

# FELDER

— seit 1979 —

## LÖTTECHNIK

# DELIVERY PROGRAM

The technology for soldering, brazing and welding.





## High-Quality joints made in Oberhausen-Germany

Since its founding in 1979, FELDER GMBH stands for first-class products. The perfect alignment of our product range and services tailored to the requirements of our customers makes us the perfect partner on our special field: the development and production of solders, solder pastes and fluxes for soft soldering and brazing.

The product range is just as varied as the areas of application. Our products can be found for example in solar and building technology, in roofing, in the car body technology, for many industrial applications and in the highly developed electronics industry.

No matter whether for a zinc gutter on the roof, the copper pipe on the wall or the circuit board in modern electronic devices - with our soldering technology products we always give 100% and grow each day with our tasks. In 1986 we relocated to our new production facility in Oberhausen. Further expansions and modernizations followed in 1991, 2005 and with an almost doubling of the production area in the years 2013/2014.

Since then, FELDER GMBH has developed to become the market leader and produces on over 7000 m<sup>2</sup> the complete product range around the soldering technology in Oberhausen, Germany.

The economic success and the consistently growing customer base confirm our work.

As one of Europe's leading manufacturers of solders, solder pastes and fluxes our products are subject to constant quality monitoring through our modern laboratory and correspond to a high-quality standard according to the guidelines of ISO 9001. Also the environmentally relevant aspects are strictly monitored and are certified according to ISO 14001.

Accurate consulting and customer-specific problem solutions are part of our philosophy.

Our wide product range makes us a perfect and reliable partner for both: industry and trade.

By maintaining our high-quality standard, FELDER GMBH will keep securing its market position in the future.

We are looking forward to working with you.

## FELDER GMBH

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Your single source for soldering supplies! If you are unable to find the products for your specific requirements in this brochure, please do not hesitate to contact our sales department. We would be delighted to help you!

## Soldering Rods

acc. to DIN EN ISO 9453

Delivery form	Dimensions	PU
Triangular rod	Approx. 10 x 10 x 10 x 400 mm	25.0 kg
pressed rod	Approx. 8 x 10 x 400 mm	25.0 kg



Article no.	Alloy	Melting range	Description and application
12250122	Pb74Sn25Sb1	185 - 263 °C	Triangular rods, body tin
12251000	Pb74Sn25Sb1	185 - 263 °C	Pressed rods, body tin
12310120	Pb70Sn30	183 - 255 °C	Triangular rods, radiator construction, soldering of stainless steel
12330120	Pb67Sn33	183 - 242 °C	Triangular rods, lead cable sheathing, zinc and zinc alloys
12360122	Pb65Sn35	183 - 245 °C	Triangular rods, lead cable sheathing, zinc and zinc alloys
12410122	Pb60Sn40	183 - 235 °C	Roofing tin for copper and zinc gutters
12510120	Pb50Sn50Sb	185 - 216 °C	Roofing tin, general soldering in the metal trade
12610120	Sn60Pb40Sb	183 - 190 °C	Roofing tin, general soldering in the metal trade
13741000	Sn91Zn9	199 °C	Lead-free roofing tin for zinc gutters, pressed rods
12970120	Sn97Cu3	230 - 250 °C	Lead-free solder for copper troughs (without rivet), electronic solder
12940120	Sn99Cu1	227 °C	Lead-free electronic solder*
5512941026	Sn100Ni+	227 °C	Lead-free electronic solder*, minimal iron / copper deposition
12950120	Sn97Ag3	221 - 224 °C	Lead-free electronic solder*
12840120	Sn95,5Ag3,8Cu0,7	217 °C	Lead-free electronic solder*
12990120	Sn99,9	232 °C	Pure Tin
12911000	Sn92Cu8	230 - approx. 350 °C	Pressed bars, lead-free body tin
13761000	Sn90Zn7Cu3	200 - 280 °C	Pressed bars, lead-free body tin

Our lead-free solders comply with the RoHS directive and thus also with the ElektroG.

\* All electronic solders are available in other delivery forms: 400 g rods (330x20x10 mm), 1.0 kg rods (330x20x20 mm), 3.5 kg blocks (545x47x20 mm)

## Thread solder

acc. to DIN EN ISO 9453

Delivery form	Dimensions	PU
500 mm rods	2-3 mm, 3-4 mm, 4-5 mm, 5-6 mm	25 kg



Alloy	Melting range	Description and application
Pb70Sn30	183 - 255 °C	Radiator construction
Pb65Sn35	183 - 245 °C	Radiator construction
Pb60Sn40	183 - 235 °C	Radiator construction
Pb50Sn50Sb	183 - 216 °C	Tiffany solder
Sn60Pb40Sb	183 - 190 °C	Tiffany solder



## Aluminium soft solder

### Tin-zinc alloys as friction solder

Triangular rods à 400 mm

Furthermore, we recommend for soldering aluminium our flux-filled soft solder wire ISO-Core® "AL" and our aluminium soft solder paste.



Article no.	Alloy	Melting range	PU	Delivery form
13600120	Sn60Zn40	200 - 340 °C	20 kg	Triangular rod
13610120	Sn70Zn30	200 - 325 °C	20 kg	Triangular rod
13630120	Sn90Zn10	199 - 203 °C	20 kg	Triangular rod
13463033	ZnAl4	382 - 387 °C	15 kg	Wire 3.0 mm x 335 mm

## Bearing metal

### Acc. to DIN ISO 4381

For casting of bearing shells



Article no.	Alloy	PU	Delivery form
13090055	PbSb14SnCuAs (WM9)	1 pc	8 - 10 kg block
13100055	PbSb15Sn10 (WM10)	1 pc	8 - 10 kg block
13800055	SnSb12Cu6Pb (WM80)	1 pc	8 - 10 kg block
137700551	Sn81,3Sb12Cu6Zn0,6Ag0,1(MS <sup>2</sup> )	1 pc	8 - 10 kg block

## Bearing metal MS<sup>2</sup>

### Lead-free bearing white metal Sn81,3Sb12Cu6Zn0,6Ag0,1

The FELDER bearing metal MS<sup>2</sup> is free of lead, cadmium, arsenic and nickel. It is used for the highest demands on static load capacity and high hydrodynamic sliding speeds. FELDER bearing metal MS<sup>2</sup> has a high resistance to high-frequency dynamic alternating stresses. It also has good impact strength and dimensional stability with low creep deformation.

Our white metal MS<sup>2</sup> was tested by Siemens in 2019 and successfully approved for Siemens Berlin production.



Article no.	Alloy	PU	Delivery form
13090055	PbSb14SnCuAs (WM9)	1 pc	8 - 10 kg block
13100055	PbSb15Sn10 (WM10)	1 pc	8 - 10 kg block
13800055	SnSb12Cu6Pb (WM80)	1 pc	8 - 10 kg block
137700551	Sn81,3Sb12Cu6Zn0,6Ag0,1(MS <sup>2</sup> )	1 pc	8 - 10 kg block

## Solder wire ISO-Core® “RA“, “RA-05“

### Flux-filled, halogen activated soft solder wire

Flux according to DIN EN ISO 9454.1, 1123

or DIN EN 61190-1-1, ROM1

Standard solder wire for hand soldering in electrical engineering,

Standard flux content 2.5 %

Halogen content RA: 1.0%, RA-05: < 0.5%.

<b>Ø in mm</b>	0.15 • 0.25 • 0.50 • 0.75 • 1.00 • 1.50 • 2.00 • 3.00 • 4.00
<b>Spools</b>	0,10 • 0,25 • 0,50 • 1,00 • 5,00 • 10,00 • 15,00 kg



Alloy	DIN EN ISO 9453:2014	DIN EN 61190	Melting range	Lead-free/containing
Sn95,5Ag3,8Cu0,7	Sn95,5Ag3,8Cu0,7	Sn96Ag04Cu0,7	217 °C eutectic	Lead-free
Sn97Ag3	Sn97Ag3	-	221 - 224 °C	
Sn99,3Cu0,7	Sn99,3Cu0,7	Sn99Cu.7	227 °C eutectic	
Sn97Cu3	Sn97Cu3	-	227 - 310 °C	
Sn100Ni+ / SN100-403C	Sn99,25Cu0,7Ni0,05	-	227 °C eutectic	
Sn99Ag+	Sn99Cu0,7Ag0,3(NiGe)	-	217 - 227 °C	
Sn60Pb40	Sn60Pb40E	Sn60Pb40	183 - 190 °C	Lead-containing
Sn60Pb38Cu2	Sn60Pb39Cu1	Sn60Pb38Cu02	183 - 190 °C	
Pb50Sn50	Pb50Sn50E	Sn50Pb50	183 - 215 °C	
Pb60Sn40	Pb60Sn40	Sn40Pb60	183 - 238 °C	
Pb93Sn5Ag2	Pb93Sn5Ag2	Sn05Pb93Ag02	296 - 301 °C	RoHS-konform - Pb-share > 85%

Other alloys on request.

## Solder wire ISO-Core® “EL“

### Flux-filled, halogen-free activated soft solder wire

Flux according to DIN EN ISO 9454.1, 1131

or DIN EN 61190-1-1, ROLO.

No-clean standard solder wire for hand soldering in of electronics, standard flux content 3.5 %.

