

ELFLUX 3001 NC

General Description

ELFLUX 3001 NC is a water-based flux with a low solid content. It is a halide-free, organic flux for use in wave soldering under inert gas atmosphere.

The residues on the printed circuit board are not tacky. Electrical in-circuit testing can be done without any problem. The solder joints are low in residues and in general cleaning is not necessary.

ELFLUX 3001 NC improves the soldering result and minimizes the formation of solder bridges and solder balls. ELFLUX 3001 NC contains a corrosion inhibitor reducing the risk of corrosion on copper surfaces under humid conditions.

Areas of Use

ELFLUX 3001 NC has been developed especially for OSP surfaces but also shows very good soldering results on chemical tin or HAL surfaces.

ELFLUX 3001 NC can be used both for the automotive and the telecommunication areas. ELFLUX 3001 NC has been developed also for processing lead-free alloys like SnCu0.7, SnAg3.5, SnAg3.5Cu0.7 and similar alloys.

Classification

ELFLUX 3001 NC has been classified as ORLO per DIN EN 61190-1-1 and IPC ANSI/J-STD-004.

Technical Specification

ELFLUX 3001 NC	
Appearance	Clear, transparent liquid
Smell	Odourless
Solids content [%] (per IPC-TM-650 2.3.34)	3.1
Density [g/cm ³] (20 °C)	1.007 ± 0.003
VOC content [%]	None
Acid number [mg KOH/gFlux]	27 ± 1.5
Halides [%]	None
pH value [20 °C]	2.6
Flash point [°C]	None
Ignition temperature [°C]	None

Application

ELFLUX 3001 NC can be applied exclusively by spraying. TAMURA ELSOLD recommends spray fluxers which are able to process the flux directly from the delivery container. The optimum preheating temperature is 110 – 135 °C as measured on the top side (component side) of the board. The use of more nitrogen is recommended for most soldering equipment types in order to avoid the formation of vapour in the soldering tunnel. Soldering equipment makers will be able to advise you accordingly. Partial convection pre-heating saves energy.

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Lead-free solders:

ELFLUX 3001 NC is thermally stable and can therefore also be used under increased preheating temperature.

Corrosion and Electrical Tests

Surface insulation resistance measurement (per IPC-TM-650 2.6.3.3): pass

ELFLUX 3001 NC was tested by Siemens Berlin under aggravated test conditions and approved. The test certificate can be downloaded from the TAMURA ELSOLD website www.tamura-elsold.de.

Insulation resistance (per IPC-TM-2.6.3.3B)

Climate	85 °C/85 % RH
Bias	45 – 50 V
Comb pattern	IPC-B-24

<i>Results</i>	<i>SIR values (168 h)</i>
Pattern up, not cleaned*)	3,6 x 10 ⁹ Ω
Pattern down, not cleaned*)	3.8 x 10 ⁹ Ω
Blank	3,4 x 10 ⁹ Ω **)
Electrolytic corrosion	pass (no migration detected)

*) Mean out of 12 test coupons, **) out of 8 coupons, resp.

Results

SIR value after 16h and 168 h under 40 °C/93 % RH, 5 V DC, 168 h, test coupon 0.4 mm lines, 0.2 mm spacing:
1.1 x 10⁹ Ω min.

Dendritic growth: pass (no dendrites detected)

Cleaning

Cleaning of the boards: ELFLUX 3001 NC is a no-clean flux. Generally, cleaning is not required.

General Safety Precautions

ELFLUX 3001 NC should be used according to industrial standards of practice. For safety advice please refer to the material safety data sheet.

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Packing Sizes

ELFLUX 3001 NC is available in containers of 10 L or 20 L

Storage

ELFLUX 3001 NC is not flammable and is therefore not subject to any restrictions regarding the stored quantity, not even near the soldering machine. The product does not have to be stored in dangerous goods stores. ELFLUX 3001 NC is water-based and should not be stored under 3 °C.

Shelf Life

Under adequate conditions ELFLUX 3001 NC can be stored in original unopened containers for a minimum of 12 months.

The information contained herein is based on technical data that we believe to be reliable and is intended for use by persons having technical skill, at their own risk. Users of our products should make their own tests to determine the suitability of each product for their particular process. TAMURA ELSOLD will assume no liability for results obtained or damages incurred through the application of the data presented.