial standards of practice. For safety advice please refer to the material safety data sheet.

Packing Sizes

ELFLUX 1004S is available in containers of 10 L or 20 L.

Storage

ELFLUX 1004S is flammable. Store away from sources of ignition. Storage temperature: 5 – 25 °C.

Shelf Life

Under adequate conditions ELFLUX 1004S can be stored in original unopened containers for a minimum of 12 months.

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