<b>Ø in mm</b>	0,15 • 0,25 • 0,50 • 0,75 • 1,00 • 1,50 • 2,00 • 3,00 • 4,00
<b>Spools</b>	0,10 • 0,25 • 0,50 • 1,00 • 5,00 • 10,00 • 15,00 kg



Alloy	DIN EN ISO 9453:2014	DIN EN 61190	Melting range	Lead-free/containing
Sn95,5Ag3,8Cu0,7*	Sn95,5Ag3,8Cu0,7	Sn96Ag04Cu0,7	217 °C eutectic	Lead-free
Sn97Ag3	Sn97Ag3	-	221 - 224 °C	
Sn99,3Cu0,7	Sn99,3Cu0,7	Sn99Cu.7	227 °C eutectic	
Sn97Cu3	Sn97Cu3	-	227 - 310 °C	
Sn100Ni+ / SN100-403C	Sn99,25Cu0,7Ni0,05	-	227 °C eutectic	
Sn99Ag+	Sn99Cu0,7Ag0,3(NiGe)	-	217 - 227 °C	
Sn60Pb40	Sn60Pb40E	Sn60Pb40	183 - 190 °C	Lead-containing
Sn60Pb38Cu2	Sn60Pb39Cu1	Sn60Pb38Cu02	183 - 215 °C	
Pb50Sn50	Pb50Sn50E	Sn50Pb50	183 - 215 °C	
Pb60Sn40	Pb60Sn40	Sn40Pb60	183 - 238 °C	
Pb93Sn5Ag2	Pb93Sn5Ag2	Sn05Pb93Ag02	296 - 301 °C	RoHS-konform - Pb-share > 85%

The qualities „EL“ and „ELR“ have been qualified by Siemens Berlin (certification body CT MM 6).



## Halogenide-free activated FELDER electronic solder wires according to DIN EN ISO 9454-1, 1231 or 2231

(Alloys, diameters and coil sizes on request)

**ISO-Core® "ELR"** Low residue no-clean SMD solder wire, specially adapted to the requirements of re-soldering work on SMD-assembled components. Standard flux content 1.0 %.  
Flux according to DIN EN ISO 9454-1, 2231; DIN EN 61190-1-1 / IPC J-STD-004, ORLO

**ISO-Core® "ELS"** Like our **ISO-Core® "ELR"**, but based on synthetic resins. Standard flux content 1.0 %.  
Flux according to DIN EN ISO 9454-1, 1231; DIN EN 61190-1-1 / IPC J-STD-004, RELO

### FELDER-special solder wires

(Alloys, diameters and coil sizes on request)

**ISO-Core® "LASER-RA"** Low residue special solder wire for use in laser soldering machines. The flux core is highly temperature-resistant and thus perfectly adjusted to the demanding requirements (fast soldering cycle, high soldering temperature) of the laser soldering process. Standard flux content 2.5 %.  
Flux according to DIN EN ISO 9454-1, 1223; DIN EN 61190-1-1 / IPC J-STD-004, REM1

**ISO-Core® "EWL"** Electronic solder wire with water-soluble flux based on organic acids, activated with halides. Especially for assemblies that are potted or coated with protective lacquer. In contrast to conventional no-clean flux residues, interaction with lacquer or potting compound can be ruled out here by completely removing the residues. Standard flux content 2.5 %.  
Flux according to DIN EN ISO 9454-1, 2123; DIN EN 61190-1-1 / IPC J-STD-004, ORM1

**ISO-Core® "LC10"** The flux in **ISO-Core® "LC10"** is characterized by its high temperature resistance and sprays during of soldering. It is acid, halide and rosin free! Despite the low flux content of only 1 % our **ISO-Core® "LC10"** has optimal wetting and spreading values. The FELDER **ISO-Core® "LC10"** is excellently suited for soldering class 3 high performance electronics, according to IPC-A-610. The new halogen-free flux formulation „**LC10**“ is based on synthetic resins (free of rosin) and was developed on the requirements of optically invisible and non-sticky flux residues during hand soldering. The very low, crystal-clear flux residues, classified as RELO, do not cause corrosion even in non-ferrous metals. They can therefore remain on the soldered joint. If necessary, the flux residues can be easily removed, e.g. with a brush. Flux according to DIN EN ISO 9454-1, 1211; DIN EN 61190-1-1 / IPC J-STD-004, RELO.

## Application matrix - FELDER- ISO-Core® electronic solder wires in comparison

Feature	ISO-Core Clear	ISO-Core Ultra-Clear	ISO-Core RA	ISO-Core LASER-RA	ISO-Core EL	ISO-Core ELR	ISO-Core ELS	ISO-Core EWL	ISO-Core LC10
EN ISO 9454-1	1222	1231	1123	1223	1131	2231	1231	2123	1211
J-STD-004	REL1	RELO	ROM1	REM1	ROLO	ORLO	RELO	ORM1	RELO
Flux content (standard)	2.2 / 3.5	1.5 / 2.2	2.5	2.5	3.5	1.0	1.0	2.5	1.0
No-Clean	•	•			•	•	•		•
Lead-free	•	•	•	•	•	•	•	•	•
Lead-containing			•		•	•	•	•	
High lead content ( > 85 %)	•		•		•				
Residues easy to remove	•	•	•	•	•	•	•	•	•
Water washable								•	
Halogenide-free		•			•	•	•		•
Synthetic resins	•	•		•			•		•
Hand soldering	•	•	•		•	•	•	•	•
Rework (Flux <1.5 %)	•	•				•	•		•
Automatic soldering	•	•		•				•	•
Laser Soldering	•	•		•					
Water clear residues	•	•							•
No flux splashes	•	•		•					•

# Solder wire ISO-Core®

“Ultra-Clear” • “Clear” • “RA-Clear”



## Flux-filled lead-free soft solder wires

Flux residues according to DIN EN 61190-1-1 / IPC J-STD-004  
Highly qualified solder wires for manual and automatic soldering in electrical engineering, electromechanics and electronics. Standard flux content 2.2 % / 3.5 %

**Thermally stable - splash-free - optimum wetting - crystal clear residues**

ISO-Core	IPC J-STD-004	EN ISO 9454-1	Halogen content	Resistance test (required <8.0 log Ohm)	Type
Ultra-Clear	RELO	1231	0 %	Passed - > 11.0 log Ohm	No-clean
Clear	REL1	1222	< 0,15 %	Passed - > 11.0 log Ohm	No-clean
RA-Clear	REM1	1223	< 1,2 %	Passed - > 10.0 log Ohm	No-clean

Alloy	DIN EN ISO 9453:2014	DIN EN 61190-1-3	Melting range
Sn95,5Ag3,8Cu0,7	Sn95,5Ag3,8Cu0,7	Sn95,5Ag3,8Cu,7	217°C eutectic
Sn96,5Ag3Cu0,5	Sn96,5Ag3Cu0,5	Sn96,5Ag3Cu,5	217 - 219°C
Sn99,3Cu0,7	Sn99,3Cu0,7	Sn99Cu,7	227°C eutectic
Sn100Ni+ / SN100 <sup>-403C</sup>	Sn99,25Cu0,7Ni0,05	Sn99,25Cu,7Ni,05	227°C eutectic

**Ø in mm** 0.25 • 0.50 • 0.75 • 1.00 • 1.50 • 2.00 • 3.00

**Spools in kg** 0.10 • 0.25 • 0.50 • 1.00 • 5.00 • 10.00

Other alloys, diameters and coil sizes on request.



## Solder wire ISO-Core®

### “Ultra-Clear“ • “Clear“ • “RA-Clear“

High-quality lead-free solder wires for hand and automatic soldering in electrical engineering, electromechanics and electronics. The flux is characterised by high temperature resistance and **does not splash** during melting. An **Optimum wetting** and propagation values exceeding the standard make these lead-free solder wires top products among tube solders.

The new flux formulations „Ultra-Clear“, „Clear“, „RA-Clear“ are based on synthetic resins (free from rosin) and have been perfectly adapted to the new requirements of lead-free soldering technology:

- **High wetting speed and spreading** on all surfaces common in electronics
- **No (painful) flux splashes** on the assembly, the system parts or the hands
- **Crystal clear flux residues** to optimize the optical impression
- **Lowest outgassing and neutral odour** reduces workplace pollution
- **Easily removable smallest residues on soldering tips** - these can be removed by conventional means (FELDER Tinner, soldering sponge, metal wool)
- **100MΩ test passed** - can also be used in assembly production
- **The service life of the soldering iron tips is noticeably extended**

## 100% inline monitoring • 100% steady quality

The installation of the new monitoring unit results in outstanding advantages for product quality:

- Identification of flux dropouts and flux variations
- Optimization of production by continuous inline measurements
- Identification of air inclusions and other wire anomalies
- Continuous monitoring of the wire diameter in 2 axes
- Measuring accuracy is by factor 10 higher than the tolerance of the DIN / IPC specifications
- Identification of alloy deviations
- In case of deviations from the standard measured variable, the faulty wire is sorted out

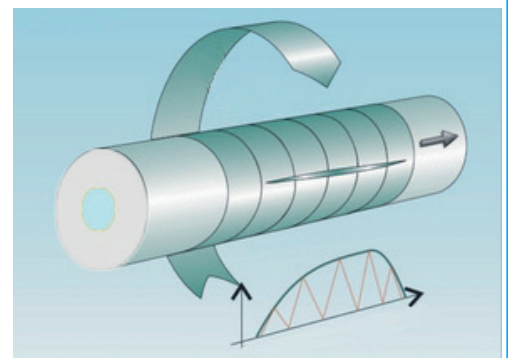
Thus the FELDER-ISO-Core® solder wire always ready for use:

- Hand and repair soldering
- Automated soldering (robot soldering)

### Conclusion:

**We guarantee product quality without flux exposure**

- **100% flux-filled**



## Solder wire ISO-Core® “Kolo”

### Flux-filled, halogen activated soft solder wire

Flux according to DIN EN ISO 9454.1, 1111

Or DIN EN 61190-1-1, ROLO

Standard flux content 3.5%

For soldering in electronics and telecommunications

**Ø in mm** 1.00 • 1.50 • 2.00 • 3.00 • 4.00

**Spools** 0.10 • 0.25 • 0.50 • 1.00 • 5.00 • 10.00 • 15.00 kg



Alloy	DIN EN ISO 9453	DIN EN 61190	Melting range
Pb60Sn40	Pb60Sn40	Sn40Pb60	183 - 235 °C
Sn60Pb40	Sn60Pb40	Sn60Pb40	183 - 190 °C

Other alloys, dimensions and delivery forms are available on customer request.

## Solder wire ISO-Core® “SP”

### Flux-filled soft solder wire according to DIN EN ISO 9453

Flux according to DIN EN ISO 9454.1, 2134, standard 2.5 %.

For general soldering work on copper and copper alloys.

