



STANNOL

Pioneers of Soldering

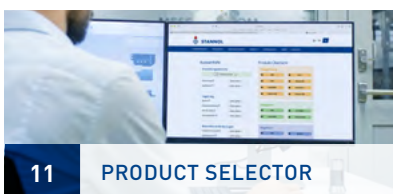
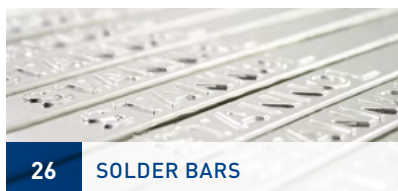


SOLDER WIRE	SOLDER PASTE	FLUX	SOLDER BARS
GREENCONNECT	SELECTIVE STARTER KIT	RECYCLING AND DISPOSAL	TEST AND ANALYSIS SERVICE

SOLDERING MATERIALS



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The Flux-Ex Cleaners

■ Flux-Ex Pre

efficient cleaning **before** soldering

■ Flux-Ex Post

optimum cleaning **after** soldering

■ Flux-Ex Post Power

extra powerful cleaning **after** soldering

■ Flux-Ex Glue

specialist for **removing** adhesives and thermal pastes

■ Flux-Ex Oven

the all-round talent for **cleaning** soldering systems



The right product for every application



The Flux-Ex series includes broadband and speciality cleaners that are perfectly tailored to their respective areas of application – e.g. for cleaning before the soldering process or for removing residues after soldering. All cleaners are delivered as a ready-to-use-mix.

Do you have any questions about our products?

Our application engineers are happy to assist you. Contact us via the QR code – there you will find the right contact person for you.

greenconnect

greenconnect by Stannol – soldering materials with defined social and environmental criteria



Stannol has a long tradition in the manufacture of soldering products. For more than 140 years, we have combined experience with innovation, continuously developing our products and processes. Our focus extends beyond quality and technical performance to include social and environmental considerations. Under the greenconnect name, Stannol offers a product range subject to defined criteria for the selection and sourcing of raw materials. The aim is to improve supply chain traceability and give greater consideration to social and environmental risks. Details of the criteria met by each product and the supporting evidence are provided in the relevant product information. For many years, tin purchasing decisions were primarily based on quality, price and availability. However, tin extraction can involve significant social and environmental risks. These include poor working and living conditions in mining regions, as well as adverse impacts on the environment and ecosystems—particularly as a result of uncontrolled or illegal mining. With greenconnect, Stannol aims to ensure that these risks are considered more systematically when sourcing raw materials.

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Our greenconnect products help customers give greater consideration to social and environmental criteria when selecting soldering materials and make their manufacturing processes more responsible.

The five areas of greenconnect

- **Solder bars** containing tin from Fairtin sources
- **Solder wires** containing tin from Fairtin sources
- **Solder paste** containing metal powder made with tin from Fairtin sources
- **Fluxes** based on renewable raw materials and/or water-based fluxes
- **Packaging materials** containing recycled content, including solder wire spools made from recycled material as well as packaging and filling materials made from recycled paper

Fairtin by Stannol – tin sourced through defined supply channels

Fairtin is Stannol's concept for selecting specific sources of tin. Depending on the product and alloy, products identified as Fairtin contain either primary tin from sources assessed



For the soldering products in our greenconnect range, we use primary and secondary raw materials sourced from companies selected according to defined social and environmental criteria. These include measures to protect the environment and employees, as well as measures to prevent child labour.

(Marco Dörr, Geschäftsführer der Stannol GmbH & Co. KG)

against defined criteria or high-purity secondary tin produced in Europe. Stannol documents the Fairtin requirements relating to origin, supplier assessment, traceability and material quality. The specific criteria and available supporting evidence are provided for the relevant product or batch.

Tin sourcing in accordance with Fairtin criteria

For Fairtin products, we source tin from producers that meet defined social, environmental and corporate responsibility criteria. These include:

- measures to protect the environment,
- compliance with applicable national and international requirements,
- social responsibility towards employees and local communities, for example through appropriate wages and suitable occupational health and safety measures,
- measures to prevent child labour, and
- transparent business practices.

Fluxes – bioethanol instead of IPA

In our greenconnect bio-based fluxes, we replace the main component, isopropyl alcohol (IPA), with bioethanol. The bioethanol used is derived from renewable feedstocks, such as food waste. Depending on the feedstocks and production process, bioethanol can generate lower greenhouse gas emissions than fossil-based IPA.

Water-based fluxes

In addition to bio-based fluxes, Stannol offers water-based greenconnect fluxes. These non-flammable formulations contain no alcohol-based solvents, which can simplify storage and handling requirements. They can also reduce solvent-related emissions compared with comparable alcohol-based fluxes.

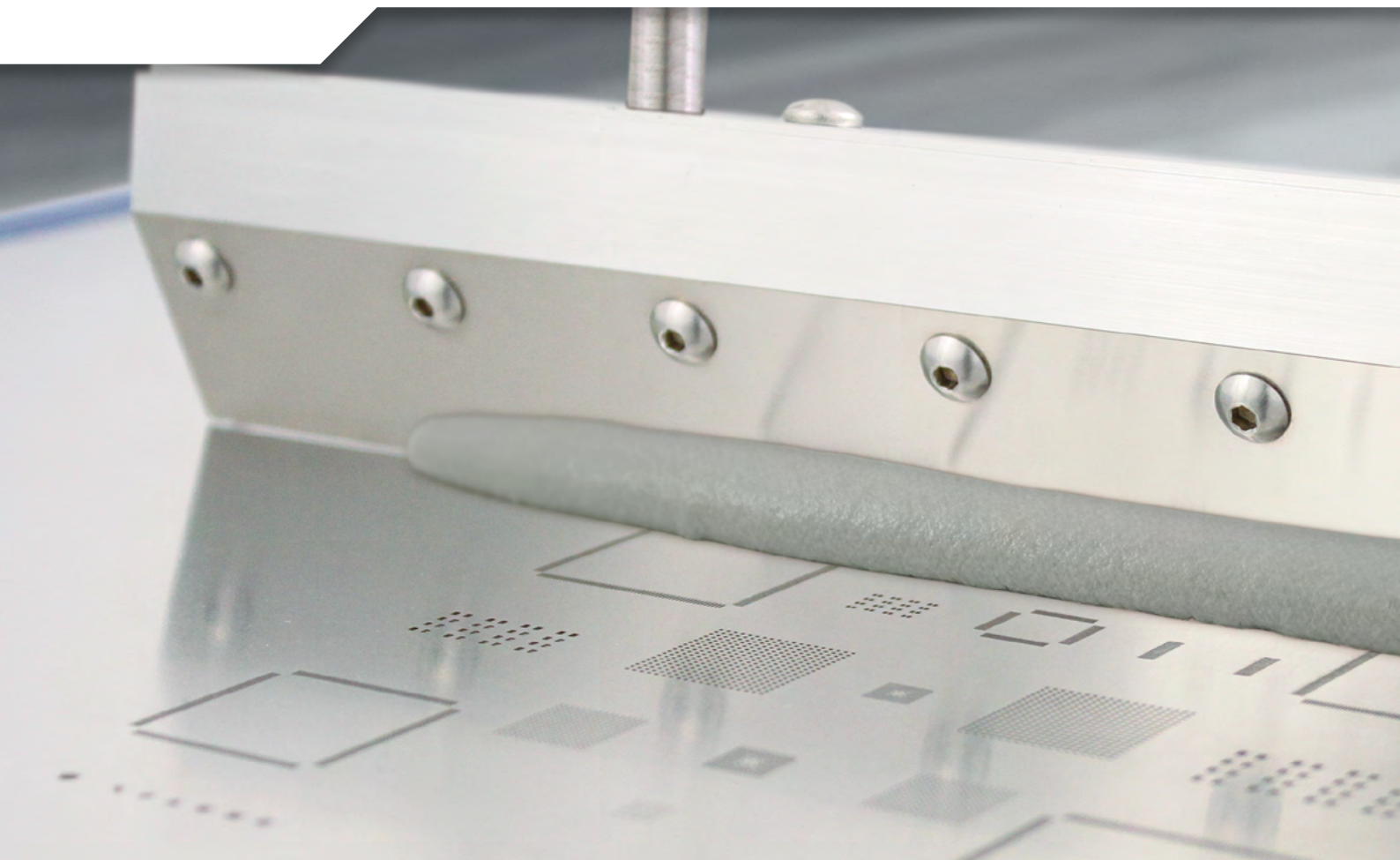
No need for requalification

The high quality standards of our own products ensure that some greenconnect materials can be used in the respective manufacturing process without the need for costly requalification.

Our most important greenconnect products include:

- Solder wire Kristall 600
- Solder wire Kristall 605
- Solder wire Kristall 611
- Solder paste SP2200
- Solder paste SP6000
- Solder paste SP6500
- Flux EF350 Bio
- Flux EF160 Bio PV
- Flux EF180 Bio PV
- Flux EF200 Bio PV
- Flux SF1000 Bio
- Flux AK-1 Bio
- Flux WF130
- Flux WF131
- Flux WF300S

On request, every alloy in our range can also be supplied as Fairtin version. Further information on our greenconnect products can be found in this catalogue under the respective product category.



Solder Pastes

In electronics, solder pastes are used in reflow soldering systems and for repair soldering.

Stannol manufactures lead-containing and lead-free solder pastes in various alloys, particle sizes and packaging for a wide range of applications and fields of use. Specially developed for lead-free use, we offer silver-containing and silver-reduced solder pastes.



Reliable and Scalable Solder Paste Production at Stannol

Stannol stands for precision and quality in solder paste manufacturing. Our production process is defined by strict process control, the meticulous selection of high-grade raw materials, and an extensive testing regime. Each batch undergoes comprehensive chemical and physical evaluations—including viscosity, printing behaviour, wetting, activity, and performance under temperature influence. These parameters are assessed in accordance with national and international standards and specifications. Sensitive filling procedures are carried out in controlled environments by trained professionals, ensuring consistently high product quality and scalable production—from laboratory scale to full industrial manufacturing.

