



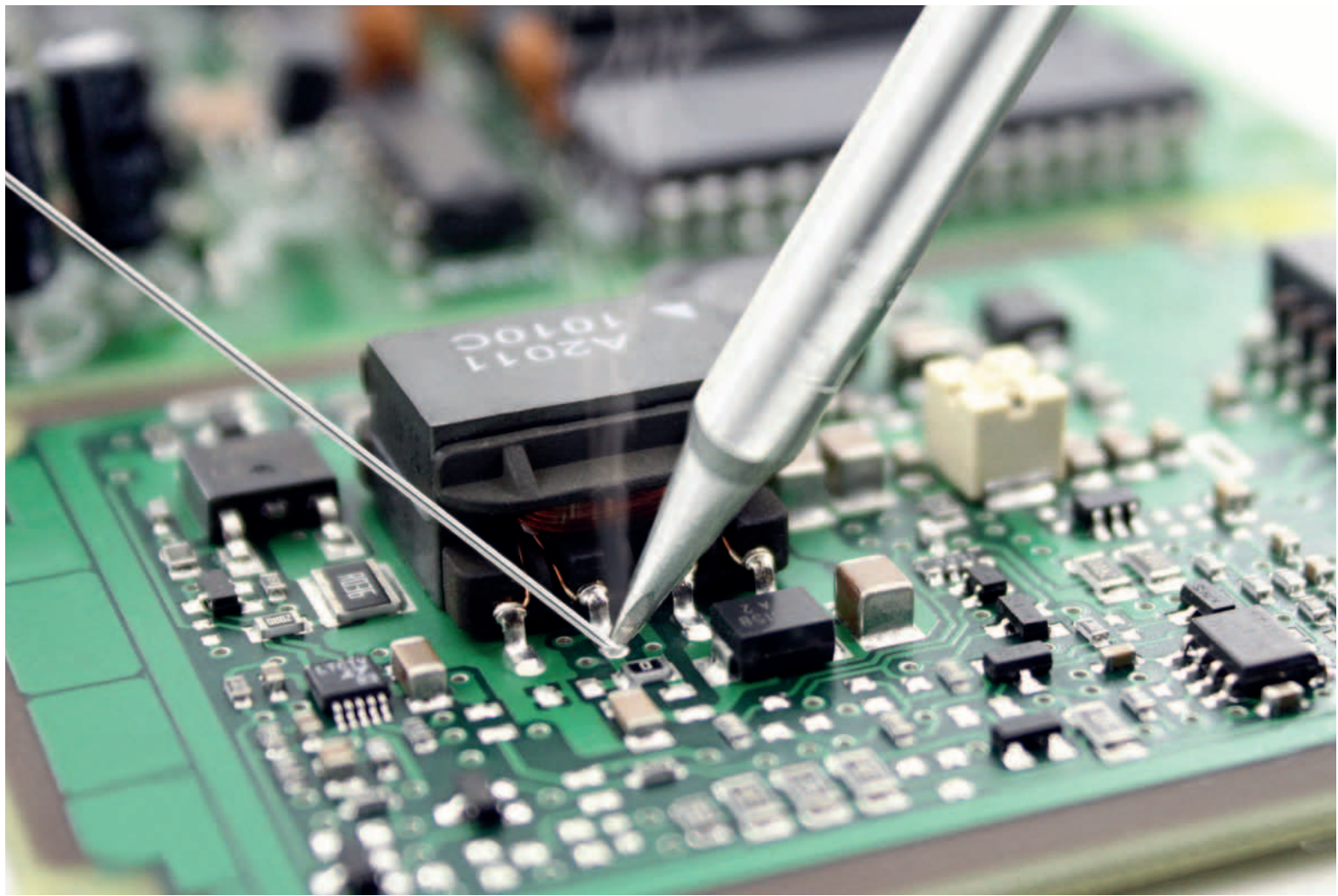
**STANNOL**



<b>SOLDER WIRES</b>	SOLDER PASTES	FLUXES	SOLDER BARS
SOLDERING EQUIPMENT	MEASUREMENT AND TESTING SYSTEMS	CONFORMAL COATINGS	ACCESSORIES

