



Product Information

FELDER-ISO-Core[®] "UltraClear", lead free

Flux filled, halide- and lead-free soft solder wire for soldering in the electronics production
Flux according to DIN EN 61190-1-3 / IPC J-STD-004: RELO, DIN EN ISO 9454-1: 1231

Item no.: (55/56)51....

All information about our products is the result of our long standing experience, which we would like to pass on to our customers. Since we do not have any influence on the application with our products, please see the warranty claims in our conditions of sale because our liability is limited.

This product information describes not any warranted properties.

Description

High-quality, lead-free solder wire for hand and machine soldering in the field of electrical engineering, electronics and also electro mechanics. The flux characterises itself by **high temperature resistance** and **no** spattering during the melting process. An **optimal wetting** as well as **standard exceeding spreading values** make this lead-free solder wire to a top-quality product among the cored solder wires.

The new FELDER flux recipe "UltraClear" is built upon a basis of synthetic resins (free from colophony) and has been perfectly matched to the requirements of the lead-free soldering technique in the assembly production:

- **fast wetting and high spreading** on all common surfaces in electronics
- **no flux spatters** on the components, on plant sections or on users' hands
- **crystal clear flux residues** to enhance the optical impression
- **lowest outgassing and neutral smell** reduce the workplace pollution
- **easily removable flux residues from the solder iron tips**, which can be removed with conventional means (FELDER Tinner, soldering sponge, metal wool)
- **flux type RELO according to J-STD-004 and DIN EN 61190-1-3** for assembly production
- **the durability of the solder iron tips will be considerably extended**

Solder Alloys

Alloy	EN ISO 9453:2014	DIN EN 61190	Melting Range	Item-No.
Sn100Ni+ *	Sn99,25Cu0,7Ni0,05	Sn99,25Cu,7Ni,05	227°C	555194....
SN100C*	Sn99,25Cu0,7Ni0,05	Sn99,25Cu,7Ni,05	227°C	565194....
Sn99Ag+ *	Sn99Cu,7Ag,3(NiGe)	Sn99Cu,7Ag,3(NiGe)	217 - 227°C	555181....
Sn96,5Ag3Cu0,5	Sn96,5Ag3Cu0,5	Sn96,5Ag3Cu,5	217 - 219°C	5176....
Sn95,5Ag3,8Cu0,7	Sn95,5Ag3,8Cu0,7	Sn95,5Ag3,8Cu,7	217°C	5184....
Sn99,3Cu0,7	Sn99,3Cu0,7	Sn99,3Cu,7	227°C	5194....

Further lead-free alloys are available on customer's request.

Patents

* FELDER GMBH produces all NiGe-alloys with the licence for Fuji patents (JP 3296289, USP 6.179.935 B1 and DE 198 16 671 C2) as well as for Nihon Superior patents (DE 69918758 and EP 0985486).

Impurities / Tolerances according to EN ISO 9453:2014

e.g.: SAC 305

Element	Ag	Al	As	Bi	Cd	Cu	Fe
Content (%)	3,0 ± 0,2	0,001	0,03	0,1	0,002	0,5 ± 0,2	0,02
Element	Pb**	Sb	Sn	Zn			
Content (%)	0,07	0,1	Rest	0,001			

e.g.: Sn100Ni+

Element	Ag	Al	As	Bi	Cd	Cu	Fe
Content (%)	0,003	0,001	0,03	0,1	0,002	0,7± 0,2	0,02
Element	Ge	Ni	Pb**	Sb	Sn	Zn	
Content (%)	0,01- 0,015	0,05 ± 0,03	0,07	0,1	Rest	0,001	

**The maximum lead content in FELDER electronic solder wires is 0.05 %.

Properties

Flux type	:	1231 according EN ISO 9454-1 (RELO)
Flux content	:	2.2 % (standard), 1.5 %, 3.5 %
Halide content	:	< 0.01%
Flux distribution	:	single cored (standard), 3-, 5-cored also available

Copper mirror test

acc. to IPC-TM-650, 2.3.32 : passed (no mirror breakage)

Corrosion test

acc. to IPC-TM-650, 2.6.15 : no corrosion

SIR-test

acc. to IPC-TM-650, 2.6.3.3 : >100 MΩ at 85 °C/85 % RH, 168 h

Migration test

: no e-corrosion

Ø in mm : 0.25, 0.35, 0.50, 0.75, 1.00, 1.50, 2.00

Spool sizes in kg : 0.10, 0.25, 0.50, 1.00, 2.50, 5.00

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Cleaning

The crystal clear, solid flux residues, classified as RELO (1231), are also non-corrosive on non-ferrous metals. Therefore, they may remain on the soldering joint.

Advice

Lead-free FELDER-ISO-Core® "UltraClear" solder wires do not contain any substances that are subject to restriction by directive 2011/65/EU ("RoHS").

We are pleased to produce all solder wires according to your company standards.

Storage

Keep dry and as far as possible dust-free. Minimum durability: 60 months.

Handling Advice

Please refer to the corresponding MSDS.