A product overview of our most important solder pastes can be found with our product selector. Based on various criteria, the selector can be used to generate an individual selection of suitable Stannol products. Basic selection criteria are, for example, the soldering process used and the desired alloy or flux properties. In addition, special criteria such as reduced dross formation or cost reduction are also available. Detailed explanations of the individual selection criteria provide further assistance. Of course, in addition to the product selector, our team of application engineers is also available to provide you with individual advice on selecting the right product – we would be happy to do so at an individual meeting on site.

Solder Paste SP6000

The solder paste **SP6000** is part of Stannol's greenconnect product line. The special feature: The use of recycled solder can reduce raw material-related CO₂ emissions compared with the use of primary tin. The solder paste was developed both for all lead-free alloys and for cost-saving use with low silver content. With SP6000, a very good first print is possible even after a long period of printer downtime. The flux, which is classified as REL0, also convinces with an uncompromising wetting quality on all known lead-free PCBs and component coatings in both air and nitrogen atmospheres. SP6000 leaves exceptionally little residue, which is also transparent and non-corrosive. SP6000 is available for the fine pitch range in particle size 4, and particle size 5 on request.



SP6500 Solder Paste for High-Volume SMT Manufacturing

Stannol's **SP6500** solder paste has been specifically developed for maximum throughput, long production runs, and reproducible results. As part of the greenconnect product range, SP6500 combines high technical performance with the aim of reducing environmental impacts in high-volume SMT production. Its specially engineered formulation ensures consistently high print-to-print performance, long stencil life, and reliable reflow results, even under demanding production conditions. This makes SP6500 the solder paste of choice for manufacturers seeking to minimise downtime, reduce rework, and safeguard process stability over the long term. SP6500 is designed for fine-pitch applications down to 0.4 mm, enabling precise print results even for very fine structures. Its excellent tack properties ensure secure component adhesion, making it particularly suitable for use in high-speed placement machines. SP6500 is compatible with virtually all common stencil printing systems.

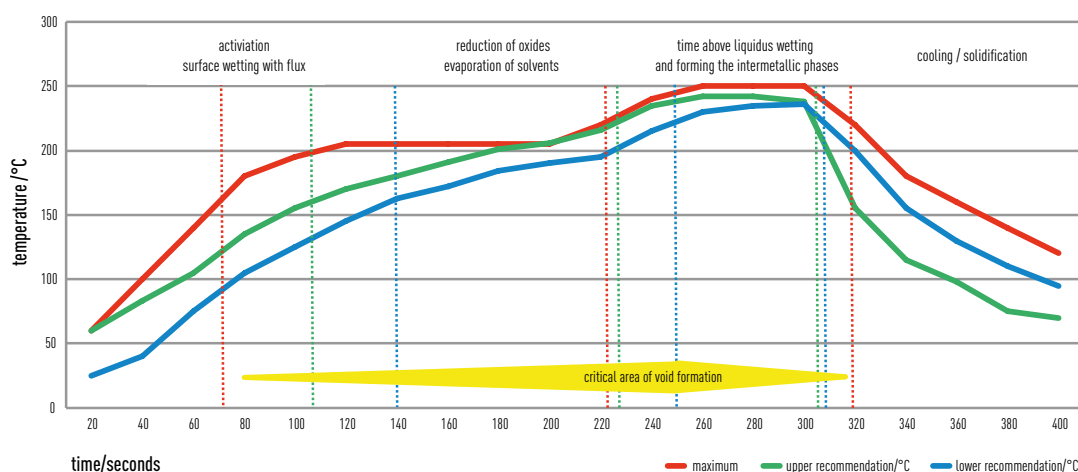


Ideal Soldering Profiles

Newly developed solder pastes can often be easily integrated into existing processes. Nevertheless, depending on the PCB and component configuration, it may be necessary to make minor changes to the temperature profile to achieve the desired performance of the flux. As a good starting point, the middle of the process window at 25 °C for 40 to 60 seconds above the melting point (liquidus) is satisfactory and generally gentle on the components.

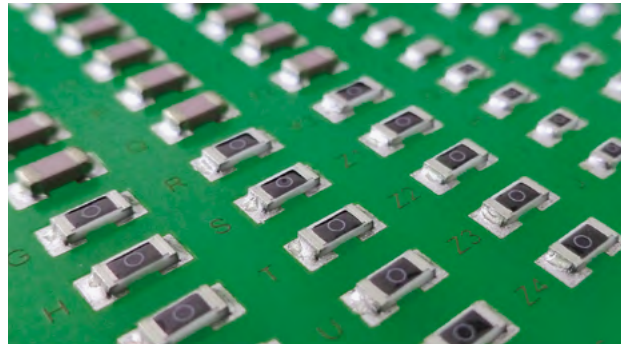
For special requirements, for example in vapour phase systems, with critical components or demanding PCB designs, an accelerated linear profile can also be useful. Please contact us for optimisation – our experienced application engineers will be happy to support you.

Recommended temperature profile for solder paste series in TSC305 (Sn96.5Ag3.0Cu0.5)



Lead-free Solder Paste

The No-Clean solder paste **SP2200** was developed for use with lead-free alloys in stencil printing. Besides the long open time, this solder paste shows good printing results even after longer interruptions directly in the first print. SP2200 is classified according to L0. This activation level provides good wetting on all surfaces used in today's electronics while maintaining a high electrical safety of the residues. The small amounts of residues after the reflow process are transparent and do not need to be removed. SP2200 is also available as greenconnect version.



Minimal amount of residues at highest electrical safety are the highlights of our latest and future oriented paste generations.

Lead-containing Solder Paste

Stannol **SP1200** solder paste has been developed for use with the lead containing alloy Sn62Pb36Ag2 as standard alloy. It contains a highly active type L No-Clean flux. With a special formula for excellent wetting, it meets the requirements of high volume production. The wetting properties

have been optimised for all known PCB and component coatings. The small amounts of residue after reflow are electrically safe and do not need to be removed.

Dispensable Solder Paste

Using the flux system of **SP6000**, we have developed the dispensable greenconnect solder paste SP6000D. Here too, more than 85 percent of CO₂ emissions can be saved compared to conventional solder pastes. Here too, the use of recycled solder can reduce raw material-related CO₂ emissions compared with equivalent solder pastes made from primary tin.

SP6000D can be used with all lead-free alloys in Type 4 powder size on most available dispensing systems.



Low-Temperature Solder Paste SP6000 TBS04

The No-Clean solder paste **SP6000** TBS04 (TBS = Tin, Bismuth, Silver) with the composition Bi57.6Sn42Ag0.4 is a lead-free, low-temperature solder paste. It is used in applications that require lower peak temperatures during the reflow process. Today, primarily lead-free, high-tin alloys such as TSC305 (Sn96.5Ag3.0Cu0.5, 221 to 223°C) are used. These lead-free alloys require processing temperatures that are 30 to 40 K higher than those of lead-containing solders. Not all components in the soldering process can withstand these higher temperatures without damage. Additionally, newer applica-

tions, such as in the LED sector (optical electronics), require lower maximum temperatures during soldering. The alloy used in this solder paste Bi57.6Sn42Ag0.4 has a melting range around 140°C and can therefore be safely and reliably remelted in a reflow oven at a maximum temperature of 170°C to 180°C. With a silver content of 0.4%, this alloy offers significantly higher long-term reliability compared to the eutectic BiSn alloy. Other benefits include lower reflow oven temperatures, reduced wear on equipment, and lower energy costs.

Solder Pastes (Selection)

NAME	ALLOY	CLASS ¹	MELTING RANGE	PARTICLE SIZE	METAL CONTENT
SP6500	SnCu0,65	ROL0	217–227 °C	4 (20–38 µm)	88,5 %
SP6500	SnAg3,0Cu0,5	ROL0	217–227 °C	4 (20–38 µm)	88,5 %
SP6500	SnAg1,0Cu0,5	ROL0	217–227 °C	4 (20–38 µm)	88,5 %
SP6000 TBS04	Bi57,6Sn42Ag0,4	REL0	138–140 °C	4 (20–38 µm)	90 %
SP6000	SnCu0,65	REL0	217–223 °C	4 (20–38 µm)	88–89 %
SP6000	Sn96,5Ag1,0Cu0,5	REL0	217–223 °C	4 (20–38 µm)	88–89 %
SP6000	Sn96,5Ag3Cu0,5	REL0	217–223 °C	4 (20–38 µm)	88–89 %
SP2300	Sn96,5Ag3Cu0,5 ²	REL0	217–220 °C	5 (15–25 µm)	89 %
SP2200	Sn96,5Ag3Cu0,5	REL0	217–220 °C	4 (20–38 µm)	89 %
SP2200	Sn99Ag0,3Cu0,7	REL0	217–227 °C	4 (20–38 µm)	89 %
SP2100	Sn95,5Ag4Cu0,5	REL1	217–223 °C	4 (20–38 µm)	88 %
SP1200	Sn62Pb36Ag2	REL1	179 °C	3 (25–45 µm)	90 %
SP1100	Sn62Pb36Ag2	ROM1	179 °C	3 (25–45 µm)	90 %

SOLDER PASTE FOR DISPENSING					
SP6000D	Sn96,5Ag3,0Cu0,5	REL0	217–220 °C	4 (20–38 µm)	88 %
SP6000D TBS04	Bi57,6Sn42Ag0,4	REL0	138–140 °C	4 (20–38 µm)	87 %
SP2200D	Sn96,5Ag3,0Cu0,5	REL0	217–220 °C	3 (25–45 µm)	87 %

¹ according to J-STD-005 | ² Anti-voiding formulation

Our solder pastes are available in standard containers as 500 g can, 6 oz cartridge and 12 oz cartridge – we are happy to support you with choosing the right product.

Selective Starter Kit

The Selective Starter Kit contains perfectly matched products for time-saving and simple set-up as well as reliable operation of all selective soldering systems for lead-free soldering processes.

The Selective Starter Kit has been composed with decades of experience in selective soldering processes, partly with specially developed products, partly with proven fluxes, taking into account the most common system technology and tool configurations. The use of high-purity metals, manufactured according to ISO 9453 or analogously, ensures compatibility with all soldering processes. The use of high-purity raw

materials also has a positive effect on throughput and soldering defect minimisation. The flux SF1000 Bio with its proven use in the automotive sector is an ideal selective flux to achieve safe solder joints in combination with electrically highly safe residues. In addition to its very wide process window in preheating, it also offers low residues and significantly minimises the cleaning effort.