**Ø in mm** 1.00 • 1.50 • 2.00 • 3.00 • 4.00

**Spools** 0.10 • 0.25 • 0.50 • 1.00 • 5.00 • 10.00 • 15.00 kg



Alloy	DIN EN ISO 9453	DIN EN 61190	Melting range
Pb70Sn30	Pb70Sn30	Sn30Pb70	183 - 255 °C
Pb60Sn40	Pb60Sn40	Sn40Pb60	183 - 235 °C
Sn60Pb40	Sn60Pb40	Sn60Pb40	183 - 190 °C
Sn97Cu3	Sn97Cu3	Sn97Cu3	227 - 310 °C

Other alloys, dimensions and delivery forms are available on customer request.

## Solder wire ISO-Core® “KD”

### Flux-filled soft solder wire according to DIN EN ISO 9453

Flux according to DIN EN ISO 9454.1, 3114, standard 2.5 %.

For general soldering work on copper and copper alloys.

**Ø in mm** 0.25 • 0.50 • 0.75 • 1.00 • 1.50 • 2.00 • 3.00 • 4.00

**Spools** 0.10 • 0.25 • 0.50 • 1.00 • 5.00 • 10.00 • 15.00 kg



Alloy	DIN EN ISO 9453	DIN EN 61190	Melting range
Pb50Sn50	Pb50Sn50	Pb50Sn50	185 - 216 °C
Sn60Pb40	Sn60Pb40	Sn60Pb40	183 - 190 °C
Sn99,3Cu0,7	Sn99Cu1	Sn99Cu1	227 °C

Other alloys, dimensions and delivery forms are available on customer request.



## Solder wire ISO-Core® "AL"

**Flux-filled soft solder wire for soldering aluminium and aluminium alloys according to DIN EN ISO 9454.1, 2124**

Flux content: 4 % Standard

Diameter: 1.5 mm and 2.0 mm

Coil sizes: 0.10 - 0.25 - 0.50 - 1.00 kg



Alloy	DIN EN ISO 9453	Melting range
Sn97Cu3	Sn97Cu3	227 - 310 °C

Other alloys and delivery forms are available on request.

## Solder wire ISO-Core® "VA"

**Flux-filled soft solder wire for soldering steel and Stainless steel according to DIN EN ISO 9454.1, 3214**

Flux content: 4 % Standard

Diameter: 1.0 mm • 1.5 mm • 2.0 mm

Spool sizes: 0.10 • 0.25 • 0.50 • 1.00 kg



Alloy	DIN EN ISO 9453	Melting range	
Sn96,5Ag3,5	Sn96,5Ag3,5	221 °C	lead-free
Sn60Pb40	Sn60Pb40	183 - 190 °C	lead-containing

Other alloys and delivery forms are available on request.

## Rosin - plumbing plumb bob

**Flux-filled soft solder wire for soldering copper and lead (lead sheathed cable)**

According to DIN EN ISO 9454.1, 1111.

5.0 mm Ø, in rings of 1.00 kg and 5.00 kg



Alloy	DIN EN ISO 9453	Melting range
Pb70Sn30	Pb70Sn30	183 - 254 °C
Pb65Sn35	Pb65Sn35	183 - 245 °C
Pb60Sn40	Pb60Sn40	183 - 238 °C

## Stearin - plumbing plumb bob

**Flux-filled soft solder wire for soldering lead pipes and sheets**

According to DIN EN ISO 9454.1, 2231

5.0 mm Ø, in rings of 1.00 kg

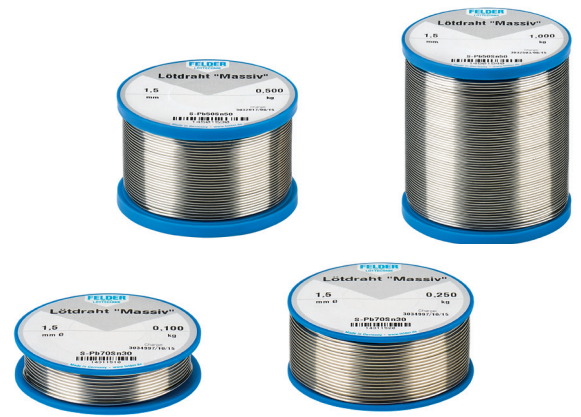


Alloy	DIN EN ISO 9453	Melting range
Pb70Sn30	Pb70Sn30	183 - 254 °C
Pb65Sn35	Pb65Sn35	183 - 245 °C
Pb60Sn40	Pb60Sn40	183 - 238 °C

## Solder wire “Massiv“

(without flux)

<b>Ø in mm</b>	0.25 • 0.50 • 0.75 • 1.00 • 1.50 • 2.00 • 3.00 • 4.00
<b>Spools</b>	0.10 • 0.25 • 0.50 • 1.00 • 5.00 • 10.00 • 15.00 kg
<b>Rings</b>	1.00 • 5.00 kg



Alloy	DIN EN ISO 9453	DIN EN 61190	Melting range
Sn99,3Cu07	Sn99,3Cu0,7	Sn99Cu.7	227 °C eutectic
Sn100Ni+	Sn99,25Cu0,7Ni0,05	Fuji Patent	227 °C eutectic
Sn97Cu3	Sn97Cu3	-	227 - 310 °C
Sn97Ag3	Sn97Ag3	-	221-224 °C
Sn95,5Ag3,8Cu0,7	Sn95Ag4Cu1	Sn96Ag04Cu0,7	217 °C eutectic
Sn99,9 (pure tin)	-	Sn99	232 °C
Sn60Pb40	Sn60Pb40	Sn60Pb40	183 - 190 °C
Sn50Pb50	Pb50Sn50	Sn50Pb50	183 - 215 °C
Pb60Sn40	Pb60Sn40	Sn40Pb60	183 - 238 °C

### Lead Wire

Pb99,9 (lead)	-	-	327 °C
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## FELDER - special soft solders

The following table lists some of the most important fusible alloys. Of course we also manufacture the appropriate fusible alloy for your special application / melting point. Standard delivery form: Triangular rods, depending on the alloy also available as wire.

Solidus °C	Liquidus °C	Specific weight g/m <sup>3</sup>	Hardness - HB	Tensile strength N/mm <sup>2</sup>	elec. Con. m / Ω x mm <sup>2</sup>
47	47	9.40	-	-	-
69	71	9.50	10	44.1	2.3
70	70	9.60	10	44.1	2.3
72	72	8.00	-	-	-
92	92	10.40	6	38.3	1.5
95	95	9.70	9	38.8	1.5
138	138	8.10	19	57.9	4.0
145	145	8.50	14	38.8	7.6
158	158	7.50	22	64.7	8.9
221	221	7.30	15	45.1	7.5
292	292	11.10	-	-	-
299	304	11.20	-	-	-
303	303	11.30	-	-	-
304	304	11.10	10	31.4	4,7
304	304	11.00	10	28.5	4,7
309	309	11.30	-	-	-

Other fusible alloys are available on request.

## Fitting solder Cu-Rotin®3

**For soft soldering of copper pipes in the drinking water and heating installation (up to 110 °C)**

Preferably in connection with our fitting soldering paste **Cu-Rofix®3-Spezial**  
According to DVGW worksheet GW 2 awarded with the RAL quality mark of the Quality Association for Copper Tubes.



Article no.	Delivery form	PU	Diameter	Alloy	Melting range
14972010	0.100 kg spool	100 pc	2.00 mm	Sn97Cu3	227 - 310 °C
149720201	0.250 kg spool	50 pc	2.00 mm	Sn97Cu3	227 - 310 °C
14972710	0.100 kg spool	100 pc	2.70 mm	Sn97Cu3	227 - 310 °C
149727201	0.250 kg spool	50 pc	2.70 mm	Sn97Cu3	227 - 310 °C
14973020	0.250 kg spool	50 pc	3.00 mm	Sn97Cu3	227 - 310 °C

Other dimensions and delivery forms are available on customer request.

## Fitting solder Cu-Rotin®4

**For soft soldering of copper pipes in the drinking water and heating installation (up to 110 °C)**

Preferably in connection with our fitting soldering paste **Cu-Rofix®4-Spezial**  
According to DVGW worksheet GW 2 awarded with the RAL quality mark of the Quality Association for Copper Tubes.

Also for soldering steel and stainless steel in connection with our soldering oil „ST“ or soldering fluid „VA-NOX“ suitable!



Article no.	Delivery form	PU	Diameter	Alloy	Melting range
14952010	0.100 kg Spule	100 pc	2.00 mm	Sn97Ag3	221 - 224 °C
14952020	0.250 kg Spule	50 pc	2.00 mm	Sn97Ag3	221 - 224 °C
14953010	0.100 kg Spule	100 pc	3.00 mm	Sn97Ag3	221 - 224 °C
14953020	0.250 kg Spule	50 pc	3.00 mm	Sn97Ag3	221 - 224 °C

Other dimensions and delivery forms are available on customer request.



## Fitting solder paste Cu-Rofix®3-Spezial

for soft soldering of copper pipes in the drinking water and heating installation

DIN EN ISO 9453, Sn97Cu3, DIN EN ISO 9454.1, 3214 (F-SW 21) according to DVGW worksheet GW7, awarded with the RAL quality mark of the Gütegemeinschaft Kupferrohr e.V.

Metal content at least 60 %. The flux residues are soluble in cold water and easily removed by rinsing. DVGW test mark: DV-0101 AT 2247



Article no.	Delivery form	PU	Alloy	Melting range
229760501	0.100 kg	100 pc	Sn97Cu3	227 - 310 °C
229760551	0.250 kg tin with brush holder	50 pc	Sn97Cu3	227 - 310 °C

## Fitting solder paste Cu-Rofix®3

For soft soldering of copper pipes in the drinking water and heating installation

DIN EN ISO 9453, Sn97Cu3, DIN EN ISO 9454.1, 3214 (F-SW 21) according to DVGW worksheet GW7, awarded with the RAL quality mark of the Gütegemeinschaft Kupferrohr e.V.

