



STANNOL



greenconnect

Our sustainable product line



responsible soldering products

greenconnect – the sustainable product line from Stannol

Stannol offers a complete product range called greenconnect, which focuses on the aspect of sustainability and fairness.

In the past, only the criteria of quality, price and delivery time were of importance, especially when purchasing tin. However, due to the strong demand for raw materials, working and living conditions in the mining areas are largely inhumane. The environment also suffers greatly from the uncontrolled and partly illegal mining of raw materials.

With our greenconnect products, we enable our customers to take a step further towards sustainable and ecological manufacturing.

The five areas of greenconnect

- **solder bars** (Fairtin)
- **solder wires** (Fairtin)
- **solder pastes** (based on metal powder produced from Fairtin)
- **fluxes** (based on renewable raw materials and/or water-based)
- **recycled packaging material** for all products (reels made of 100 percent recycle, packaging and filling materials made of recycled material such as paper)



FAIR to the environment



FAIR to employees



FAIR through transparency



As proof of your commitment, you will receive a personalised, batch-related certificate on demand.

“For solder from our greenconnect range, we use primary and secondary raw materials from companies that not only comply with international environmental standards, but also take wide-ranging protective measures for their employees and refrain from using child labour.”

(Marco Dörr, Managing Director of Stannol GmbH & Co. KG)

Fairtin solder – environmentally friendly, sustainable and fairly produced

The solder wires, solder pastes and solder bars from our greenconnect range all carry our Fairtin label. This means that primary tin from a guaranteed sustainable supply chain and from certified producers in emerging countries is processed for these products. Alternatively, solders made from high purity secondary raw materials sourced from European production are used. These materials meet the same high standards of quality, purity and workability as solders made from primary tin.

For Fairtin products, tin is sourced from producers that

- pay attention to the protection of the environment,
- respect international and national rights,
- fulfil their social responsibility for employees and local people – for example, by ensuring fair wages and adequate occupational health and safety measures,
- work against child labour and
- act transparently.

Flux – bio-ethanol instead of IPA

In our greenconnect bio-fluxes, the previous main ingredient isopropanol (IPA) is replaced by bio-ethanol. Bio-ethanol consists of renewable raw materials such as straw and can be produced completely without fossil fuels via a fermentation process. This results in a significantly better CO₂ balance.

No requalification necessary

The high quality standards of our products allow some greenconnect materials to be used in the respective manufacturing process without costly requalification.

Certificate

As proof of the use of our sustainable Fairtin products, customers receive a personalised, batch-related certificate on demand.



Our greenconnect products – solder wires

SOLDER WIRE – KRISTALL 600

Although mildly activated, **Kristall 600** solder wire ensures fast and good wetting on most surfaces. The flux contained is halide free and based on a synthetic resin matrix. Due to the high thermal stability, the flux is suitable for use with all lead-free alloys.

PRODUCT ADVANTAGES

- Fairtin solder
- No-Clean
- transparent, clear residues
- greatly reduced spitting
- high thermal resistance
- good wetting
- reduced health risks, as colophony-free
- REL0 classification

APPLICATION AREAS

Kristall 600 solder wire can be used for both hand and automated soldering in the field of electrical engineering and electronics. The flux residues are electrically safe and can remain on the solder joints. Kristall 600 is offered in the alloys Flowtin and SN100C™. Both alloys are gentle on the soldering tips, which considerably increases their service life.



SOLDER WIRES – KRISTALL 605 AND 611

Kristall 605 and **Kristall 611** are halogen-activated solder wires that open the process window in various places. Strongly reduced flux spitting in combination with good wetting behaviour on poorly solderable surfaces are the highlights of these innovative products.