Available Alloys for the Selective Starter Kit

Lead-Free Ecoloy Series	Ecoloy TSC305
Composition	S-Sn96,5Ag3Cu0,5
Melting point	217-220 °C

Lead-free micro-alloyed	Flowtin TSC305
Composition	S-Sn96,5Ag3Cu0,5*
Melting point	217-220 °C

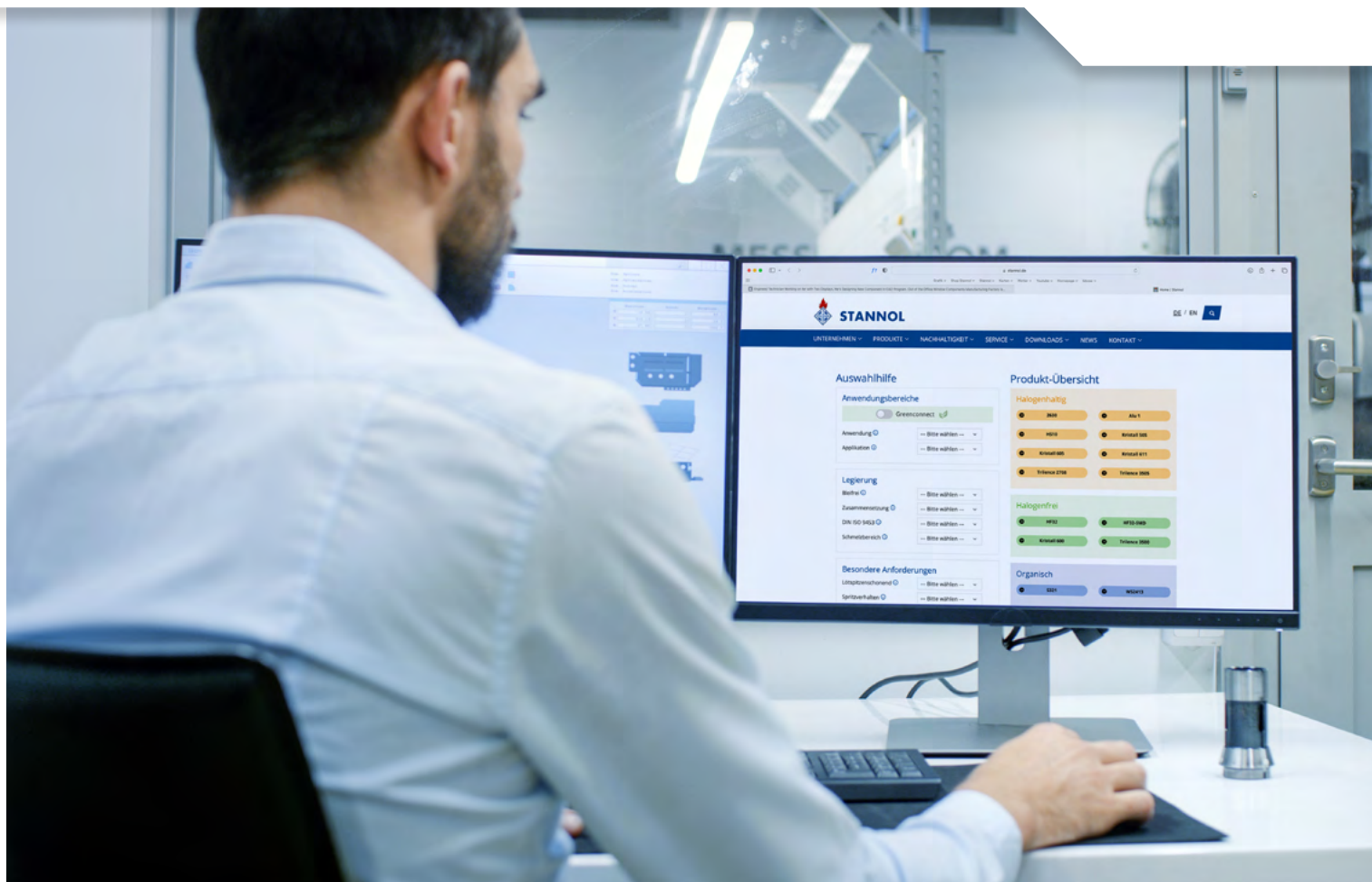
Lead-free micro-alloyed	SN100C™
Composition	Sn99,3Cu0,7NiGe
Melting point	227 °C

* According to ISO 9453:2014 or internal specifications, additionally doped with micro alloy additives <0.05%.

Content of the Selective Starter Kit

- **10 kg lead-free solder as triangular bars** (different alloys available)
- **1 litre SF1000 Bio selective flux**
- **4 kg solid wire** (in chosen composition with 2.0 mm diameter)
- **container** (for proper disposal/return of solder waste)
- **technical advice on site** (for joint determination of the ideal soldering parameters)





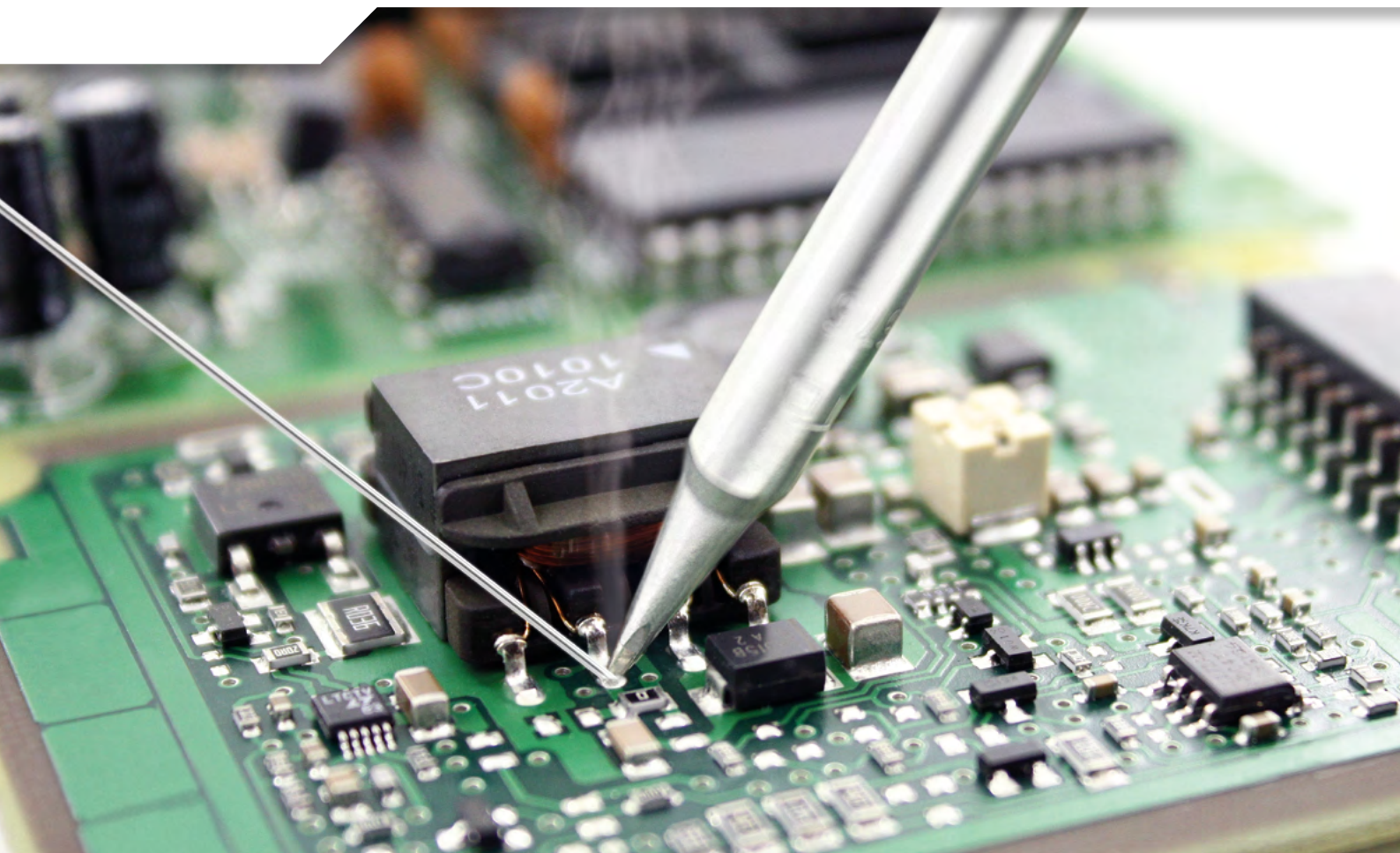
Stannol Product Selector

Stannol manufactures more than 2,200 different versions of solder wires and around 100 different fluxes. In order to give you a better overview of our products and to simplify the selection process, we have developed our innovative product selector. This offers a comprehensive overview of our most important solder wires, solder bars, solder pastes and fluxes on our website.



Based on various criteria, the selector can be used to generate an individual selection of suitable Stannol products. Basic selection criteria are, for example, the soldering process used and the desired alloy or flux properties. In addition, special criteria such as reduced dross formation or cost reduction are also available. Detailed explanations of the individual selection criteria provide further assistance.

Of course, in addition to the product selector, our team of application engineers is also available to provide you with individual advice on selecting the right product – we would be happy to do so at an individual meeting on site.



Solder Wires

Stannol manufactures a wide range of solder wires for different applications and uses. Solder wires can be flux filled or solid. The soldering process requires a flux to remove oxides and other impurities and to create a safe solder joint. In flux-filled solder wires, the flux is already contained in the right quantity. Depending on the soldering task, different fluxes are used. The selection of a suitable alloy also plays an important role in the reliability of a solder joint. Please refer to the table on page 29 for the different alloys.



A product overview of our most important solder wires can be found with our product selector. Based on various criteria, the selector can be used to generate an individual selection of suitable Stannol products.

Basic selection criteria are, for example, the soldering process used and the desired alloy or flux properties. In addition, special criteria such as reduced dross

formation or cost reduction are also available. Detailed explanations of the individual selection criteria provide further assistance. Of course, in addition to the product selector, our team of application engineers is also available to provide you with individual advice on selecting the right product – we would be happy to do so at an individual meeting on site.

