Product Information

FELDER Silver Hard Solders, cadmium free

According to EN ISO 17672
Refers to flux-coated rods: flux type according to EN ISO 18496 (EN 1045) - FH 10

Item no.: 34 .. .. ..

**We abstain from using boric acid and environmental harmful colorants and deliver our flux-coated silver hard solders with white flux coating and imprinted alloy, dimension, and batch number.
The flux coating is available in three different thicknesses: L - M - H**

Description

Cadmium free silver hard solders with 30, 34, 40, 45 or 56 % silver, optional with flux coating.

Properties

Our cadmium free silver hard solders are characterised by very good flow properties and high tensile strengths. The optional flux coating is **boric acid free**. No health hazardous soldering fumes are generated during the soldering process. The soldering joints are heat-resistant up to 200° C.

Designation acc. to EN ISO 17672	Designation acc. to DIN 8513	Melting range	Working temperature	Tensile strength of the soldering joint	Density
Ag 130	L-Ag30Sn	665 - 755° C	740° C	430 N/mm²	8.8 g/cm³
Ag 134	L-Ag34Sn	630 - 730° C	710° C	430 N/mm²	9.0 g/cm³
Ag 140	L-Ag40Sn	650 - 710° C	690° C	400 N/mm²	9.1 g/cm³
Ag 145	L-Ag45Sn	640 - 680° C	670° C	400 N/mm²	9.2 g/cm³
Ag 156	L-Ag55Sn	620 - 655° C	650° C	400 N/mm²	9.4 g/cm³

Composition

Designation	Composition (in weight-%)			
	Ag	Cu	Zn	Sn
Ag 130 (L-Ag30Sn)	30	36	32	2
Ag 134 (L-Ag34Sn)	34	36	27.5	2.5
Ag 140 (L-Ag40Sn)	40	30	28	2
Ag 145 (L-Ag45Sn)	45	27	25. 5	2.5
Ag 156 (L-Ag55Sn)	56	22	17	5

Impurity Tolerances

max. [weight. -%]: Al 0.001; Bi 0.030; Cd 0.010; P 0.008; Pb 0.025; Si 0.05; total 0.15

Application Field

For the hard soldering of steel, malleable cast iron, copper, copper alloys, nickel and nickel alloys. Ag156 is applicable for almost all types of stainless steel (for soldering on CrNi-steel in direct contact with sea water resp. brackish water, acids and alkalis we nevertheless recommend an indium and nickel containing solder). Cadmium free silver hard solders are used, among others, in the medical and food sectors.

 Status: 08/23

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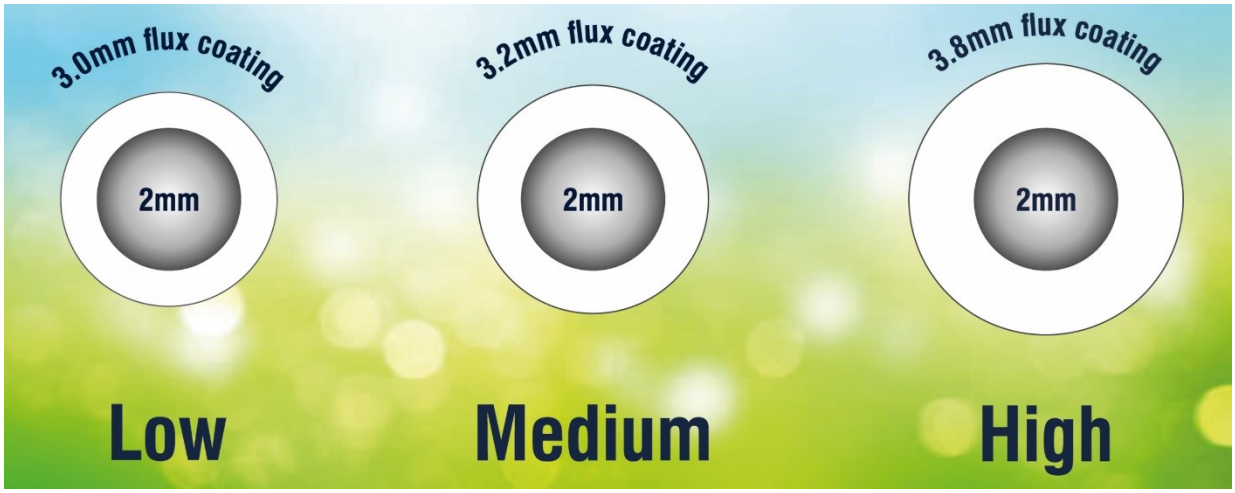
Application Field (continued)

Also, very suitable for technical gas pipelines, e.g. Oxygen, Nitrogen, Hydrogen, CO_2 as well as noble gases, e.g. Argon and Helium. The soldering joints are applicable with operating temperatures from -200° C up to +200° C. No significant reduction of the tensile strength and notched impact strength of solder joints on copper, brass and steel at -196° C determined. Bare material should be soldered in connection with a flux according to EN ISO 18496 (EN 1045) - FH 10 („**CuFe Nr. 1**“ paste respectively „**CuFe P**“ powder).

Application Advice

First, free the soldering parts from strong oxide layers, tinder, dross, oils and greases. When using **bare** solder apply sufficient flux on the soldering joint and the surrounding area. Heat the work piece up to working temperature, apply solder rod and le it melts.
When using **flux-coated** solder, pre-heat the work piece, apply solder rod and let the flux-coating melt on it as needed. Heat up to working temperature and let the solder melt off. The flame of the solder burner should be adjusted from neutral up to slightly reducing (gas surplus). The flux residues must be removed thoroughly; they are water-soluble.

The variety of different soldering applications requires sometimes more and sometimes less flux for an optimal soldering joint. Therefore, we offer flux coatings in three thicknesses with the gradations L-M-H.



Flux coatings, on the example of a 2.0 mm rod

Further Information

FELDER cadmium free silver hard solders do not contain any substances above 0.1 weight-% (0.01 weight-% for cadmium) based on each homogeneous material, for which exist restrictions in the guideline 2011/65/EU („RoHS“).

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Further Information (continued)

For the soldering from copper on copper, we recommend our copper hard solders "Cu-Rophos® 94", "Cu-Rophos® 2","Cu-Rophos® 5" and "Cu-Rophos® 15". For this application, no flux is needed.

Bare as well as flux-coated silver hard solders are unlimited durable if stored properly (at constant room temperature and humidity).

Delivery Forms

Delivery Forms	Dimensions
500 mm rods 1 kg-fabrications rings Wire on spools	Ø 1.0 mm
	Ø 1.5 mm
	Ø 2.0 mm
	Ø 3.0 mm

Delivery Form	Dimensions	Ø with flux coat		
		L - Low	M - Medium	H - High
Flux-coated rods	Ø 1.5 mm x 500 mm	2.5 mm	2.7 mm	3.2 mm
	Ø 2.0 mm x 500 mm	3.0 mm	3.2 mm	3.8 mm
	Ø 3.0 mm x 500 mm	3.8 mm	-	5.1 mm

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