PRODUCT ADVANTAGES

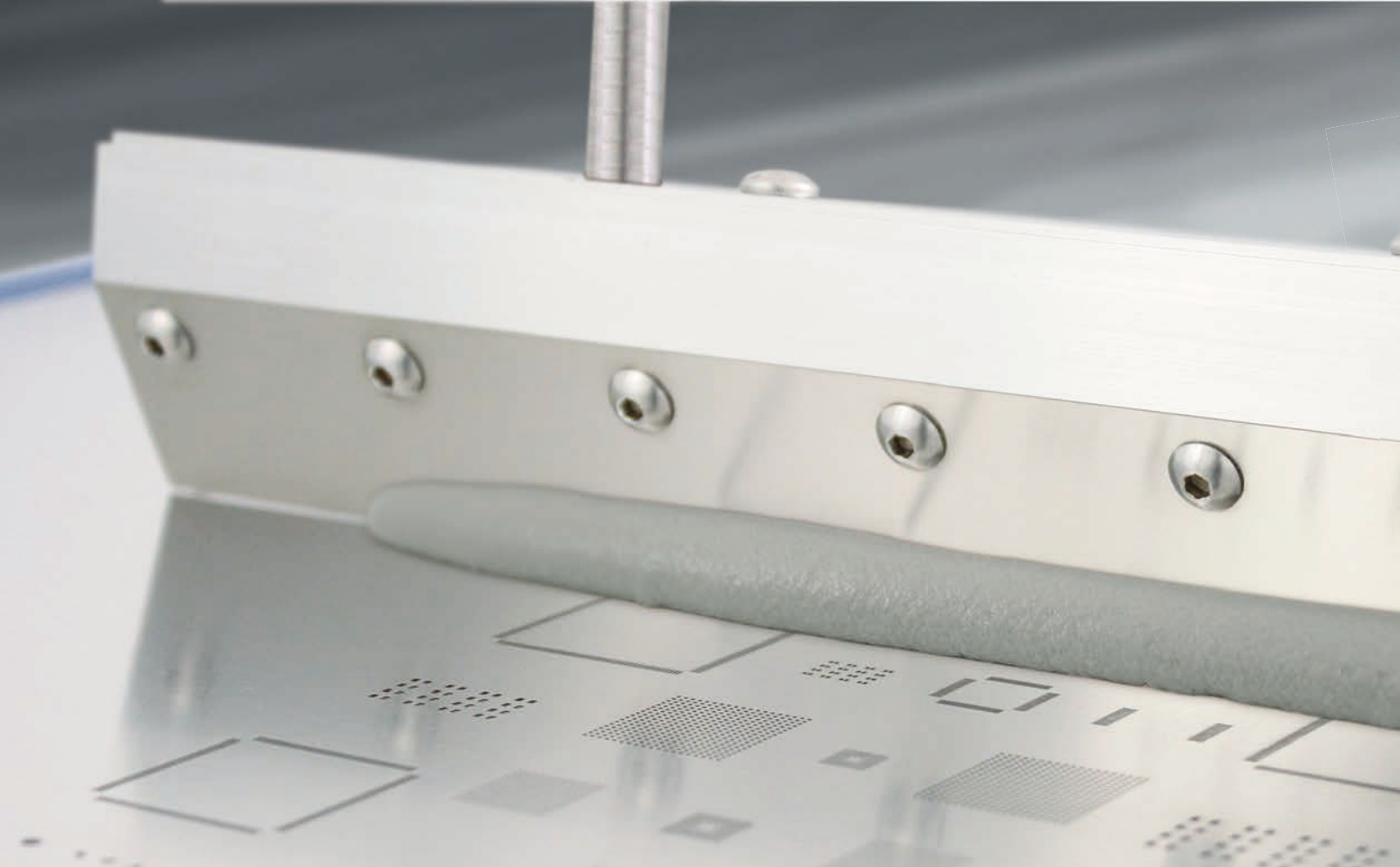
- Fairtin solder
- bright No-Clean residues
- low spitting
- very good wetting properties for fast soldering
- chemically modified resin that reduces health risks
- mild odour

APPLICATION AREAS

Developed for manual rework as well as for automated soldering equipment, Kristall 605 and Kristall 611 allow to cover the different production needs in modern electronics manufacturing. The flux contained meets the requirements of J-STD-004C standards. 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 significantly increases their service life.