Halogen-containing Fluxes

It can be chosen between halogen-containing and halogen-free fluxes. Fluxes with a higher activity are usually halogen activated. As standard, Stannol offers various halogen-containing fluxes that can be used as No-Clean products in the electronics industry.



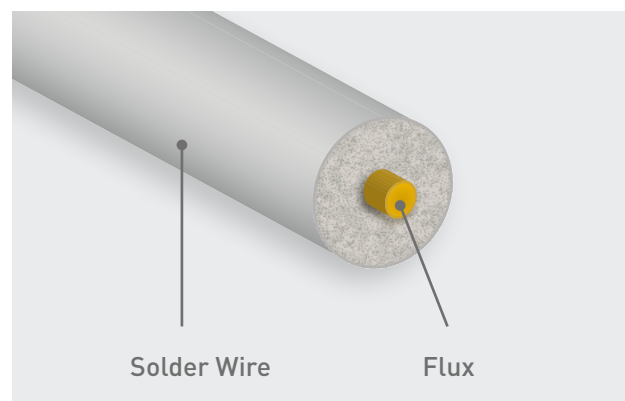
If transparent residues are required, the choice should be Stannol's colourless proven **Kristall series**. These fluxes have been developed to leave hardly any visible residues on PCBs.

The greenconnect fluxes **Kristall 605** and **Kristall 611** are characterised by their particularly low spitting behaviour, similar to our Trilence series. Kristall 605 is classified as REL1, Kristall 611 as REM1. Both solder wires are offered in the alloys Flowtin and SN100C™. These alloys are gentle on the soldering tips, which considerably increases their service life.

The flux used in our **HS10** solder wire is a rosin-based flux that has been tried and tested for decades. With HS10, short wetting times are achieved on common surfaces. The flux is suitable for hand soldering as well as for fast cycle times in automated soldering.

Our flux **2630** offers the highest activity of a flux in a solder wire. It is used for surfaces that are difficult to solder and for larger cross-sections.

Stannol has taken a completely new approach in developing the **Alu 1** solder wire for soldering on aluminium: non-toxic activators have been combined to enable aluminium to be joined to other materials. The residues are non-corrosive and do not need to be removed.



An important component of solder wires is the flux, which plays a decisive role in the removal of oxides from the metal surfaces to be soldered. The Stannol range of solder wires is manufactured as a standard with one flux core.

Halogen-free Fluxes

Halogen-free fluxes are suitable when halogen-containing products cannot be used in manufacturing and a higher electrical safety of the residues is required. These fluxes offer lower activity compared to the halogen-containing ones.

The greenconnect flux **Kristall 600** is a halogenide-free variant of the proven Kristall series from Stannol. In addition to the colourless residues and the good activity, the tendency to spit at higher soldering temperatures has been further reduced with this innovative flux.

The flux contained in **HF32** combines a good activity with a very high electrical safety of the residues on the PCB in an excellent way. HF32 can be perfectly used for hand soldering.

Organic Fluxes

In addition to solder wires for electronics, Stannol also offers solder wires with special fluxes that have been developed especially for surfaces that are difficult to solder. These include, for example, solder wires with water-washable residues.

S321 is especially suitable for soldering metal and sheet metal goods. Tin-plated surfaces can be processed as well as brass or iron.

WS2413 was developed for surfaces in electronics that are difficult to solder. It leaves a water-soluble residue. Easy and fast wetting, a short cycle time and a quick removal of residues are the main features of this solder wire.



Trilence Series: Automated Soldering

The flux system Trilence has been specially developed for demanding soldering tasks in the field of automated soldering. Due to its optimised properties, the flux system is ideally suited for laser soldering.



TRILENCE 3505



STANDARD

On a copper surface, the differences between residues of lead-free solder wires can be seen clearly. The Trilence solder wires are characterised by low spitting, light residues as well as excellent wetting.

The Trilence flux is available as a halogen-activated flux (**Trilence 3505** and **Trilence 2708**) as well as a halogen-free flux (**Trilence 3500**).

All Trilence fluxes are colophony-free and based on a synthetic resin matrix. The Trilence solder wires can be used like conventional solder wires. Due to the very low tendency to spit, the light residues and the high thermal load capacity of the Trilence flux, a particularly clean soldering pattern is produced.

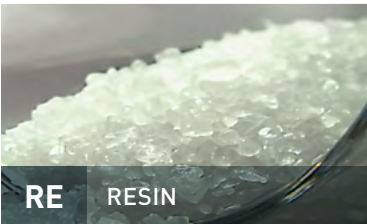
Solder Wire Flux Properties

SOLDER WIRE FLUX		FLUX PROPERTIES				LEAD-CONTAINING ALLOYS					FLOWTIN SERIES (1) lead-free alloys with micro alloy additions				ECOLOY SERIES (2) lead-free alloys without micro alloy additions						SN100C™	GREENCONNECT/FAIRTIN
		FLUX CONTENT	HALOGENIDE CONTENT	NO-CLEAN	J-STD-004 / J-STD-004C	S-Sn60Pb40	S-Sn60Pb39Cu1	S-Sn63Pb37	S-Sn62Pb36Ag2	S-Pb93Sn5Ag2	FLOWTIN TSC Sn95.5Ag3.8Cu0.7 + FLOWTIN	FLOWTIN TSC305 Sn96.5Ag3.0Cu0.5 + FLOWTIN	FLOWTIN TSC0307 Sn99Ag0.3Cu0.7 + FLOWTIN	FLOWTIN TC Sn99.3Cu0.7 + FLOWTIN	ECOLOY TS S-Sn96Ag4	ECOLOY TSC S-Sn95Ag4Cu1	ECOLOY TSC305 S-Sn96Ag3Cu1	ECOLOY TSC0307 S-Sn98Cu1Ag	ECOLOY TC S-Sn99Cu1	ECOLOY TC300 S-Sn97Cu3	SN100C™ Sn99.3Cu0.7+NiGe	
		MELTING RANGE				183 – 190°C	183 – 190°C	183°C	179°C	296 – 301°C	217°C	217 – 222°C	217 – 227°C	227°C	221°C	217°C	217 – 220°C	217 – 227°C	227°C	227 – 310°C	227°C	
CONTAINING HALOGENIDES	Trilence 2708	2.7%	0.8%	●	REM1						●		●									
	Trilence 3505	3.5%	0.5%	●	REL1						●		●									
	Kristall 505	3.0%	0.35%	●	REM1	●																
	Kristall 605	2.5%	0.2%	●	REL1						●		●									●
	Kristall 611	2.5%	0.7%	●	REM1						●		●								●	●
	HS10	2.5%	0.6%	●	ROM1	●	●	●	●	●					●	●	●		●	●		
	2630	2.0 / 2.2%	0.9%	●	ROM1		●									●			●			
	Alu 1	3.5%	0.45%	●	REM1														●			
HALOGENIDE FREE	HF32 SMD	1.0%	0.0%	●	ROL0	●			●													
	Kristall 400	2.2%	0.0%	●	REL0	●			●		●		●	●		●	●		●		●	
	Kristall 600	2.5%	0.0%	●	REL0						●		●								●	●
	HF32	3.5%	0.0%	●	ROL0	●	●		●						●				●			
	Trilence 3500	3.5%	0.0%	●	REL0						●		●									
ORGANIC	S321	2.0%	>5.0%		ORH1	●													●			
	WS2413	2.4%	1.3%		ORH1														●			
	Solid					●		●			●	●	●	●	●	●	●	●	●	●	●	

- (1) 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.
- (2) All ultra pure, lead-free standard alloys are designated as Ecoloy.

Additional flux / alloy combinations are also possible, partially on a production-related minimum order quantity – please feel free to contact us!

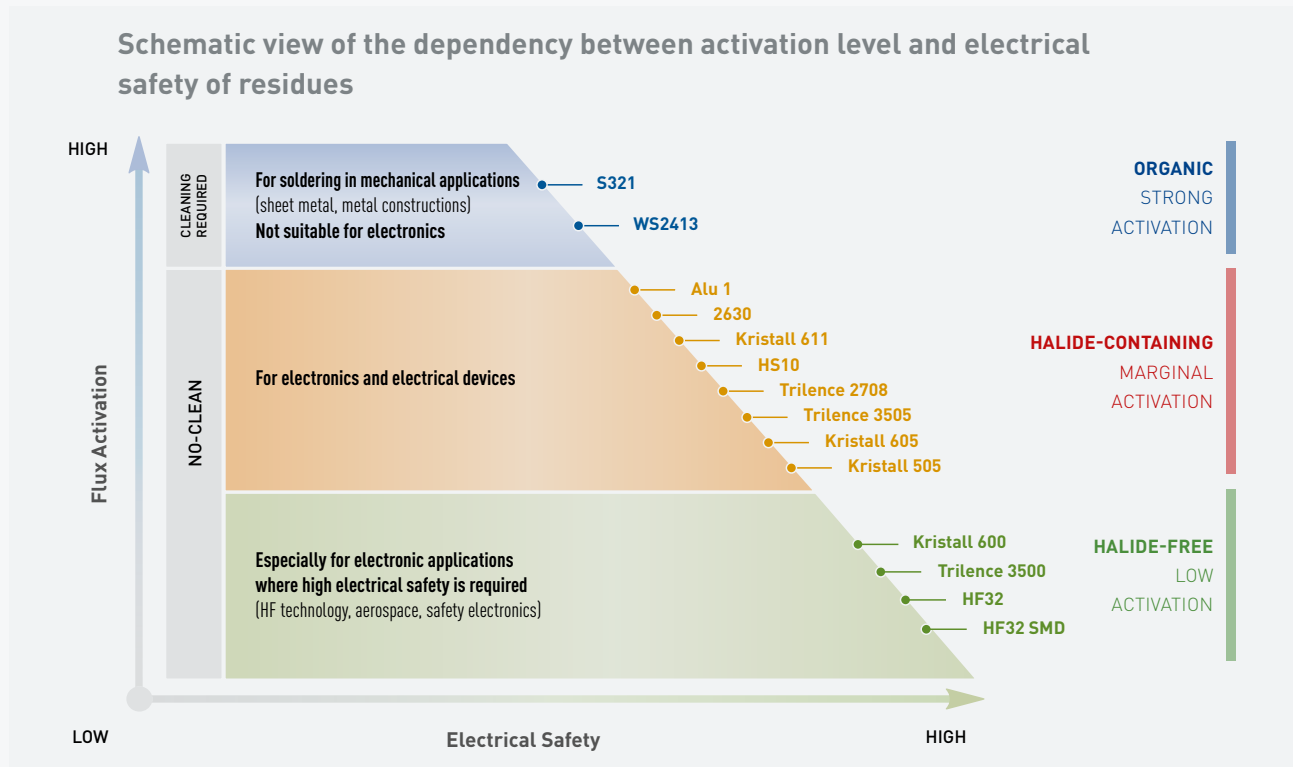
Flux Classification according to J-STD 004C