# SOLDER WIRES

FOR ELECTRONICS MANUFACTURING



## WE HAVE THE RIGHT SOLDER WIRE FOR EVERY APPLICATION.

IN ELECTRONICS, A SOLDER WIRE IS USED TO CONNECT COMPONENTS TO EACH OTHER WITH ELECTRICAL CONDUCTIVITY. HOWEVER, A SOLDER WIRE CAN ALSO BE USED TO FORM A MECHANICAL SOLDER JOINT ON MANY DIFFERENT SOFT SOLDERABLE SURFACES. DUE TO THE MANY DIFFERENT APPLICATIONS AND APPLICATION AREAS, WE PROVIDE A WIDE RANGE OF MANY DIFFERENT SOLDER WIRES.

Solder wires can be flux-cored or solid. A flux is necessary for the soldering process to remove oxides and other impurities and to guarantee a reliable connection. Flux-cored solder wires already contain the correct amount of flux. Different fluxes are used depending on the soldering task. The selection of a suitable alloy also plays an important role for the solder joint. For selection of the alloy, we refer to the catalogue: **Solder bars**. In the following, we would like to go into the selection of the different types of fluxes which can be used inside solder wires for different applications.

We are pleased to present our complete product overview, available delivery forms such as fluxes, diameters and reel sizes in a personal meeting.

## HALIDE CONTAINING FLUXES FOR SOLDER WIRES

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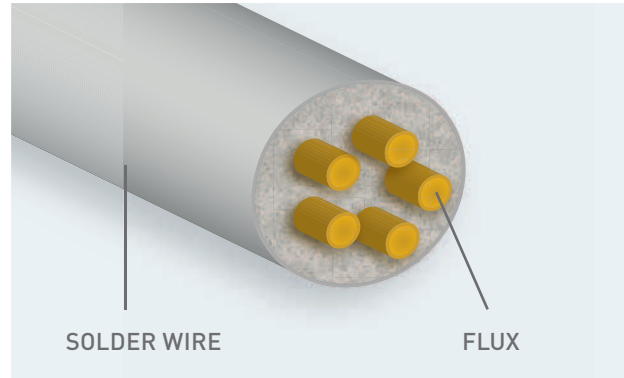
There are two groups of different activation levels to choose from: Halide containing and halide free fluxes for solder wires. The fluxes with higher activity usually contain halides. Stannol provides five halide containing solder wire fluxes which can be used in the electronics industry as No-Clean products.

The flux **HS10** is a solder wire flux containing rosin which has proved to be successful for decades. Short wetting times on common surfaces are achieved with this flux. The flux is suitable for both manual soldering and robot soldering with fast cycle times.

If clear residues are required, the proven **Kristall series** of solder wires from Stannol should be selected. These fluxes have been developed to leave transparent residues on the circuit board. The **Kristall 511** flux has a slightly higher activation than the HS10 flux and can be used as an option if transparent residues are required.

The **Kristall 505** flux differs from Kristall 511 by its lower activity. This requires better solderable surfaces; however this achieves a little higher electrical safety of the residues on the circuit board.

The **KS115** flux is used if there is higher thermal load during the soldering process. Good soldering results are achieved



An important part of the solder wires is the flux, which plays an important role for the removal of oxides from the metal surfaces to be soldered.

due to the high activity beside the very low spitting properties of the flux.

Flux type **2630** provides the highest activity of our No-Clean wire fluxes. It is used for surfaces with poor solderability and for larger solder areas which may require a higher thermal input to the solder joint.

## SOLID WIRES

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Besides the flux-cored solder wires, Stannol also has many solid solder wires in its product range. Amongst others, these wires are used e.g. to refill selective solder baths. Most alloys are available as solid solder wires.

The two NSL alloys take a special position here. They have a very low melting point and are used for special applications. NSL stands for lead-free bismuth-alloys.

### NO-CLEAN SOLDER WIRE FLUXES

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The residues of so called No-Clean fluxes can remain at the solder joint. Corrosive reactions at the solder joint are not expected. When using highly activated fluxes, the residues may have to be removed after the soldering, otherwise corrosion at and around the solder joint can occur.