The illustrated products are examples.
A large number of other greenconnect products are available on request.
Please contact us: info@stannol.de



Our greenconnect products – solder pastes

SOLDER PASTE – SP2200

Solder paste **SP2200** was developed for high-volume, lead-free SMD electronics production. It contains a highly active L0 No-Clean flux. With a special formula for excellent wetting, it meets the requirements for surfaces found in any serial production today. The small amount of residue left after the reflow process is bright, transparent, electrically safe and does not need to be removed.

PRODUCT ADVANTAGES

- solder powder made from Fairtin solder
- very good first print results after longer printer downtime
- reflow process under air or nitrogen possible
- long open time of the printed PCBs

APPLICATION AREAS

Solder paste SP2200 was developed for stencil printing. With TSC405, TSC305 and TSC0307 alloy as solder powder in classes 3 and 4, SP2200 can be used in all common open and closed printing systems.





SOLDER PASTE – SP6000

SP6000 solder paste was developed for use with alloy TSC305 (Sn96.5Ag3Cu0.5) as well as for cost-saving use with low silver content with alloy TSC105 (Sn98.5Ag1Cu0.5). The special feature: With SP6000, more than 85 percent of CO₂ emissions can be saved by using recycled solder compared to conventional solder pastes. The flux, which is classified as RELO, also convinces with an uncompromising wetting quality on all known lead-free PCBs in both air and nitrogen atmospheres. SP6000 leaves behind exceptionally little residues, which are also transparent and non-corrosive.

PRODUCT ADVANTAGES

- solder powder made from recycled solder
- more than 85 percent CO₂ savings
- very suitable for use with low silver content (TSC105)
- suitable for fine pitch up to 0.4 mm
- very good first print results after longer printer downtime
- reflow soldering process under air or nitrogen possible
- very good wetting on most surfaces
- J-STD-005 classification
- RoHS compliant

APPLICATION AREAS

Solder paste SP6000 was developed for stencil printing. With the TSC105 or TSC305 alloy as solder powder in particle size 3 (25 to 45 µm) and 4 (20 to 38 µm), solder paste SP6000 can be used in all common open and closed printing systems. It is also available as dispensable solder paste (SP6000D).





Our greenconnect products – fluxes

FLUX – EF350 BIO

The halogen-free activated No-Clean flux **EF350 Bio** guarantees an excellent wetting ability on different surfaces, for example OSP, Ni/Au, HAL, chem. Sn and chem. Ag, with both lead-free and lead-containing solder alloys. Important for our customers: Extensive tests have proven that a 1:1 exchange of the flux is possible without changing the process parameters.

PRODUCT ADVANTAGES

- significant CO₂ savings
- No-Clean
- universally applicable
- solids content 3.5 percent
- very good wetting properties

APPLICATION AREAS

EF350 Bio is a flux with a wide process window that can be used universally. It can be applied in the field of wave soldering as well as in selective soldering. EF350 Bio is well suited for use in spray fluxers.



SOLAR FLUXES – EF160 BIO PV AND EF180 BIO PV

EF160 Bio PV and **EF180 Bio PV** were specially developed for use in the photovoltaic module industry and, as No-Clean fluxes, meet all the requirements of the industry. Both fluxes are halogen- and resin-free and low in solids. EF180 Bio PV has a slightly higher solids content in comparison and has a lightly stronger activation than EF160 Bio PV. The innovative fluxes ensure very good solderability in module assembly processes for soldering by IR and convection.

PRODUCT ADVANTAGES

- significant CO₂ savings
- No-Clean
- low residue – minimal equipment contamination, low maintenance
- low solids content
- excellent peel force resistivity
- very good wettability

APPLICATION AREAS

EF160 Bio PV and EF180 Bio PV offer a wide thermal process window, making them suitable for lead-free and leaded soldering processes. They exhibit high peel forces that keep solder joints stable over the long term. Both fluxes can be applied by spray or dip processes. They are suitable for both automated spray and stringer applications and can also be used for hand soldering.