INGREDIENTS IN FLUXES		ACTIVITY	MAX % HALOGENIDES	CLASSIFICATION	FULL DESIGNATION
 RO ROSIN	Low	<0.05%	L0	ROL0	
	Low	≥0.05 and <0.5%	L1	ROL1	
	Moderate	<0.05%	M0	ROM0	
	Moderate	≥0.05 and <2.0%	M1	ROM1	
	High	<0.05%	H0	ROH0	
	High	≥2%	H1	ROH1	
 RE RESIN	Low	<0.05%	L0	REL0	
	Low	≥0.05 and <0.5%	L1	REL1	
	Moderate	<0.05%	M0	REM0	
	Moderate	≥0.05 and <2.0%	M1	REM1	
	High	<0.05%	H0	REH0	
	High	≥2%	H1	REH1	
 OR ORGANIC	Low	<0.05%	L0	ORL0	
	Low	≥0.05 and <0.5%	L1	ORL1	
	Moderate	<0.05%	M0	ORM0	
	Moderate	≥0.05 and <2.0%	M1	ORM1	
	High	<0.05%	H0	ORH0	
	High	≥2%	H1	ORH1	
 IN INORGANIC	Low	<0.05%	L0	INL0	
	Low	≥0.05 and <0.5%	L1	INL1	
	Moderate	<0.05%	M0	INM0	
	Moderate	≥0.05 and <2.0%	M1	INM1	
	High	<0.05%	H0	INH0	
	High	≥2%	H1	INH1	

Flux Classification according to J-STD-004C

Flux Classification	L0	L1	M0	M1	H0	H1
Quantitative Halide Content (CL & BR)	< 0,05 %	≥ 0,05 and < 0,5 %	< 0,05 %	≥ 0,05 and < 2,0 %	< 0,05 %	≥ 2,0 %
Copper Mirror Test	No signs of breakthrough	No signs of breakthrough	Breakthrough in maximum 50% of the area	Breakthrough in maximum 50% of the area	Breakthrough in more than 50% of the area	Breakthrough in more than 50% of the area
Flux Corrosion	No signs of corrosion	No signs of corrosion	Minor signs of corrosion	Minor signs of corrosion	Major corrosion can be expected	Major corrosion can be expected
Conditions for passing the 100MΩ-SIR-test criteria	Not cleaned	Not cleaned	Cleaned or not cleaned	Cleaned or not cleaned	Cleaned	Cleaned

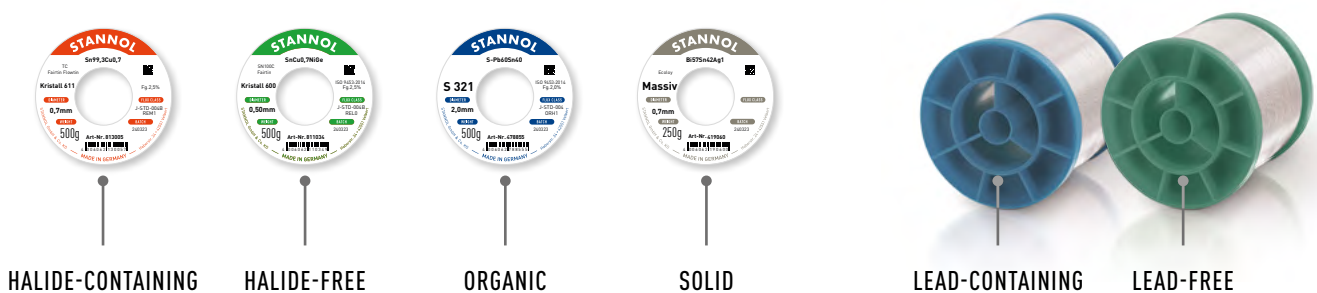
Activation Matrix



This illustration shows the relation between the flux activation and the electrical safety of the flux residues present on the assembly after the soldering process. The weaker the flux activation can be selected in the Stannol product selection, the higher the electrical safety of the flux residues can be expected after the soldering process. For example, the flux Kristall 611 with activated flux content achieves good electrical safety after the soldering process – as a No-Clean flux even without subsequent cleaning.

The Stannol Colour Code

Stannol uses a unique colour code for easy differentiation between the different groups of solder wires. The colour code is based on two parts: The first part is the colour of the reel, the second part is the colour on the label. This ensures an easy error prevention in mixed manufacturing areas.





Recycling and Disposal

Waste solders and solder dross still contain valuable metals that can be recycled. In addition, every production company that processes solders is legally required to dispose of the resulting waste products properly and in accordance with applicable waste management regulations.



The law has stipulated the following requirements for disposal:

- The waste must be reported to the designated authority.
- The production company is obliged to keep a record of the waste disposal.
- The disposal documents must be submitted to the designated authority.
- A transport permit must be obtained for each transport of the above-mentioned waste products.

Stannol takes care of these tasks for you. We handle the complete logistics: from transporting the waste products to dealing with the authorities and professional disposal. We are also happy to provide you with the appropriate transport containers free of charge.

In addition to disposal, we also offer the option of reworking your solder waste according to your own specifications.



We report the Product Carbon Footprint (PCF)!

The Product Carbon Footprint (PCF) shows the greenhouse gas emissions attributed to a product within defined system boundaries. It helps companies and consumers better assess a product's climate impact and make informed decisions.

Environmentally Sound Disposal and Reprocessing

Disposal Procedure

We dispose of your waste products and issue a takeover certificate. After analysis in our laboratory and melting down, you will receive the financial compensation via our scrap metal invoice according to the daily prices of the London Metal Exchange.

Reprocessing Procedure

We rework your solder waste into customer-specific alloys (calculating the reworking costs and deducting the melting loss).

Please note:

Melting losses must always be expected during both disposal and reworking. The amount of these losses depends on many factors and cannot be determined in advance.





Fluxes

Fluxes are used in soft soldering to remove oxides and other impurities from components and PCBs. Only then a reliable solder joint can be achieved.



The selection of the right flux for wave and selective soldering processes in electronics manufacturing is influenced by various factors. What is important in one manufacturing environment plays only a subordinate

role in another. Our fluxes are just as diverse as our customers' requirements. Whether they are water-based or classic solvent-based fluxes, whether they may contain resins or whether certain substances cannot be used due to certain material compatibilities – the range of reliable Stannol fluxes

has always grown with the current requirements since 1879. Here, we introduce the most important products from our flux range. We would be pleased to present other special fluxes from our product line in a personal discussion.

Our Stannol product selector also provides you with a product overview of our most important fluxes. In addition, you have the option of narrowing down the product selection according to various criteria.

greenconnect Fluxes

Stannol offers a range of fluxes in which fossil-based raw materials are partially replaced. Depending on the product, bioethanol is used instead of conventional ethanol, or water instead of isopropyl alcohol (IPA).

The halogen-free activated No-Clean flux **EF350 Bio** guarantees excellent wetting properties on different surfaces (for example OSP, Ni/Au, HAL, chem. Sn and chem. Ag) with both lead-free and lead-containing solder alloys. EF350 Bio is uni-

versally applicable – it can be used for wave soldering as well as selective soldering, it is also well suited for use in spray fluxers.

The use of bioethanol can help reduce CO₂ emissions compared with equivalent fluxes based on fossil-derived ethanol. Important for our customers: Extensive tests have proven that a 1:1 exchange of the flux is possible without changing the process parameters.

Water-based Fluxes

Stannol's water-based fluxes can help reduce solvent-related CO₂ emissions compared with alcohol-based fluxes. **WF300S** is a halogen-free, low-solids flux designed primarily for consumer electronics manufactured in normal or nitrogen atmospheres. WF300S has been specifically optimised to reduce solder beads between adjacent connections. The innovative flux also works effectively on poorly solderable surfaces, such as oxidised copper.

WF130 and **WF131** are developments of water-based ORLO fluxes. Both deliver perfect soldering results and leave very low amounts of electrically harmless residues in combination

with an extremely low corrosion potential. These two water-based fluxes are true halogen-free fluxes and have a VOC content of less than 1 percent. Due to the very low corrosive potential, both can be classified as L0, which is not often possible with water-based fluxes. The main difference of WF131 is a further reduction in residue levels, with the minor trade-off of a slightly smaller process window.

The introduction of water-based fluxes often requires a comprehensive assessment of the current equipment technology and application. Our team will be happy to support you in this and provide competent advice on site.

Bio-Flux for Selective Soldering

The soldering flux **SF1000 Bio** has been specially developed for selective soldering of electronic assemblies. The low solids content in combination with specially adjusted halogen-free activation results in excellent wettability of a wide variety of surfaces (e.g. OSP, Ni/Au, HAL), even with lead-free solder alloys. This flux can also be used for other soldering processes such as wave and dip soldering. Solvent-related CO₂ emissions can be reduced compared with equivalent alcohol-based fluxes.



All common low-solids No-Clean fluxes from Stannol can be applied reproducibly in very small quantities using all standard spraying methods..

Solar Fluxes

The No-Clean fluxes **EF160 Bio PV** and **EF180 Bio PV** have been specially developed for use in the photovoltaic module industry and meet all of its requirements. The fluxes are halogen- and resin-free as well as low in solids, which makes them particularly suitable for solar module production. EF180 Bio PV has a slightly higher solids content in comparison and a stronger activation than EF160 Bio PV.