Metal content at least 60 %. The flux residues are soluble in cold water and easily removed by rinsing. DVGW test mark: DV-0101 AT 2244



Article no.	Delivery form	PU	Alloy	Melting range
229760559	0.250 kg tin	50 pc	Sn97Cu3	227 - 310 °C

## Fitting solder paste Cu-Rofix® 4-Spezial /Cu-Rofix® 4

**For soft soldering of copper pipes in the drinking water and heating installation**

DIN EN ISO 9453, Sn97Ag3, DIN EN ISO 9454.1, 3214 (F-SW 21) according to DVGW worksheet GW7, awarded with the RAL quality mark of the Gütegemeinschaft Kupferrohr e.V.

Metal content at least 60 %. The flux residues are soluble in cold water and easily removed by rinsing. DVGW test mark: DV-0101 BR 5781



### Cu-Rofix® 4-Spezial

Article no.	Delivery form	PU	Alloy	Melting range
229560501	0.100 kg tin	100 pc	Sn97Ag3	221 - 240 °C
229560551	0.250 kg tin with brush holder	50 pc	Sn97Ag3	221 - 240 °C

### Cu-Rofix® 4

Article no.	Delivery form	PU	Alloy	Melting range
22956055	0.250 kg tin	50 pc	Sn97Ag3	221 - 240 °C

## Soft Solder Flux Cu-Roplus®

**For soft soldering of copper pipes in the drinking water and heating installation**

Pasty flux according to DIN EN ISO 9454.1, 3214 (F-SW 21) according to DVGW worksheet GW7, awarded with the RAL quality mark of the Gütegemeinschaft Kupferrohr e.V.

The flux residues are soluble in cold water and can be easily removed by flush.

DVGW test mark: DV 0101 AT 2243



Article no.	Delivery form	PU
24310199	70 g tin	50 pc

## Soft Solder Flux Cu-Roflux®39

For soft soldering of copper pipes in the drinking water and heating installation

Liquid flux according to DIN EN ISO 9454.1, 3214 (F-SW 21) according to DVGW worksheet GW7, awarded with the RAL quality mark of the Gütegemeinschaft Kupferrohr e.V. The flux residues are soluble in cold water and can be easily removed by flush.

DVGW test mark: DV-0101 AT 2246



Article no.	PU	Delivery form	Content
24300150	50 pc	Bottle with brush insert	0.100 kg
24300155	45 pc	Bottle with brush insert	0.250 kg
24300160	30 pc	Bottle	0.500 kg
24300170	15 pc	Bottle	1 kg
24300185	1 pc	Canister	30 kg
24300122	12 pc	Simple-fix	25 ml

## Soft Solder Flux Cu-Roclean

pH-neutral - soft to the skin - environmentally friendly for soft soldering of copper pipes in the drinking water and heating installation

Zinc chloride-free flux according to DIN EN ISO 9454.1, 2124 (F-SW 25) according to DVGW worksheet GW7, awarded with the RAL quality mark of the Gütegemeinschaft Kupferrohr e.V.

The flux residues are soluble in cold water and can be easily removed by flush.



Article no.	PU	Delivery form	Content
24350152	50 pc	tin	0.125 kg



## Soft solder and tinning paste

### e.g. for the tinning of car body sheets

Alloys according to DIN EN ISO 9453,  
flux according to DIN EN ISO 9454.1, 3214 (F-SW 21),  
metal content 60 - 70% - ready-to-use metal paste

PU	Delivery form	Content
50 pc	Bottle	0.100 kg
25 pc	Bottle	0.250 kg
25 pc	Bottle	0.500 kg
15 pc	Bottle	1 kg
10 pc	Tin can with brush insert	1 kg

Alloy	Melting range	Remarks
Pb74Sn25Sb1	186 - 260 °C	only available in the 1.000 kg bottle
Pb60Sn40	183 - 215 °C	
Sn60Pb40	183 - 190 °C	
Sn97Cu3	227 - 310 °C	„lead free“ - RoHS compliant
Sn99,9%	232 °C	„lead free“ - RoHS compliant

## Tinning paste for stainless steel

### e.g. for the tinning of stainless steel sheets

Alloys according to DIN EN ISO 9453,  
flux according to DIN EN ISO 9454.1, 3114 (F-SW 21),  
metal content 60 - 70% - ready-to-use metal paste  
Alloy Sn97Ag3



## Solar - soft solder paste FK 115

The outgassing of the flux residues was reduced to a minimum.  
The solder paste is 100% halogen-free, so that the coating of the copper sheet  
can not be damaged by halogens. We deliver our solder pastes  
with different flux proportions and can thus increase the viscosity of the  
production process of our customers in an optimal way. Flux according to  
DIN EN ISO 9454.1, 1131 - Metal content 70-85 %.

Certified by the Institute for Solar Technology in Rapperswil



Product designation	Alloy	Melting range	Delivery form
Solar soft solder paste FK 115	Sn97Cu3	227-310 °C	Cartridges of 1 kg Tin bucket of 12.5 kg / 25 kg

## Aluminium - soft solder paste

### For soft soldering of aluminium to aluminium and aluminium to copper

### Preferably used in refrigeration and air conditioning applications.

The flux residues are corrosive. They can be easily removed by rinsing with water.



Product designation	Alloy	Melting range	Delivery form
Aluminium soft solder paste	Sn97Cu3	227-310 °C	Bottles of 0.100 kg and 0.250 kg Cartridges of 0.900 kg Tin bucket of 12.5 kg / 25 kg

## Soldering fluid

Flux for general soldering work on all metallic surfaces with the exception of aluminium and stainless steel

DIN EN ISO 9454.1, 3214 (F-SW 12)



Article no.	Delivery form	PU	Remarks
24220036	Bottle	100 pc	50 ml bottle with brush insert
24220051	Bottle	50 pc	100 ml bottle
24220056	Bottle	20 pc	250 ml bottle
24220061	Bottle	30 pc	500 ml bottle
24220071	Bottle	15 pc	1000 ml bottle
24220086	Canister	1 pc	25 l canister

## Soldering grease

Flux for general soft soldering work on copper and copper alloys

DIN EN ISO 9454.1, 3214 (F-SW 12)



Article no.	Delivery form	PU	Remarks
24310010	Can	200 pc	20 g can
243100351	Can	50 pc	50 g can
243100501	Can	50 pc	100 g can
243100551	Can	20 pc	250 g can
24310060	Bottle	15 pc	0.500 kg bottle
24310070	Bottle	15 pc	1 kg bottle
24310075	Bucket	1 pc	5 kg bucket

## Soldering gel "Allround"

Flux for soft soldering of all bright rolled metals in the roofing trade

DIN EN ISO 9454.1, 3214



Article no.	Delivery form	PU	Remarks
24120045	Simple-fix	12 pc	75 g Simple-fix
24120060	Bottle	45 pc	0.500 kg bottle with brush insert

## Soldering fluid "ZD"

Flux for soft soldering of new and oxidized titanium zinc, galvanized sheet steel and fine zinc

DIN EN ISO 9454.1, 3214 (F-SW 11)



Article no.	Delivery form	PU	Remarks
24110050	Bottle	50 pc	0.100 kg bottle with brush insert
24110055	Bottle	45 pc	0.250 kg bottle with brush insert
24110060	Bottle	30 pc	0.500 kg bottle
24110070	Bottle	15 pc	1 kg bottle
24110085	Canister	1 pc	25 kg canister
24110022	Simple-fix	12 pc	25 ml Simple-fix

## Soldering fluid "ZD - Spezial"

Flux for soft soldering of strongly oxidized zinc sheet, galvanized sheet steel and fine zinc

DIN EN ISO 9454.1, 3214



Article no.	Delivery form	PU	Remarks
24110270	Bottle	15 pc	1 kg bottle
24110222	Simple-fix	12 pc	25 ml Simple-fix

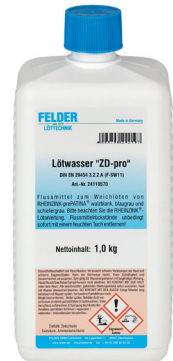


## Soldering fluid “ZD - pro“

Flux for soft soldering of RHEINZINK® „walzblank“, RHEINZINK® „vorbewittert - pro“ blue-grey and slate grey and NedZink „Nova“

DIN EN ISO 9454.1, 3214 (F-SW 11)

Article no.	Delivery form	PU	Remarks
24110550	Bottle	50 pc	0.100 kg bottle with brush insert
24110570	Bottle	15 pc	1 kg bottle
24110522	Simple-fix	12 pc	25 ml Simple-fix



## Soldering fluid „ZD-pro GRANUM-SKYGREY“

New development for soldering RHEINZINK® GRANUM-SKYGREY of course also ideally suited for „walzblank“, „vorbewittert - pro“ and NedZink „Nova“

DIN EN ISO 9454.1, 3214 (F-SW 11)

Article no.	Delivery form	PU	Remarks
24110850	Bottle	50 pc	0.100 kg bottle with brush insert
24110870	Bottle	15 pc	1 kg bottle

## Solvent “pro“

For the pretreatment of RHEINZINK® „vorbewittert-pro“ and „schiefergrau“

Article no.	Delivery form	PU	Remarks
24890070	Bottle	15 pc	1 kg bottle
24890022	Simple-fix	12 pc	25 ml Simple-fix



## Soldering fluid - solvent - set “pro“

Consisting of:

Soldering fluid “ZD - pro“, 25 ml Simple-fix

Solvent “pro“, 25 ml Simple-fix

Article no.	Delivery form	PU	Remarks
363624110522	Simple-fix	30 pc	2 x 25 ml Simple-fix in a set

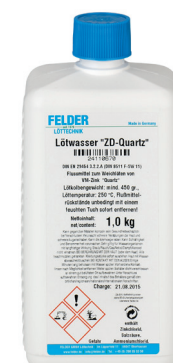


## Soldering fluid “ZD - Quartz“

Flux for soft soldering of VM-ZINC®, QUARTZ-ZINC® und ANTHRA-ZINC®

DIN EN ISO 9454.1, 3214 (F-SW 11)

Article no.	Delivery form	PU	Remarks
24110670	Bottle	15 pc	1 kg Flasche
24110622	Simple-fix	12 pc	25 ml Simple-fix



## Soldering oil "ST"

### Flux for soft soldering of steel and stainless steel

DIN EN ISO 9454.1, 3214 (F-SW11)

For soft soldering of stainless steel we also recommend our flux-filled solder wire ISO-Core® "VA".