### HALIDES

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If a solder wire flux contains halides, it is usually higher activated than a halide-free one. Activated wire fluxes containing halides are usually distinguished during the soldering process by better wetting. Halide-free wire fluxes and their residues are usually considered as significantly less susceptible to corrosion on the solder joint.

## HALIDE-FREE SOLDER WIRE FLUXES

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Halide-free solder wire fluxes are used if it is not permitted to use products containing halides in the manufacturing process and if higher electrical safety of the residues is required. In comparison with the halide containing fluxes, these fluxes provide lower activity and require good solderable surfaces.

The **Kristall 400** solder wire flux is the halide-free version of the Kristall series from Stannol. Characteristical for these fluxes are the transparent residues and good activity with which outstanding soldering results can be achieved.

The **KS100** solder wire flux is the halide-free version for soldering processes which are thermally more challenging. A further benefit of the KS100 is the production of low solder fumes; the number of flux spatters is also strongly reduced.

The halide-free wire flux **HF32** combines high activity with good wetting characteristics and low residues on the

circuit board in an outstanding way. The HF32 can be used for manual and robot soldering.

The **X39B** solder wire flux contains a balanced proportion of resins and activators which guarantee minimal residues and high reliability without subsequent cleaning. The X39B is mainly used for repair soldering.

The **HF34** flux is the most active halide-free flux from Stannol. Its activity is based on organic acids. Only a relatively low amount of flux content in the wire is required to achieve a good solder joint. As a result, only a very low amount of residues remains on the circuit board. However, due to the special composition, it must be checked whether these are permitted to remain on the circuit board or need to be cleaned.

## SOLDER WIRE FLUXES FOR SPECIAL APPLICATIONS

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In addition to solder wires for electronics, Stannol also provides flux-cored solder wires with special fluxes which have been developed for difficult wettable surfaces. All residues are water soluble which makes the required cleaning easy.

The **S321** solder wire flux is particularly suitable for soldering metal and sheet metal. Tinned surfaces as well as brass or iron can also be processed well with this solder wire.

Using the **ALU-SOL** solder wire flux, the poorly solderable aluminium and some aluminium alloys can be soft soldered. This is made possible due to its special, highly active ingredients.

Good soldering results on stainless steel can be achieved with the **ARAX** solder wire flux.

### SYNTHETIC AND MODIFIED RESINS

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These resins are distinguished by the fact that they are thermally stable in comparison with natural rosins. They will leave in general brighter residues on the solder joint, if the application instructions are observed.

### DIN AND EN STANDARDS

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The standards classify a solder wire flux according to specific criteria. The fluxes are assessed according to the ingredients whereby conclusions can be drawn about, for example, the activity of the flux. The various standards are formed using different assessment systems.