Both fluxes provide equally good solderability in module assembly processes for soldering by IR and convection. They can be applied and soldered by hand to the ribbon as well as in tabber/stringer soldering systems with spray fluxers. The precisely formulated activator systems leave no visible residues after soldering. The innovative fluxes are also part of our greenconnect series: They have a 95 percent bio-based content according to DIN EN 16785-2. The use of bioethanol can help reduce CO₂ emissions compared with conventional ethanol derived from fossil raw materials.

The greenconnect flux EasyFlux **EF200 Bio PV** has been specially developed for use on solar cells and other sensitive surfaces. Due to the halogen-free activation, an excellent wetting ability is achieved and it also leaves hardly any visible residue. This makes EF200 Bio PV the ideal choice for applications where absolute surface cleanliness is required. According to DIN-EN 16785-2, it has a 98 percent bio-based content.

Stannol's solder flux **X33-08i PV** has been specially developed for use in the photovoltaic industry. The flux relies on a complex alcohol-based composition that is free of rosin and halogens and also has a low solids content. Due to its excellent wettability on solar cells, X33-08i PV is an ideal choice for companies in the photovoltaic industry looking for a high-quality and reliable solder flux.

Electronics Fluxes

The electronics manufacturing industry places high demands on modern flux systems. The products of the **EF series** meet these requirements, not least because of their great variety and wide range of applications. A large part of the series, for example, has been specially developed for application with current spray flux systems.

Activations for every application

The EF fluxes are available with different activation levels. This means that the optimum activation can be selected for each individual process – depending on solderability and reliability requirements. For a full-tunnel nitrogen system, for example, a very low activation can be considered. For soldering on older systems and on surfaces that are difficult to solder, a higher activation should be chosen.

High to very high electrical safety

The reliability of the No-Clean flux and its residues after soldering also plays an important role in the selection of the right flux. Thus, within the completely halogen-free EF series, fluxes can be found both with and without resin or with the smallest amounts of activator up to very broadband fluxes. By

this, all requirements of current electronics production can be covered. The EF fluxes have in common that a high to very high electrical safety can be achieved with varying small residue quantities on the soldered PCBs.

Our electronics fluxes in comparison

In direct comparison to flux **EF330**, flux **EF350** increases the insulation resistance of flux residues due to a low addition of resins and at the same time reduces the formation of solder beads. The fluxes of the **EF200** series are more weakly activated and show their strengths in the area of full-tunnel nitrogen systems, as they leave less residues on the PCBs due to their lower solid content. The flux **EF270F** is the optimised variant for application by foam fluxer. It is characterised above all by a fine-pored foam crown.

When developing the EF250 flux, the most important criterion was to minimise contamination by the flux. The use of the EF250 not only reduces the cleaning effort of the system, but also the residues on the assembly itself – while at the same time ensuring safe wetting and complying with common test criteria for electrical safety.

Special Flux

The halogen-free No-Clean flux **AK-1 Bio** was specially developed for cable tinning, tinning on component connections, soldering on copper or copper-passivated surfaces. It is based on bio-ethanol and complements our greenconnect series.

The tinning of enamelled copper wires can be carried out safely with the flux 500-17/1. The flux, which was specially deve-

loped for dip soldering processes, guarantees through its particularly high solid content that even at high dip soldering bath temperatures there is still sufficient active flux on the component to be soldered. Even if parts of the flux are lost due to the high temperatures of the solder bath, a good soldering result is achieved.

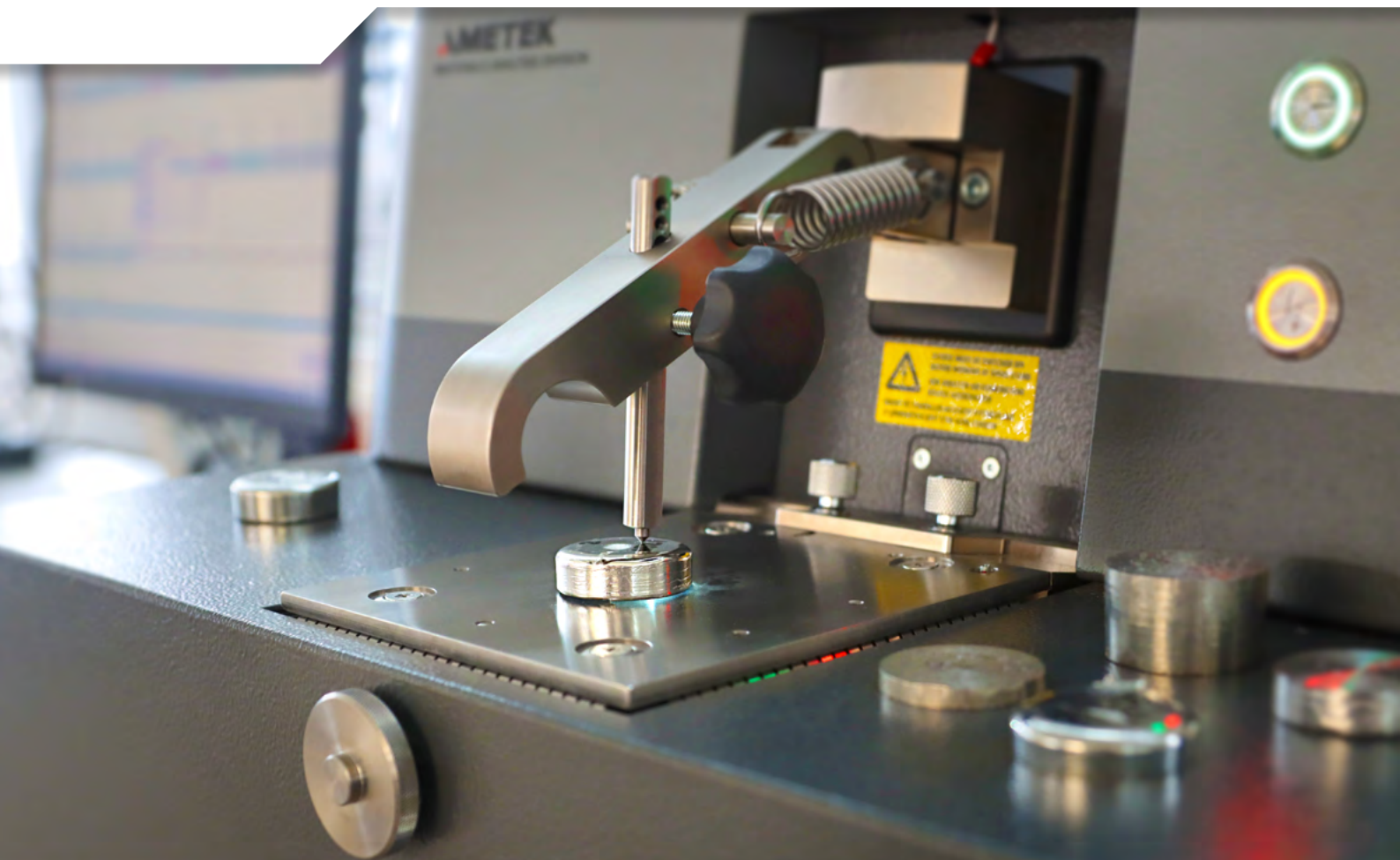
Semi-aqueous Fluxes

Often, water-based fluxes cannot be processed satisfactorily on older soldering systems because the preheating is too short or too weak. In order to still significantly reduce the proportion of VOC emissions, fluxes can be used whose solvent is a mixture of water and alcohols. This group of fluxes is characterised by lower flash points and a reduction in VOC content. They are also resin- and halogen-free.

The semi-aqueous flux **HW139** with 2.5 wt.% solids has already proven itself for many years in numerous soldering tasks. It is also easy to apply by means of a spray fluxer. As a newer development, the **HW240** ensures good soldering results with the same high soldering quality and wetting ability. At the same time, the residue quantities are greatly reduced due to a unique activator combination.

	FLUX	DIN EN ISO 9454-2	J-STD-004 J-STD-004C	APPLICATION METHOD *	VOC CONTENT	SOLID CONTENT %	APPLICATION	GREEN- CONNECT
SOLAR FLUX	EF160 Bio PV	2.2.3.A	ORL0	S, D	High	1.6	Stringer, Wave, Selective	•
	EF180 Bio PV	2.2.3.A	ORL0	S, D	High	1.8	Stringer, Wave, Selective	•
	EF200 Bio PV	2.2.3.A	ORL0	S, D	High	2.0	Stringer, Wave, Selective	•
	X33-08i PV	2.2.3.A	ORL0	S, D	High	2.0	Stringer, Wave, Selective	•
EF-SERIES	EF200	2.2.3.A	ORL0	S	High	2.0	Wave, Selective	•
	EF210	2.2.3.A	ORL0	S	High	2.1	Wave, Selective	•
	EF250	2.2.3.A	ORL0	S	High	2.5	Wave, Selective	•
	EF270	2.2.3.A	ORL0	S	High	2.7	Wave, Selective	•
	EF270F	2.2.3.A	ORL0	S, F	High	2.7	Wave, Selective	•
	EF330	2.2.3.A	ORL0	S	High	3.3	Wave, Selective	•
	EF350	2.2.3.A	ORL0	S	High	3.5	Wave, Selective	•
	EF350 Bio	2.2.3.A	ORL0	S	High	3.5	Wave, Selective	•
WATER BASED	WF130	2.1.3.A	ORL0	S	Free	3.0	Wave, Selective	•
	WF131	2.1.3.A	ORL0	S	Free	2.6	Wave, Selective	•
	WF300F	2.1.3.A	ORM0	F	Free	4.4	Wave	•
	WF300S	2.1.3.A	ORM0	S	Free	4.4	Wave	•
SPECIAL FLUX	AK-1 Bio	2.2.3.A	ORL0	S, D	High	5.0	Dipping	•
	SF1000 Bio	2.2.3.A	ORL0	S	High	2.5	Selective, Wave	•
	500-6B	1.1.3.A	ROL0	S, F, D, B	High	6.0	Wave, Selective	•
	500-17-1	1.1.3.A	ROL0	S, F, D, B	High	15.0	Dipping	•
	500-3431BF	2.2.3.A	ORM0	S	High	4.4	Wave	•
	900-7-1H	2.1.2.A	ORM1	S	High	1.7	Dipping	•
	HW139	2.2.3.A	ORM0	S	Medium	2.5	Wave, Selective	•
	HW240	2.2.3.A	ORL0	S, F	Medium	2.4	Wave, Selective	•
	L2	2.2.3.A	ORL0	S, F	High	2.0	Wave, Selective	•
	P770	2.2.3.A	ORL0	S, F	High	2.3	Wave, Selective	•
	P981	2.2.3.A	ORL0	S, F	High	2.7	Wave, Selective	•

*Application methods: S spraying/F foaming/D dipping/B brushing



Stannol Test and Analysis Service

We offer a comprehensive test and analysis service through our in-house laboratory. This includes not only careful execution of the tests, but also detailed evaluation and documentation of the results. If you need a service that is not listed, please contact us – we will be happy to provide you with an individual offer.