Article no.	Delivery form	PU	Remarks
24100051	Bottle	50 pc	100 ml bottle
24100056	Bottle	25 pc	250 ml bottle
24100061	Bottle	20 pc	500 ml bottle
24100022	Simple-fix	12 pc	25 ml Simple-fix



## Soldering oil "ST-Spezial"

### Highly activated flux for soft soldering stainless steels

DIN EN ISO 9454.1, 3214 (F-SW11)

Successfully tested on the following materials: 1.4301, 1.4305, 1.4307, 1.4316, 1.4318, 1.4401, 1.4404, 1.4841, ASTM F562 (MP35N).

Article no.	Delivery form	PU	Remarks
24100236	Bottle	100 pc	25 ml bottle
24100251	Bottle	50 pc	100 ml bottle

## Soldering fluid "VA-NOX"

### Flux for soft soldering of stainless steel roofing sheets

DIN EN ISO 9454.1, 3311 (F-SW 11) - free of zinc chloride

Recommended by the information centre „Edelstahl Rostfrei“

Article no.	Delivery form	PU	Remarks
24010070	Bottle	15 pc	1000 ml bottle
24010022	Simple-fix	12 pc	25 ml Simple-fix



## Soldering fluid "KD"

### Flux for soft soldering of copper gutters and down pipes

DIN EN ISO 9454.1, 3214 (F-SW 21)

Article no.	Delivery form	PU	Remarks
24300050	Bottle	50 pc	0.100 kg bottle
24300055	Bottle	45 pc	0.250 kg bottle with brush insert
24300060	Bottle	30 pc	0.500 kg bottle
24300070	Bottle	15 pc	1 kg bottle
24300022	Simple-fix	12 pc	25 ml Simple-fix



## Solder pin „SP“

Flux for soft soldering of copper, copper alloys, zinc, galvanized sheet steel and iron

DIN EN ISO 9454.1, 3214 (F-SW21)

Soft solder flux coated with a soldering tin foil. Especially suitable for electrical installation, especially cable soldering.



Article no.	PU	Delivery form	Dimensions
24320035	12 pc	Pin	Approx. 50 g

## Stearin - Rods

Flux for soft soldering of lead pipes and sheets

DIN EN ISO 9454.1, 2211 (F-SW 23)



Article no.	PU	Delivery form	Dimensions
24400135	1 pc	Rod	Rod, 20 x 140 mm

## Aluminium soft solder flux

Flux for soft soldering of aluminium and Aluminium alloys

DIN EN ISO 9454.1, 2124 (F-LW 2)



Article no.	PU	Content	Delivery form	Effective temperature
24510050	100 pc	0.100 kg	Bottle	200 - 300 °C
24510055	45 pc	0.250 kg	Bottle	200 - 300 °C
24510060	30 pc	0.500 kg	Bottle	200 - 300 °C
24510070	15 pc	1 kg	Bottle	200 - 300 °C

## Aluminium universal flux „ZnAl“

Flux for soldering aluminium and Aluminium alloys or aluminium with copper

Magnesium content < 1,2%

DIN EN ISO 9454.1, 3124 (F-LW 2)



Article no.	PU	Content	Delivery form	Effective temperature
24520050	100 pc	0.100 kg	Bottle	430 - 900 °C
24520055	45 pc	0.250 kg	Bottle	430 - 900 °C



## Flux for copper and silver brazing **Cu-Rosil®**

**Brazing flux for brazing of copper pipes in drinking water, heating, gas and oil installations in connection with brass and gunmetal fittings**  
Paste, DIN EN 1045 - FH 10, effective temperature: 500-800 °C  
DVGW test mark: DV 0101 AT 2245



Article no.	PU	Delivery form
26100050	50 pc	0.100 kg can
26100055	50 pc	0.250 kg can
26100060	25 pc	0.500 kg can
26100070	15 pc	1 kg can

## Flux for silver solders "CuFe Nr. 1"

**Brazing paste for brazing of copper, copper alloys, steel and stainless steel**  
Paste, DIN EN 1045 - FH 10, effective temperature: 500-800 °C

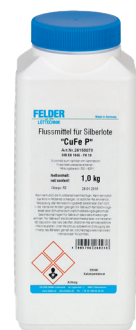
Article no.	PU	Delivery form
261000501	50 pc	0.100 kg can
261000551	50 pc	0.250 kg can
261000601	25 pc	0.500 kg can
261000701	15 pc	1 kg can



## Flux for silver solders "CuFe P"

**Brazing powder for brazing of copper, copper alloys, steel and stainless steel**  
Powder, DIN EN 1045 - FH 10, effective temperature: 500-800 °C

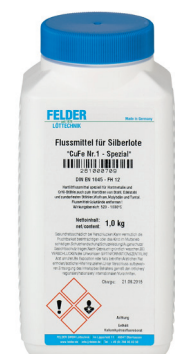
Article no.	PU	Delivery form
26150050	50 pc	0.100 kg can
26150055	50 pc	0.250 kg can
26150060	25 pc	0.500 kg can
26150070	15 pc	1 kg can



## Flux for silver solders "CuFe Nr. 1 Spezial"

**Brazing paste for brazing of hard metals, stainless and scale-resistant steels**  
Paste, DIN EN 1045 - FH 12, effective temperature: 500-800 °C

Article no.	PU	Delivery form
261000509	50 pc	0.100 kg can
261000559	50 pc	0.250 kg can
261000609	25 pc	0.500 kg can
261000709	15 pc	1 kg can



## Brazing powder “UNIVERSAL“

For brazing of copper, copper alloys and steel and for welding brass

DIN EN 1045 - FH 21, effective temperature: 800-1100 °C

To be used in conjunction with brazing alloys with working temperatures above 800 °C.

Article no.	PU	Delivery form
26200050	50 pc	0.100 kg can
26200055	25 pc	0.250 kg can
26200060	30 pc	0.500 kg can
26200070	15 pc	1 kg can



## Brazing paste “UNIVERSAL“

For brazing of copper, copper alloys and steel and for welding brass

DIN EN 1045 - FH 21, effective temperature: 800-1100 °C

To be used in conjunction with brazing alloys with working temperatures above 800 °C.

Article no.	PU	Delivery form
26250050	50 pc	0.100 kg can
26250055	25 pc	0.250 kg can
26250060	30 pc	0.500 kg can
26250070	15 pc	1 kg can



## Brazing paste “DIY“

For brazing of copper, copper alloys and steel and for welding brass

DIN EN 1045 - FH 21, effective temperature: 800-1100 °C

To be used in conjunction with brazing alloys with working temperatures above 800 °C. Freely available for the DIY sector.

Article no.	PU	Delivery form
26270050	50 pc	0.100 kg can
26270055	25 pc	0.250 kg can
26270060	30 pc	0.500 kg can
26270070	15 pc	1 kg can



## Aluminium brazing powder “Nr.1“

Flux for brazing and welding of aluminium and aluminium alloys, based on hygroscopic fluorides

DIN EN 1045 - FL 10, effective temperature: 480-750 °C

Article no.	PU	Delivery form
26400050	50 pc	0.100 kg can
26400055	25 pc	0.250 kg can
26400060	30 pc	0.500 kg can
26400070	15 pc	1 kg can



## Aluminium welding powder

Flux for autogenous welding of pure aluminium

Effective temperature: 500-750 °C

Article no.	PU	Delivery form
26420050	50 pc	0.100 kg can
26420055	30 pc	0.250 kg can
26420060	30 pc	0.500 kg can
26420070	15 pc	1 kg can



## Spreading hardening powder for steel

Nitrogen hardening powder for hardening iron and unalloyed steels

Effective temperature: from 800 °C

Article no.	PU	Delivery form
26510060	30 pc	0.500 kg can
26510070	15 pc	1 kg can



## Pickling agent 148

for removing brazing flux residues

Article no.	PU	Delivery form
26600070	1 pc	1 l bottle
26600076	1 pc	5 l canister



## Copper brazing alloy Cu-Rophos® 94

For flux-free soldering of copper-copper joints in oil, gas and liquefied gas installations as well as in heating and drinking water installation over 28 x 1.5 mm pipe dimensions  
DIN EN ISO 17672, CuP 179; (L-CuP6, DIN 8513) according to DVGW worksheet GW2



Article no.	Dimensions	PU	Delivery form
330115501	1.50 mm square x 500 mm	25 kg	1 kg box
330120501	2.00 mm square x 500 mm	25 kg	1 kg box
330130501	3.00 mm square x 500 mm	25 kg	1 kg box

## Copper brazing alloy Cu-Rophos® 2

For flux-free soldering of copper-copper joints in oil, gas and liquefied gas installations as well as in heating and drinking water installation over 28 x 1.5 mm pipe dimensions  
DIN EN ISO 17672, CuP 279; (L-Ag2P, DIN 8513) according to DVGW worksheet GW2



Article no.	Dimensions	PU	Delivery form
333115501	1.50 mm square x 500 mm	25 kg	1 kg box
333120501	2.00 mm square x 500 mm	25 kg	1 kg box
333130501	3.00 mm square x 500 mm	25 kg	1 kg box

## Copper brazing alloy Cu-Rophos® 5

for brazing of copper tubes in the refrigeration and air conditioning industry  
DIN EN ISO 17672, CuP 281; (L-Ag5P, DIN 8513)  
according to DVGW worksheet GW2



Article no.	Dimensions	PU	Delivery form
33331550	1.50 mm square x 500 mm	25 kg	1 kg box
33332050	2.00 mm square x 500 mm	25 kg	1 kg box
33333050	3.00 mm square x 500 mm	25 kg	1 kg box

## Kupferhartlot Cu-Rophos® 15

for brazing of copper tubes in the refrigeration and air conditioning industry  
DIN EN ISO 17672, CuP 284; (L-Ag15P, DIN 8513)  
according to DVGW worksheet GW2



Article no.	Dimensions	PU	Delivery form
33401550	1.50 mm square x 500 mm	25 kg	1 kg box
33402050	2.00 mm square x 500 mm	25 kg	1 kg box
33403050	3.00 mm square x 500 mm	25 kg	1 kg box

When soldering with our Cu-Rophos copper brazing alloys on brass or gunmetal, our flux Cu-Rosil® must also be used.