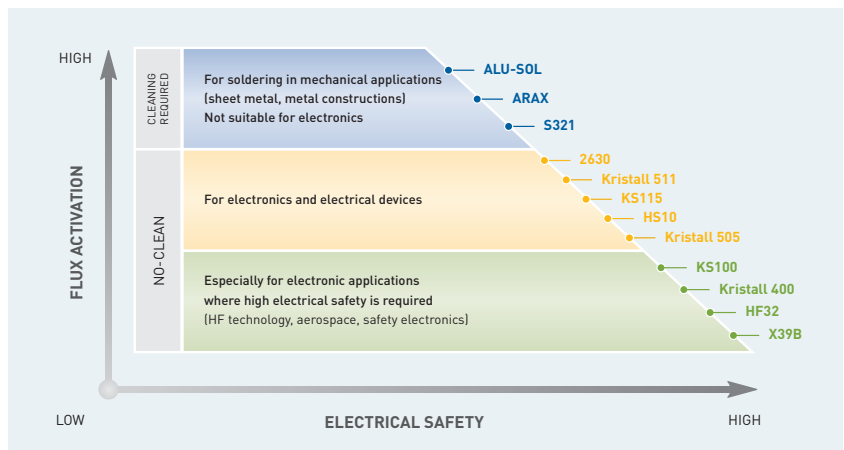
SOLDER WIRE FLUX	FLUX PROPERTIES						LEAD-CONTAINING ALLOYS					FLOWTIN SERIES <sup>(1)</sup> lead-free alloys with micro-alloyed adders				ECOLOY SERIES <sup>(2)</sup> lead-free alloys without micro-alloyed adders							
	FLUX CONTENT	HALIDE CONTENT	NO-CLEAN	DIN EN 29456-1	J-STD-004	DIN 8517 F-SW	S-SN60PB40	S-SN60PB39CU1	S-SN62PB36AG2	S-SN62SN5AG3	PB80SN18AG2	FLOWTIN TSC SN95.5AG3.8CU0.7 + FLOWTIN	FLOWTIN TSC305 SN96.5AG3.0CU0.5 + FLOWTIN	FLOWTIN TSC263 SN97.196AG2.63CU0.3 + FLOWTIN	FLOWTIN TSC0307 SN99AG0.3CU0.7 + FLOWTIN	FLOWTIN TC SN99CU1 + FLOWTIN	ECOLOY TS S-SN96AG4	ECOLOY TSC S-SN95AG4CU1	ECOLOY TSC305 S-SN96AG3CU1	ECOLOY TSC263 SN97.196AG2.63CU0.3	ECOLOY TSC0307 S-SN98CU1AG	ECOLOY TC S-SN99CU1	NSL S-Bi58SN42 / Bi57SN42Ag1
MELTING RANGE							183 – 190°C	183 – 190°C	179°C	296 – 301°C	179 – 280°C	227°C	217 – 220°C	217 – 224°C	217 – 227°C	227°C	221°C	227°C	217 – 220°C	217 – 214°C	217 – 227°C	227°C	139°C
HS10	2.5%	1,0%	•	1.1.2	ROM1	26	•	•	•	•						•	•	•	•		•		
Kristall 511	2.70% / 3.0%	1,1%	•	1.2.2	REM1	26					•	•		•	•		•	•	•		•		
Kristall 505	3.0%	0,5%	•	1.2.2	REM1	26	•																
KS115	3.0%	1,5%	•	1.2.2	REM1	28					•	•			•								
2630	2.0% / 2.2%	1,7%	•	1.1.2	ROM1	26		•									•					•	
Kristall 400	2.2%	0,0%	•	1.2.3	RELO	33	•	•			•		•	•	•		•	•	•		•		
KS100	3.0%	0,0%	•	1.2.3	RELO	33					•	•		•									
HF32	3.5%	0,0%	•	1.1.3	ROLO	32	•	•	•								•					•	
HF32 SMD	1.0%	0,0%	•	1.1.3	ROLO	32	•	•															
X39B	1.0%	0,0%	•	1.2.3	RELO	33	•																
HF34	1.6%	0,0%	x	2.2.3	ORM0	34	•					•	•										
S321	2.0%	>5,0%		2.1.2	ORH1	24	•															•	
ALU	2.2%	>5,0%		2.1.2	ORH1					•													
ARAX	2.7%	>5,0%		2.1.2	ORH1	25	•									•							
Solid	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	•				•	•		•	•	•	•	•		•	•	•	

x (must be checked in each individual case)

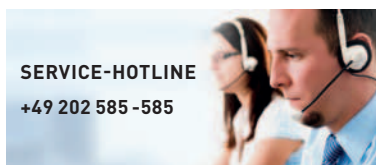
<sup>(1)</sup> The micro-alloyed **FLOWTIN** solders have been developed by Stannol to achieve the lowest possible dissolution rate of copper and iron. Depending on the general conditions, an increase in the life time of soldering tips of up to 50% is possible.

<sup>(2)</sup> All ultra pure, lead-free standard alloys are designated as **ECOLOY**.

For further information about the characteristics of the alloys, please refer to our website or the brochure: **Solder bars**.



## OTHER AVAILABLE SOLDER WIRES



In this brochure we can only show a limited product selection and have therefore focused on our top sellers. Our complete product range of flux cored solder wires is significantly more extensive. Other products as well as a new and

innovative product selector can be found at [www.stannol.de](http://www.stannol.de). Selecting the site "Products" you can choose the products according to many different criteria.



# STANNOL

## TRADITION AND INNOVATION

SOLDERING TECHNOLOGY SINCE 1879 – MADE IN GERMANY



SOLDER WIRES



FLUXES



SOLDERING IRONS



SOLDER PASTES



ACCESSORIES



SOLDER BARS



# STANNOL

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