SOLAR FLUX – EF200 BIO PV

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. In addition, it leaves hardly any visible residues. This makes EF200 Bio PV the ideal choice for applications where absolute surface cleanliness is required. According to DIN-EN 16785-2, a 98 percent bio-based content is determined.

PRODUCT ADVANTAGES

- significant CO₂ savings
- low residue and non-corrosive
- excellent peel force resistivity
- outstanding wettability
- J-STD-004 (modified), class ORL0

APPLICATION AREAS

EF200 Bio PV is ideally suited for both automated spray and stringer applications. It can also be used for manual soldering. The flux fulfils the requirements regarding optical cleanliness and leaves only little residues in the soldering system.



SPECIAL FLUX – AK-1 BIO

The halogen-free No-clean flux **AK-1 Bio** was specially developed for cable tinning, tinning on component connections and soldering on copper or copper-passivated surfaces. According to DIN-EN 16785-2, a 90 percent bio-based content is determined.

PRODUCT ADVANTAGES

- significant CO₂ savings
- No-Clean
- resin-free
- very well suited for dipping processes
- J-STD-004 (modified), class ORL0

APPLICATION AREAS

AK-1 Bio is preferably applied by dipping. The application method depends on the specific use; brush and dispenser application are also suitable. Dip and wave soldering, induction soldering as well as soldering with hot plate or soldering iron is also possible.



FLUX FOR SELECTIVE SOLDERING – SF1000 BIO

SF1000 Bio was specially developed for selective soldering of electronic assemblies. The low solids content in combination with a 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. According to DIN-EN 16785-2, a 95 percent bio-based content is determined.

PRODUCT ADVANTAGES

- significant CO₂ savings
- No-Clean
- low residue
- resin-free
- optimised solids content
- fast wetting
- wide process window
- good penetration
- J-STD-004C, class ORL0

APPLICATION AREAS

Stannol SF1000 Bio can be used in spray fluxers. It shows good wetting at soldering temperatures in the range of 260 °C to 320 °C. It can also be used in other soldering processes such as wave and dip soldering.



WATER-BASED FLUXES – WF130 AND WF131

WF130 and **WF131** are developments of water-based ORL0 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 contain no VOCs. 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 the WF131 is a further reduction of the residue level, with the small trade-off of a slightly smaller process window.

PRODUCT ADVANTAGES

- 90 percent CO₂ savings
- No-Clean
- suitable for lead-free soldering with all common alloys
- application by spray fluxer
- non-flammable formulation (VOC content < 1 percent)
- good wettability and good through-hole filling
- easy storage and reduced health risks, as water-based

APPLICATION AREAS

WF130 and WF131 show good wetting on oxidised copper as well as on all common protective surfaces (HAL, Ni/Au, chem. Sn and chem. Ag). They also ensure excellent filling of through holes.



WATER-BASED FLUX – WF300S

WF300S is a halogen-free flux designed primarily for consumer electronics manufactured under normal or nitrogen atmospheres. WF300S has been specially optimised to reduce solder balls between adjacent connections.

PRODUCT ADVANTAGES

- 90 percent CO₂ savings
- No-Clean
- extremely effective on poorly solderable surfaces, e.g. oxidised copper
- optimised for reducing solder balls
- non-flammable formulation (VOC content < 1 percent)
- easy storage and reduced health risks, as water-based

APPLICATION AREAS

WF300S has been developed for use in spray fluxers. The flux has been formulated to work on oxidised copper as well as on all common protective surfaces such as HAL, OSP or Ni/Au.





STANNOL

TRADITION AND INNOVATION

SINCE 1879 – MADE IN GERMANY



SOLDER WIRES



FLUXES



SOLDER PASTES



ACCESSORIES



SOLDER BARS



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