Article description	DIN EN ISO 17672	Composition (Weight-%)			Work temperature	Tensile strength of the soldering (N/mm <sup>2</sup> )	Density (g/cm <sup>3</sup> )	Operating range in °C	For brazing of the following basic materials
		Ag	Cu	P					
Cu-Rophos <sup>®</sup> 94 (CP 203)	CuP179	-	94	6	760 °C	250	8.1	-50 to +150	Copper to copper (without flux)
Cu-Rophos <sup>®</sup> 93 (CP 202)	CuP181	-	93	7	730 °C	250	8.1		Brass, red brass and copper-tin-alloys with flux for silver solders Cu-Rosil <sup>®</sup>
Cu-Rophos <sup>®</sup> 0 (AWS-BCuP-2)		-	92.7	7.3	730 °C	250	8.1		
Cu-Rophos <sup>®</sup> 92 (CP 201)	CuP182	-	92	8	720 °C	250	8.0		
Cu-Rophos <sup>®</sup> 2 (CP 105)	CuP279	2	91.5	6.5	740 °C	250	8.1	-50 to +150	Not to be used for sulfurous Media
Cu-Rophos <sup>®</sup> 5 (CP 104)	CuP281	5	89	6	710 °C	250	8.2	-50 to +150	Heat-resistant up to 200 °C
Cu-Rophos <sup>®</sup> DYN (flow properties similar to CP102)		6	87.9	6.1	700 °C	250	8.8	-60 to +150 °C	
Cu-Rophos <sup>®</sup> 15 (CP 102)	CuP284	15	80	5	700 °C	250	8.4	-70 to +150	
Cu-Rophos <sup>®</sup> 18 (CP 101)	CuP286	18	75	7	650 °C	250	8.4		

### Delivery form

500 mm Stäbe, 1 kg Produktionsringe, Draht auf Spulen, Bänder ab 0,05 mm Dicke, max. Breite 70 mm, Formteile aus Draht, als Ringe oder Profile, Formteile aus Band, als Platten oder Scheiben.

## Cu-Rophos<sup>®</sup> - NanoTech

We also offer the copper brazing alloys Cu-Rophos<sup>®</sup> 94 - 2 - 5 - 15 in „NanoTech“ quality. Through a special production process, the phosphorus content in the solder is distributed in a controlled manner in to defined micro-small particles. This gives the brazing alloy the special advantages of NanoTech alloys.

- Excellent wetting
- Splash-free discharge
- Poreless solder joints





### Delivery form

500 mm rods, 1 kg of fabrication rings,  
wire on spools, soldered parts

flux-coated according to DIN EN 1045 - FH10  
from 1.5 mm diameter

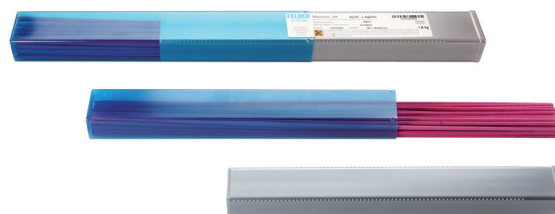
### Dimensions

1.0 mm

1.5 mm

2.0 mm

3.0 mm



Article- description	DIN EN ISO 17672	Composition (Weight-%)					Work temperature	Tensile strength of the soldering (N/mm <sup>2</sup> )	Density (g/cm <sup>3</sup> )	For brazing the fol- lowing basic materials
		Ag	Cu	Zn	Ni	Rest				
AG 207 (L-Ag12)	Ag 212	12	48	40	-	-	830	400	8.5	Steel, copper, copper alloys, nickel, nickel alloys, malleable iron
AG 206 (L-Ag20)	BCu44ZnAg(Si) ISO 3677	20	45	35	-	-	810	400	8.7	
AG 205 (L-Ag25)	Ag 225	25	40	35	-	-	780	400	8.8	
AG 203 (L-Ag44)	Ag 244	44	30	26	-	-	730	450	9.1	Heat resistant up to 300 °C
AG 107 (L-Ag30Sn)	Ag 130	30	36	32	-	2 Sn	740	430	8.8	
AG 106 (L-Ag34Sn)	Ag 134	34	36	27.5	-	2.5 Sn	710	430	9.0	Heat resistant up to 200 °C
AG 105 (L-Ag40Sn)	Ag 140	40	30	28	-	2 Sn	690	400	9.1	
AG 104 (L-Ag45Sn)	Ag 145	45	27	25.5	-	2.5 Sn	670	400	9.2	
AG 102 (L-Ag55Sn)	Ag 156	56	22	17	-	5 Sn	650	400	9.4	Conditionally for stainless steel
Ag 502 (L-Ag49)	Ag 449	49	16	23	7.5	4.5 Mn	690	300	8.9	Carbide on steel, tungsten and molybdenum materials
Ag 401 (L-Ag72)	Ag 272	72	28	-	-	-	780	340	10.0	Steel, stainless steel, copper, nickel and nickel alloys
Ag 403 (L-Ag56InNi)	B-Ag56CuInNi ISO 3677	56	26	-	4	14 In	730	300	9.5	

## FELDER - layered film solder AG 502 (L-Ag49Cu)

**Low-melting silver solder with intermediate copper layer for soldering hard metals on tool steel**

The copper layer serves to reduce the stresses occurring in the solder joint due to the very different coefficients of expansion of the materials carbide and steel.

**For these applications we recommend our flux for silver brazing alloys „CuFe No. 1 Spezial“.**

Article description and properties	Delivery form	Tape thickness
AG 502 (L-Ag49Cu)		0.2 mm
Working temperature: 690 °C	Tapes up to max. 70 mm width,	0.3 mm
Continuous operating temperature: 200 °C	shaped parts as plates or discs	0.4 mm
Tensile strength of the brazing: min. 340 N/mm <sup>2</sup>		

## Brass brazing solder

**For brazing of copper, nickel and steel  
and for welding brass and bronze**

ISO 3677, B-Cu60Zn(Si)(Mn);  
DIN EN ISO 17672, Cu 670 (formerly L-CuZn40, DIN 8513)  
Density: 8,4 g/m<sup>3</sup>



Article no.	Dimensions	Description	Operating temperature	PU
30001500	1.50 mm x 1000 mm	Rods, solid	Approx. 900 °C	25 kg
30002000	2.00 mm x 1000 mm	Rods, solid	Approx. 900 °C	25 kg
30002500	2.50 mm x 1000 mm	Rods, solid	Approx. 900 °C	25 kg
30003000	3.00 mm x 1000 mm	Rods, solid	Approx. 900 °C	25 kg
30004000	4.00 mm x 1000 mm	Rods, solid	Approx. 900 °C	25 kg
30005000	5.00 mm x 1000 mm	Rods, solid	Approx. 900 °C	25 kg
30006000	6.00 mm x 1000 mm	Rods, solid	Approx. 900 °C	25 kg

## Brass brazing solder "G"

**For brazing of copper, nickel and steel  
and for welding brass and bronze**

ISO 3677, B-Cu60Zn(Si)(Mn), DIN EN ISO 17672, Cu 670  
(formerly L-CuZn40, DIN 8513), working temperature approx. 900 °C  
flux-filled according to DIN EN 1045 - FH 21



Article no.	PU	Dimensions	Description
30022550	5 kg	2.50 x 2.50 x 500 mm	Rods, flux-filled

## Brass brazing solder "UM"

**For brazing of copper, nickel and steel  
and for welding brass and bronze**

ISO 3677, B-Cu60Zn(Si)(Mn), DIN EN ISO 17672, Cu 670  
(formerly L-CuZn40, DIN 8513), working temperature approx. 900 °C  
flux-coated according to DIN EN 1045 - FH 21



Article no.	PU	Dimensions	Description
30012050	5 kg	2.00 mm x 500 mm	Rods, flux-coated
30012550	5 kg	2.50 mm x 500 mm	Rods, flux-coated
30013050	5 kg	3.00 mm x 500 mm	Rods, flux-coated
30014050	5 kg	4.00 mm x 500 mm	Rods, flux-coated

## Special brass brazing alloy

**For brazing of copper, nickel and steel  
and for welding brass and bronze**

ISO 3677, B-Cu59ZnSn(Ni)(Mn)(Si) DIN EN ISO 17672, Cu 681  
(formerly L-CuZn39Sn, DIN 8513), working temperature approx. 900 °C  
Density: 8,4 g/m<sup>3</sup>

**-suitable for brazing of galvanized steel sheet-**



Article no.	PU	Dimensions	Description
30102050	25 kg	2.00 mm x 500 mm	Rods, solid
30103050	25 kg	3.00 mm x 500 mm	Rods, solid
30104050	25 kg	4.00 mm x 500 mm	Rods, solid



## Special brass brazing alloy “G“

**For brazing of copper, nickel and steel as well as for welding of brass and bronze**

ISO 3677, B-Cu59ZnSn(Ni)(Mn)(Si) DIN EN ISO 17672, Cu 681 formerly L-CuZn39Sn, DIN8513), working temperature approx. 900 °C flux-filled, DIN EN 1045 - FH 21

**-specially suitable for hard soldering of galvanized sheet steel-**

Article no.	PU	Dimensions	Description
30122550	5 kg	2.50 mm x 500 mm	Rods, drilled, flux-filled
30123550	5 kg	3.50 mm x 500 mm	Rods, drilled, flux-filled



## Special brass brazing alloy “UM“

**For brazing of copper, nickel and steel as well as for welding of brass and bronze**

ISO 3677, B-Cu59ZnSn(Ni)(Mn)(Si), DIN EN ISO 17672, Cu 681 (formerly L-CuZn39Sn, DIN8513), working temperature approx. 900 °C flux-coated, DIN EN 1045 - FH 21

**-specially suitable for hard soldering of galvanized sheet steel-**

Article no.	PU	Dimensions	Description
30112050	5 kg	2.00 mm x 500 mm	Rods, flux-coated
30112550	5 kg	2.50 mm x 500 mm	Rods, flux-coated
30113050	5 kg	3.00 mm x 500 mm	Rods, flux-coated



## Nickel silver brazing

**For brazing of steel, malleable cast iron, nickel, Nickel alloys and cast iron**

ISO 3677, B-Cu48ZnNi(Si), DIN EN ISO 17672, Cu 773 (formerly L-CuNi10Zn42, DIN 8513), working temperature approx. 900 °C, density: 8.7 g/m<sup>3</sup>.