If you require a service that is not listed, please contact us – we will be happy to provide you with a customised offer.

Further information can be found on our website. Sample forms and other materials are also available for download.

Solder Bath and Metal Analyses

Would you like to have your solder bath routinely checked? Or do you have the impression that your solder bath is contaminated or the soldering results have deteriorated? Our solder bath analysis provides you with reliable information about the quality of your solder bath: Our laboratory is equipped with modern radio spectrometers that analyse your solder bath

samples and check them for composition or possible impurities. For our customers, we carry out process-related solder bath analyses. For non-customers who would like to use our service, this is subject to a charge. Our experienced team will also be happy to help you define specific intervention limits.

Wetting Tests and Solderability Tests

Poor solderability is one of the most common causes of defects in a soldering process. Therefore, it makes sense to test the solderability of components or PCBs in advance.

We carry out solderability tests on SMD components, wired components, printed circuit boards and substrates for you

according to the common standards of IEC and IPC. For this purpose we use the wetting balances MUST System 3 from GEN3 Systems. This allows the wetting process to be quantified. The wetting forces are recorded and the test process is documented on video.

Inspection of Printed Circuit Boards and Assemblies for Ionic Contamination

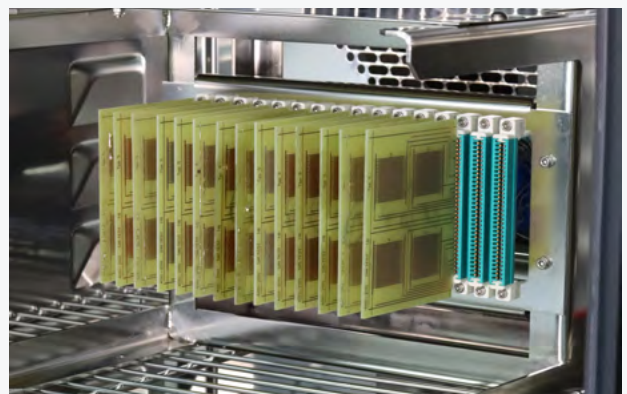
Electrically conductive contaminations on printed circuit boards and assemblies are a major problem – especially in the context of the increasing miniaturisation of all components. With the help of our Contaminometers CM11 and CM33 from

GEN3 Systems, we can reliably check your PCBs and assemblies for ionic contamination. Testing is carried out in accordance with IPC-TM-650 2.3.25 (ROSE Testing) and IEC 61189-5-504 (PICT Testing).

Surface Insulation Resistance Testing (SIR Test)

Our laboratory offers you the opportunity to have professional SIR tests carried out. These tests provide valuable insights into the electrochemical behaviour of your process materials – especially around the compatibility of different solders and coatings used in a soldering process.

Our state-of-the-art equipment, such as the latest generation GEN3 AutoSIR2+ and the climate chamber from weisstech-nik®, ensures precise and reliable measurements that are performed in accordance with current standards. With the AutoSIR2+, we are able to realise measurement setups with up to 128 channels.



Stannol offers to perform SIR tests according to current standards.



Solder Bars

Solder bars are used as base and refill solders in a wide variety of alloys in wave and selective soldering systems within the electronics industry. Stannol solders for electronics are manufactured exclusively from first-melt metals or high-purity secondary raw materials. For this purpose, we only use tin with a purity content of at least 99.9 percent.



Stannol produces many different high-purity electronic solders for lead-containing and lead-free applications. These are available either as standard solders or as solders with special properties, such as reduced dross formation or optimised alloying properties. The continuous development of our solders is a top priority at Stannol.

Here, we introduce some of these optimised alloys, as well as the most important solders for use in electronics. We would be pleased to present our complete product overview as well as possible special alloys to you in a personal discussion.

Our Stannol product selector also provides you with a product overview of our most important solder bars. In addition, you have the option of narrowing down the product selection according to various criteria.

Ecology – Lead-free Solders from Stannol

Lead-free solders based on pure tin with the alloying additions of silver and/or copper are suitable for all lead-free applications in electronics production. For electronics manufacturing, Ecology **TSC alloys** (Tin, Silver, Copper) have proven to be a reliable lead-free option. TSC alloys are available in various types and differ in the content of tin, silver and copper. The eutectic alloy TSC with Sn95.5Ag3.8Cu0.7 is particularly noteworthy here due to its low melting point of 217 °C and its excellent wetting properties.

The alloy **TSC305** with Sn96.5Ag3.0Cu0.5 has also established itself as an industrial standard. It has a lower silver content and ensures a longer service life due to its low copper starting value.

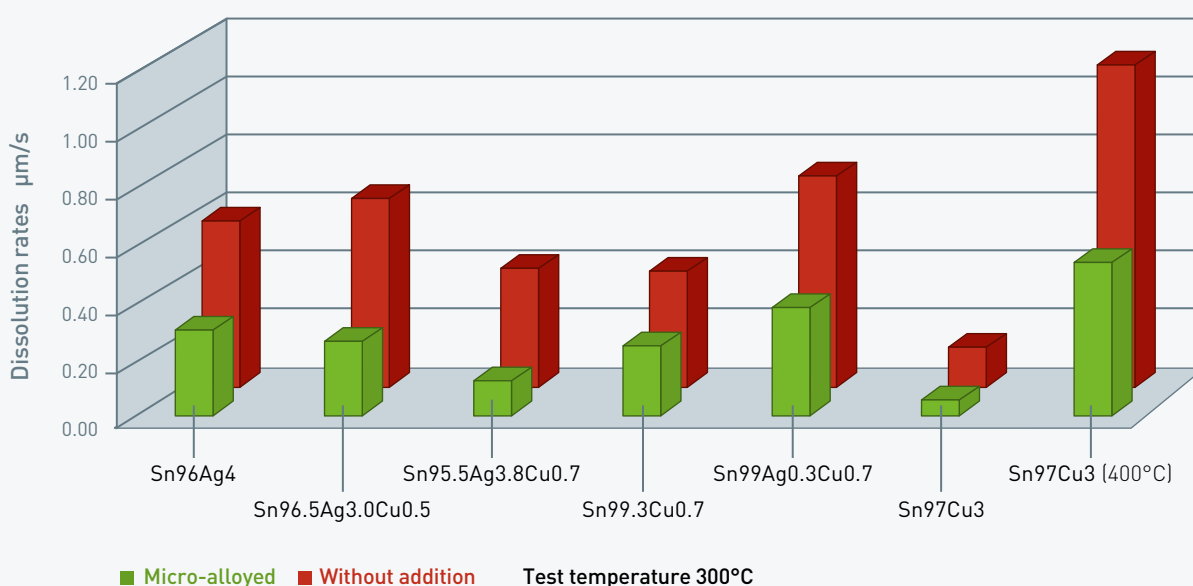
Even more economical is the **TSC0307** alloy, which contains only 0.3 percent silver and 0.7 percent copper with 99 percent tin. Here, up to 90 percent of cost-driving silver can be saved – with almost the same processing properties.

The **TC alloy** (S-Sn99.3Cu0.7) is the most cost-effective silver-free alternative as a lead-free solder. The product advantages result primarily from the lack of silver, a defined melting point of 227 °C and good wetting properties.

Flowtin – Stannol's Patented Innovation

In our research and development department we have created the micro-alloyed solders of the **Flowtin series**. These are particularly suitable for production areas in which the lowest possible dissolution of copper and iron plays an essential role for a stable process. Due to low additions of Co and Ni, these

solders have a significantly lower copper and iron solubility. The finer particle structure of the flowtin solders and the resulting optimised shine of the solder joint are also worth mentioning – a further advantage compared to lead-free standard solders. The flowtin alloys are patented by Stannol.



Different dissolution rates in comparison

Nihon Superior Alloys



Precision for demanding soldering processes. Stannol is an official licensee of the Nihon Superior alloys SN100C®, SN100Ce®, SN100CV® and SN100CVe®. Germanium reduces dross formation and can therefore help lower material consumption and the associated environmental impacts. The alloys are silver-free and lead-free and are suitable for use in both wave and selective soldering systems.

SN100C® und SN100Ce®

Process-stable tin-copper-nickel alloys

The SN100C® alloy (SnCu0.7Ni) uses nickel as a micro-alloying element to reduce copper dissolution in the solder bath, enabling stable and reproducible process control. Germanium significantly reduces dross formation, thereby helping to conserve resources and reduce environmental impact. At the same time, nickel in combination with tin and copper promotes a finer intermetallic structure, which increases the mechanical stability of the solder joints. SN100C® also features very good wetting behaviour and reduced bridging. The alloy is complemented by SN100Ce®, the corresponding top-up alloy for process stabilization.

SN100CV® and SN100CVe®

High-performance alloys with enhanced fatigue strength

The bismuth-doped SN100CV® alloy (SnBi1.5Cu0.7Ni) is based on a nickel-stabilised tin-copper solder alloy and also contains germanium to significantly reduce dross formation. Owing to its bismuth content, SN100CV® achieves approximately 30 percent higher fatigue strength than SN100C®, thereby even exceeding the performance of SAC305. At the same time, the already low copper dissolution of SN100C® is reduced even further. For the long-term stabilisation of the solder bath, SN100CVe® is available as the matching top-up alloy.

The Nihon Superior alloys are available from Stannol in the following delivery forms:

- Wire (solid and flux-cored)
- Triangular bars
- 1 kg bars
- Bars with suspension lugs
- Pellets (approx. Ø 5 mm \times 30-35 mm)

Fairtin-Version

All the alloys available in our range of rod and ingot solders are also available in a Fairtin version.