Article no.	PU	Dimensions	Description
30202050	25 kg	2.00 mm x 500 mm	Rods, solid
30203050	25 kg	3.00 mm x 500 mm	Rods, solid
30204050	25 kg	4.00 mm x 500 mm	Rods, solid



## Nickel silver brazing “UM“

**For brazing of steel, malleable cast iron, nickel, Nickel alloys and cast iron**

ISO 3677, B-Cu48ZnNi(Si), DIN EN ISO 17672, Cu 773 (formerly L-CuNi10Zn42, DIN 8513), working temperature approx. 900 °C flux-coated, DIN EN 1045 - FH 21

Article no.	PU	Dimensions	Description
30212050	5 kg	2.00 mm x 500 mm	Rods, flux-coated
30212550	5 kg	2.50 mm x 500 mm	Rods, flux-coated
30213050	5 kg	3.00 mm x 500 mm	Rods, flux-coated
30214050	5 kg	4.00 mm x 500 mm	Rods, flux-coated



## Copper welding wire

### SG-CuAg

DIN 1733  
1000 mm rods, 25 kg cartons



Article no.	Diameter	DIN 1733	ISO 24373	Density / g/m <sup>3</sup>	Melting range	Application
31032000	2.00 mm	SG-CuAg	Cu1897	8.9	1.070 - 1.080 °C	Gas welding of copper tubes
31033000	3.00 mm					
31034000	4.00 mm					

## Bronze welding wire

### SG-CuSn6 • SG-CuSn12

DIN 1733  
1000 mm rods, 25.0 kg cartons

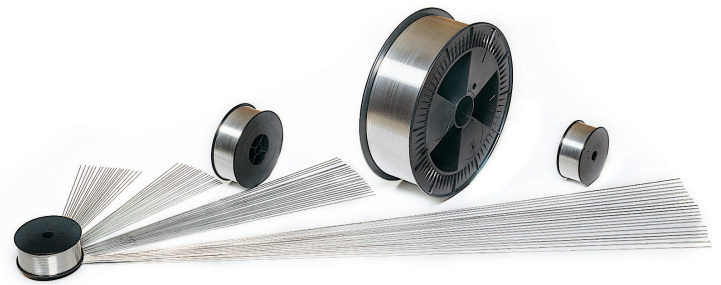


Article no.	Diameter	DIN 1733	ISO 24373	Density / g/m <sup>3</sup>	Melting range	Application
31042000	2.00 mm	SG-CuSn6	Cu5180A	8.7	910 - 1.040 °C	Welding of CuSn alloys, overlay welding
31043000	3.00 mm					
31052000	2.00 mm	SG-CuSn12	Cu5410	8.6	825 - 990 °C	Welding of CuSn alloys, particularly suitable for wear-resistant applications
31053000	3.00 mm					

## FELDER-Aluminium welding wires

for welding and brazing of aluminium and aluminium alloys

Delivery form	Diameter
1000 mm rods	1.5 mm
	2.0 mm
	3.0 mm
	4.0 mm
	5.0 mm
0.5 kg, 2.0 kg, 7.0 kg spools	0.8 mm
	1.0 mm
	1.2 mm
	1.6 mm
	2.4 mm



Alloy DIN 1732	Material No.	Operating temperature	For welding the following base materials	appropriate* recommended** Welding methods
S-Al99.5	3.0259	Approx. 650 - 660 °C	Al99 / Al99.5 E-Al99.5 E-AlMgSi	WIG* MIG* Gas Welding
S-Al99.8	3.0286	Approx. 660 °C	Al99.7 / Al99.8 E-Al99.5 E-AlMgSi	WIG** MIG** Gas Welding
S-Al99.5Ti	3.0805	Approx. 650 - 660 °C	Al99 / Al99.5 AlMn	WIG** MIG** Gas Welding**
S-AlMn	3.0516	Approx. 650 - 660 °C	AlMn / AlMgMn AlMg1 / AlMg2 AlMg5 / AlMg23	WIG** MIG* Gas Welding**
S-AlMg3	3.3536	Approx. 580 - 640 °C	AlMg1-3 AlMgMn / AlMgSi0.5 G-AlMg3(Cu)	WIG** MIG* Gas Welding**
S-AlMg5	3.3536	Approx. 560 - 630 °C	AlMg3 / AlMg5 AlMgMn / AlMg4.5Mn AlMg3Si / AlMgSi1 AlZnMg-alloys G-AlMg3(Cu) / G-AlMg5	WIG** MIG* Gas Welding*
S-AlMg4.5Mn	3.3548	Approx. 560 - 630 °C	AlMg4.5Mn AlMg3 / AlMg5 AlZnMg1 G-AlMg3 / G-AlMg5 AlMgSi0.5 / AlMgSi1	WIG** MIG* Gas Welding**
S-AlSi5	3.2245	Approx. 570 - 630 °C	AlZnMg-, AlCuMg- Legierungen AlSi-casting alloys with max. 7 % Si	WIG** MIG** Gas Welding**
S-AlSi12	3.2585	Approx. 570 - 585 °C	AlSi-casting alloys with more than 7 % Si	WIG** MIG* Gas Welding**

## Autogenous welding wire G I

For joint welding of pipes and sheets  
For normal requirements

DIN 8554, group G I



Article no.	Dimensions	Description	Tensile strength	PU
28101000	1.00 mm x 1000 mm	Rods	380 N/mm <sup>2</sup>	25 kg box
28101500	1.50 mm x 1000 mm			
28102000	2.00 mm x 1000 mm			
28102500	2,50 mm x 1000 mm			
28103000	3.00 mm x 1000 mm			
28104000	4.00 mm x 1000 mm			
28105000	5.00 mm x 1000 mm			
28106000	6.00 mm x 1000 mm			

## Autogenous welding wire G II

For joint welding of pipes and sheets  
For higher requirements

DIN 8554, group G II



Article no.	Dimensions	Description	Tensile strength	PU
28202000	2.00 mm x 1000 mm	Rods	420 N/mm <sup>2</sup>	25 kg box
28202500	2.50 mm x 1000 mm			
28203000	3.00 mm x 1000 mm			
28204000	4.00 mm x 1000 mm			

## Autogenous welding wire G III

For joint welding of pipes and sheets  
For high requirements

DIN 8554, group G III



Article no.	Dimensions	Description	Tensile strength	PU
28302000	2.00 mm x 1000 mm	Rods	440 N/mm <sup>2</sup>	25 kg box
28302500	2.50 mm x 1000 mm			
28303000	3.00 mm x 1000 mm			
28304000	4.00 mm x 1000 mm			



## Soldering fluid bottle - Acid bottle

For refilling, made of plastic



Article no.	Delivery form	PU	Description
27111000	Soldering fluid bottle (blue)	100 pc	Capacity 125 ml, base size 75 x 55 mm
27121000	Acid bottle (yellow)	100 pc	Capacity 125 ml, base size 75 x 55 mm

## Soldering fluid brush

With metal shaft and natural bristles  
or as plastic brush



Article no.	PU	Description
27130000	100 pc	Soldering fluid brush with metal shaft and natural bristles, approx. 10 mm wide
27130027	50 pc	Plastic brush, 120 mm long, trim length 15 mm

## Cleaning fleece Cu-Rovlies

Metal-free, for mechanical cleaning of the solder joint



Article no.	PU	Dimensions	Delivery form
27140000	250 pc	Approx. 130 mm x 60 mm	Packed of 10 pieces
27140025	250 pc	Approx. 130 mm x 60 mm	Loose in cardboard box
27141000	1 pc	Approx. 130 mm x 10 m	Roll goods

## Cassiterite

For cleaning and tinning of copper pieces in roofing area - free of salmiac - lead free

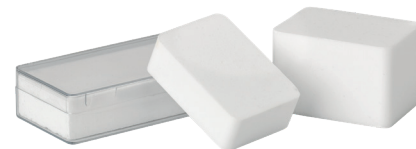
Article no.	Size	PU	Description
27100009	cassiterite	50 pc	100 g in tins



## Sal ammonia bricks

For cleaning soldering tips

Article no.	Size	PU	Description
27100001	Stone no. 1	300 pc	65 x 45 x 20 mm
27100002	Stone no. 2	150 pc	65 x 45 x 40 mm
27100004	Stone no. 4	100 pc	100 x 50 x 25 mm in plastic can
27100008	Stone no. 8	200 pc	100 g in tin can



## Tinner

For cleaning and tinning of soldering tips

For soldering tip cleaning in electronics

Article no.	Size	PU	Description
27100011	Tinner lead-free	1 pc	Tinner lead-free, 15 g tin



## Desoldering strands

Flux-impregnated copper strand for the desoldering of components and to remove excess solder on printed circuits

Article no.	Size	PU	Description
27161000	1.0 mm	100 pc	1.6 m folding coil
27161500	1.5 mm	100 pc	1.6 m folding coil
27162000	2.0 mm	100 pc	1.6 m folding coil
27162500	2.5 mm	100 pc	1.6 m folding coil
27163000	3.0 mm	100 pc	1.6 m folding coil
27162030	2.0 mm	1 pc	30 m spool
27162530	2.5 mm	1 pc	30 m spool



## White Vaseline

Protection means, especially suitable for electrical connections, such as e.g. battery poles, battery connection cables and car antennas, resin and acid free



Article no.	PU	Description
27180030	200 pc	40 g tin
27180097	100 pc	60 g tube

## Heat protection mat

- Flameproof
- Free of asbestos and ceramic fibres

Heat resistant up to 700 °C



Article no.	PU	Description
27300000	1 pc	500 mm x 330 mm

## Interior tube brushes

With wooden handle and stainless steel trim

Packed in cardboard box, for mechanical cleaning of copper fittings



Article no.	PU	Dimensions
27149004	100 pc	12 mm
27149000	100 pc	15 mm
27149001	100 pc	18 mm
27149002	100 pc	22 mm
27149003	100 pc	28 mm
27149005	100 pc	35 mm

## Sealing hemp for pipe threads

### First grade quality,

for sealing of metal threaded connections in hot water, cold water, heating and gas installations

Article no.	PU	Delivery form
27550055	62 pc	Bound in plaits of about 220 g (1 PU approx. 12.6 kg)



## Hemp dispenser

Article no.	PU	Delivery form
27550040	25 pc	40 g in plastic dispenser
27550052	12 pc	80 g in plastic dispenser



## Hemp bobbins

Article no.	PU	Delivery form
27550050	1 pc	80 g loosely wound on cardboard core
27550051	1 pc	80 g FELDER plastic dispenser, without contents



## Hemp ball

Article no.	PU	Delivery form
27550100	8 pc	100 g wrapped in foil



## FELDER Thread sealing paste

### For metal threaded connections with hemp

according to DIN EN 751-2 from DVGW for domestic installations of gas and drinking water pipes approved.