Composition of Solders

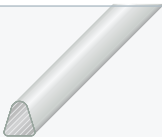
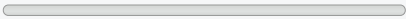
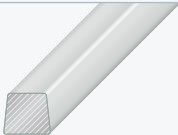
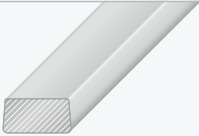
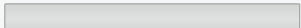
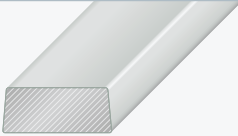
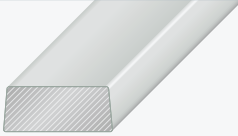
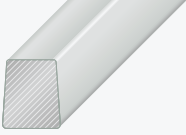
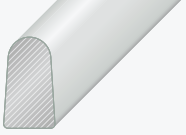
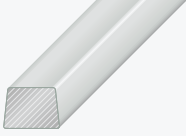
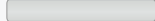
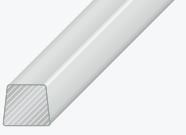
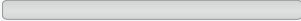
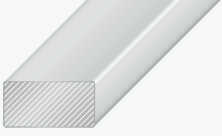
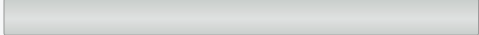
ALLOY NAME	ALLOY NUMBER ²	ALLOY COMPOSITION	INTERNAL NAME Tin Silver Copper Bismuth	ROHS	MELTING POINT MELTING RANGE (approximate values)	FAIRTIN
Sn99.9 ¹	---	Sn99.9	ECOLOY T	lead-free	232°C	•
S-Sn99.3Cu0.7 ²	401	Sn99.3Cu0.7	ECOLOY TC	lead-free	227°C	•
S-Sn97Cu3 ²	402	Sn97Cu3	ECOLOY TC300	lead-free	227–310°C	•
S-Sn96.3Ag3.7 ²	701	Sn96.3Ag3.7	ECOLOY TS	lead-free	221°C	•
S-Sn95.5Ag3.8Cu0.7 ²	713	Sn95.5Ag3.8Cu0.7	ECOLOY TSC	lead-free	217°C	•
S-Sn96.5Ag3.0Cu0.5 ²	711	Sn96.5Ag3Cu0.5	ECOLOY TSC305	lead-free	217–220°C	•
Sn97.1Ag2.6Cu0.3 ³	---	Sn97.1Ag2.6Cu0.3	ECOLOY TSC263	lead-free	217–224°C	•
S-Sn99Cu0.7Ag0.3 ²	501	Sn99Cu0.7Ag0.3	ECOLOY TSC0307	lead-free	217–227°C	•
S-Bi58Sn42 ²	301	Bi58Sn42	ECOLOY TB	lead-free	139°C	•
Bi57Sn42Ag1 ³	---	Bi57Sn42Ag1	ECOLOY TBS	lead-free	139–142°C	•
Flowtin Sn99.3Cu0.7 ⁴	---	Sn99.3Cu0.7 + FLOWTIN	FLOWTIN TC	lead-free	227°C	•
Flowtin Sn99.6Cu0.4 ⁴	---	SN99.6Cu0.4 + FLOWTIN	FLOWTIN TC04	lead-free	227°C	•
Flowtin Sn97Cu3 ⁴	---	Sn97Cu3 + FLOWTIN	FLOWTIN TC300	lead-free	227–310°C	•
Flowtin Sn96Ag4 ⁴	---	Sn96Ag4 + FLOWTIN	FLOWTIN TS	lead-free	221°C	•
Flowtin Sn95.5Ag3.8Cu0.7 ⁴	---	Sn95.5Ag3.8Cu0.7 + FLOWTIN	FLOWTIN TSC	lead-free	217°C	•
FlowtinSn96.5Ag3.0Cu0.5 ⁴	---	Sn96.5Ag3.0Cu0.5 + FLOWTIN	FLOWTIN TSC305	lead-free	217–220°C	•
Flowtin Sn97.1Ag2.6Cu0.3 ⁴	---	Sn97.1Ag2.6Cu0.3 + FLOWTIN	FLOWTIN TSC263	lead-free	217–224°C	•
Flowtin Sn98.5Ag0.8Cu0.7 ⁴	---	SN98.5Ag0.8Cu0.7 + FLOWTIN	FLOWTIN TSC0807	lead-free	217–226°C	•
FlowtinSn99Ag0.3Cu0.7 ⁴	---	Sn99Ag0.3Cu0.7 + FLOWTIN	FLOWTIN TSC0307	lead-free	217–227°C	•
Flowtin + Sn99.3Cu0.7 ⁵	---	Sn99.3Cu0.7 + FLOWTIN+	FLOWTIN+ TC	lead-free	227°C	•
TSCX0307 ³	---	Sn99Ag0.3Cu0.7+X	TSCX0307	lead-free	217–227°C	•
SN100C ⁶	---	Sn99.3Cu0.7NiGe	SN100C	lead-free	227°C	•
SN100Ce ⁶	---	Sn99,9NiGe	SN100Ce	lead-free	227–232°C	•
SN100CV ⁶	---	Sn97,8Bi1,5Cu0,7	SN100CV	lead-free	227°C	•
SN100Cve ⁶	---	Sn98,5Bi1,5	SN100Cve	lead-free	227–232°C	•
SN100CS ⁶	---	Sn99,3Cu0,7NiGe	SN100CS	lead-free	227°C	•
SN100CeS ⁶	---	Sn99,9NiGe	SN100CeS	lead-free	227–232°C	•
SN100CS+ ⁶	---	Sn99,3Cu0,7NiGe	SN100CS+	lead-free	227 °C	•
SN100CeS+ ⁶	---	Sn99,9NiGe	SN100CeS+	lead-free	227–232 °C	•
S-Sn63Pb37E ³	102 ³	Sn63Pb37	STRATOLOY SN63	lead-containing	183°C	•
Sn63Pb37 ³	---	Sn63Pb37P	WSL3 SN63	lead-containing	179°C	•
S-Sn60Pb40 ²	103	Sn60Pb40	Sn60	lead-containing	183–190°C	•
S-Pb93Sn5Ag2 ²	191	Pb93Sn5Ag2	HMP (high melting point)	lead-containing	296–301°C	•

- ¹ According to DIN EN 61190-1-3
 ² According to ISO EN 9453
 ³ According to ISO EN 9453 and internal specification based on ISO EN 9453
 ⁴ Analogous to ISO EN 9453 or internal specification + Flowtin addition
 ⁵ Analogous to ISO EN 9453 or internal specification + Flowtin and desoxidation addition

- ⁶ Variations in the SN100C™ solders are mainly based on different Ni and Ge contents.
 Further details can be found in the technical datasheet or you may ask our team of application engineers about the best option for your application.

All the above mentioned lead-free alloys are available as copper-free versions, too. The copper-free versions can be required to maintain the copper content or reduce higher copper contents during the usage of the solder in the soldering equipment. The above listed alloys represent only a small selection; other alloys are available on request. Some alloys are subject to production-related MOQs.

Available Delivery Forms of Stannol Solder

TRIANGULAR BAR ⁽¹⁾ Dimensions (LxWxH) 443 x 11.5 x 14.5 mm approx. 0.36 kg bei Sn99.3Cu0.7 [2]		
FORMBLOCK 330 ⁽¹⁾ (kg-Stange) Dimensions (LxWxH) 328 x 20 x 20 mm approx. 1 kg bei Sn63Pb37 [2]		
FORMBLOCK 325 E Dimensions (LxWxH) 325 x 30 x 15 mm approx. 0.88 kg bei SN100C® [2]		
FORMBLOCK NR. 7 ⁽¹⁾ Dimensions (LxWxH) 540 x 48 x 20 mm approx. 3.7 kg bei Sn63Pb37 [2]		
FORMBLOCK NR. 8 Dimensions (LxWxH) 540 x 48 x 20 mm approx. 3.7 kg bei Sn63Pb37 [2]		
FORMBLOCK 300 (Poka Yoke) Dimensions (LxWxH) 300 x 25 x 28.5 mm approx. 1.6 kg bei Sn63Pb37 [2]		
FORMBLOCK 300 LF (Poka Yoke) Dimensions (LxWxH) 300 x 22 x 40 mm approx. 1.6 kg bei Sn99.3Cu0.7 [2]		
FORMBLOCK 160 E Dimensions (LxWxH) 164 x 24 x 20 mm approx. 0.54 kg bei Sn63Pb37 [2]		
FORMBLOCK 330 E Dimensions (LxWxH) 330 x 21 x 20 mm approx. 1 kg bei Sn96.5Ag3.5 [2]		
FORMBLOCK 523 E Dimensions (LxWxH) 523 x 40 x 20 mm approx. 3 kg bei Sn99.3Cu0.7 [2]		

Other sizes and delivery forms are available upon request. The dimensions specified in the catalogue may vary due to production techniques.

1 Preferred bar form / 2 Average weight of the specified alloy.



Heraeus

Partners

For many years, Stannol has relied on collaborating with professional and reliable partners. These partnerships complement our diverse and up-to-date range of products and services. In this way, we can always provide you with a product and service portfolio that meets your requirements.

GEN3 Systems

As a distributor of the British company GEN3 Systems, Stannol sells various process control systems exclusively for the German-speaking region, including solderability test systems, SIR test devices or systems for the determination of ionic impurities. We also offer a complete after-sales service for these

products – including maintenance, calibration, repair and spare parts. We will be happy to support you in selecting and using the system that is appropriate for you.

Heraeus

Since 2015, Stannol has been a competent and experienced service partner to our sales and development partner Heraeus. The decades of successful professionalism of both companies complement each other ideally through synergies and solutions in the fields of production and development. The focus of this partnership is on demanding applications in automotive and consumer electronics as well as semiconductor

applications. The highest possible quality and process stability are the most important criteria in the selection of materials and process-supplementary solutions. Our closely networked teams are looking forward to supporting you with their expertise and experience from the planning stage right through to implementation.

World of
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Do you already know our website
www.stannol.eco?

Learn more about our measures relating to raw material sourcing, energy use and recycling. Discover how we address environmental and social aspects in our products and operations.



SOLDER WIRES



FLUXES



SOLDER PASTES



ACCESSORIES



SOLDER BARS



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