Article no.	PU	Delivery form
27400051	15 pc	150 g tube
27400052	15 pc	325 g tube





## PTFE-thread sealing tapes

### DVGW-tested

According to DIN EN 751-3, for fine and coarse thread  
 Fine thread FRp (DN ≤ 10)  
 Coarse thread GRp (10 ≤ DN ≤ 50)



Article no.	PU	Delivery form
27510112	250 pc	Class FRp, 0.1 mm thick, 60 g/m <sup>2</sup>
27510113	250 pc	Class GRp, 0.1 mm thick, 100 g/m <sup>2</sup>

## Locherpaste 2000

### Non-hardening sealing paste

for metal threaded connections in domestic installations, gas and drinking water supply and water heating systems, DIN DVGW test mark NV-5142BL0134  
 Use with hemp up to +130 °C

Article no.	PU	Delivery form
27400055	20 pc	250 g tube
27400056	18 pc	400 g tin
27400057	18 pc	850 g tin



## Building plugs

Article no.	PU	Delivery form
27700001	100 pc	Plastic, 1/2" blue
27700002	100 pc	Plastic, 1/2" red
27700010	100 pc	Plastic with brass thread, 1/2", blue
27700011	100 pc	Plastic with brass thread, 1/2", red



## Loctite® 55

### Thread sealing thread with DVGW test mark

Non-hardening thread sealant for sealing threads from 1/4" to 6".

Article no.	PU	Delivery form
27510114	48 pc	Can of 160 m



## NEO-FERMIT UNIVERSAL

### For metal threaded connections with hemp

According to DIN EN 751-2 from DVGW for domestic installations of gas and drinking water pipes approved.

Article no.	PU	Delivery form
27400040	100 pc	90 g tube
27400050	15 pc	150 g tube
27400058	15 pc	325 g tube
27400059	24 pc	450 g tin



## PLASTIC-FERMIT white

### Permanently plastic, kneadable sealing compound on plastic basis

Sealing putty for sanitary installations

Article no.	PU	Delivery form
27450055	24 pc	0.250 kg can
27450060	30 pc	0.500 kg can
27450070	18 pc	1 kg can



## FERMITEX

### Chemical pipe cleaner

Removes blockages, bad smells and dangerous odours simply, quickly and reliably bacteria in drains, even frozen pipes thaw again.

Article no.	PU	Delivery form
27450470	12 pc	1 kg can



## Tub sound insulation tape

### Bathtub stop profile with tear seam

PE strips, one-sided self-adhesive, white, format 50 x 4

Article no.	PU	Delivery form
27900053	25 pc	Length 3.30 m



## Sound insulation set for wall-hung WC and bidet

### With test certificate

Thickness 4 mm

Article no.	PU	Delivery form
27900025	15 pc	Cartons of 15 pieces



## FELDER-lubricant for plug-in sockets

### Lubricant for all pluggable pipes

- Excellent sliding effect
- Does not leak
- Free from acids and alkalis
- Non-skin-irritant
- Biodegradable
- Lightly perfumed

Article no.	PU	Delivery form
27180160	20 pc	500 g dosing bottle



## FELDER-lubricant

### For the assembly of plastic connections with plug-in sleeve and rubber ring

Article no.	PU	Delivery form
27180350	50 pc	150 g Tube
27180355	50 pc	250 g Tube
27180360	24 pc	500 g Tube
27180371	1 pc	1 kg Dose



## Leak detection spray

With DVGW test mark

Leak test agent

Article no.	PU	Delivery form
27150000	12 pc	400 ml spray can
27150075	1 pc	5 l canister
27150100	1 pc	10 l canister

## Leak detection spray

Frost-proof to -15 °C

Article no.	PU	Delivery form
27151000	12 pc	400 ml spray can



## Burner cleaner spray

Cleaning and degreasing spray

For all heavily soiled burner parts

Article no.	PU	Delivery form
27680061	12 pc	500 ml spray can



## Universal boiler cleaner foam

**Special cleaner for gas and oil-operated boiler plants**  
(e.g. maintenance of gas boilers)

Article no.	PU	Delivery form
27660061	12 pc	500 ml spray can



## Cutting oil spray

**With DVGW test mark**

Food safe, combination of active ingredients contains no aggressive additives  
Protects against corrosion

Article no.	PU	Delivery form
27230000	12 pc	400 ml spray can



## Rust remover spray, acid-free

**Protects against corrosion**

Moisture-displacing

Article no.	PU	Delivery form
27220000	12 pc	400 ml spray can





## Release spray

Separating spray for inert gas and electrode hand welding, prevents encrustation of the burner nozzles and burning on welding tips

400 ml aerosol cans

Article no.	PU	Description
27170000	12 pc	<b>Silicone spray</b> silicone-based release spray
27172000	12 pc	<b>Release spray, silicone-free</b> silicone-free release spray



## Metall-Farb-Spray

Forms a quick-drying and permanently adhering corrosion protection layer on all metal surfaces, wood, ceramics, glass, etc.

400 ml aerosol cans

Article no.	PU	Description
27210000	12 pc	<b>Zinc spray</b> Protective layer of microfine zinc dust
27211000	12 pc	<b>Aluminium spray</b> Ideal for repair work (e.g. soldering and welding seams)
27215000	12 pc	<b>Zinc-aluminium-mix-spray</b> Protective layer of microfine zinc dust
27212000	12 pc	<b>Stainless Steel Spray</b> Short-term heat resistant up to 300 °C
27213000	12 pc	<b>Copper spray</b> ideal for repair work (e.g. soldering and welding seams)
27214000	12 pc	<b>Brass spray</b> Ideal for repair work (e.g. soldering and welding seams)



## Brazing alloys - Weights in grams per meter

Alloy	Density	0.5 mm Ø	1.0 mm Ø	1.5 mm Ø	2.0 mm Ø	3.0 mm Ø
L-Ag 20	8.7	1.71 g	6.83 g	15.37 g	27.32 g	61.47 g
L-Ag 25	8.8	1.73 g	6.91 g	15.54 g	27.63 g	62.17 g
L-Ag30Sn	8.8	1.73 g	6.91 g	15.54 g	27.63 g	62.17 g
L-Ag34Sn	9.0	1.77 g	7.07 g	15.90 g	28.26 g	63.59 g
L-Ag40Sn	9.1	1.79 g	7.14 g	16.07 g	28.57 g	64.29 g
L-Ag44	9.1	1.79 g	7.14 g	16.07 g	28.57 g	64.29 g
L-Ag45Sn	9.2	1.81 g	7.22 g	16.25 g	28.89 g	65.00 g
L-Ag55Sn	9.4	1.84 g	7.38 g	16.60 g	29.72 g	66.41 g

## Soft solder alloys - Weights in grams per meter

Alloy	Density	0.5 mm Ø	1.0 mm Ø	1.5 mm Ø	2.0 mm Ø	3.0 mm Ø
Pb60Sn40	9.3	1.83 g	7.30 g	16.43 g	29.20 g	65.70 g
Pb50Sn50	8.9	1.75 g	6.99 g	15.72 g	27.95 g	62.88 g
Sn60Pb40	8.5	1.67 g	6.67 g	15.01 g	26.69 g	60.05 g
Sn99Cu1/Sn100Ni+	7.3	1.43 g	5.73 g	12.89 g	22.92 g	51.57 g
Sn97Cu3	7.3	1.43 g	5.73 g	12.89 g	22.92 g	51.57 g
Sn97Ag3	7.4	1.45 g	5.81 g	13.07 g	23.34 g	52.28 g
Sn96,5Ag3Cu0,5	7.5	1.47 g	5.89 g	13.25 g	23.55 g	52.99 g
Sn95,5Ag3.8Cu0,7	7.5	1.47 g	5.89 g	13.25 g	23.55 g	52.99 g
Sn99,9	7.3	1.43 g	5.73 g	12.89 g	22.92 g	51.57 g
Pb99,9	11.36	2.23 g	8.92 g	20.06 g	35.67 g	80.26 g

## Useful formulas

Application	Formula
Wire round - g/m	$\frac{\varnothing^2 * \pi * \text{Density}}{4}$
Bars square - g/m	$\varnothing^2 * \text{Density}$
Tape - g/m	Width * Thickness * Density
(Note: All dimensions in mm - density in g/cm <sup>3</sup> )	$\left(\frac{\text{wire}\varnothing}{2}\right)^2 * \pi * (\text{wire}\varnothing + \text{ring inside}\varnothing) * \pi * \text{density}$

(Note: All dimensions in mm - density in g/cm<sup>3</sup>)





# FELDER

— seit 1979 —

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