



SG-Galvanobedarf GmbH

## *Description of the SG product range*



Dear Ladies and gentleman,

with these short descriptions of the most important products of SG-Galvanobedarf, which we present to you in this small brochure, are only a small overview into our product range.

For more than 40 years SG-Galvanobedarf GmbH has been a supplier with high quality and cost-efficient products for users of surface technology in Europe, Asia, Middle East and Africa. In the second generation, service and customer proximity characterize our company.

It goes without saying that our products are state-of-the-art in terms of technology, as they are subjected to critical tests in terms of quality and environmental friendliness.

SG products are used throughout Europe, but also in non-European countries.

We will gladly be at your disposal for further information. Be it through a practical demonstration of our products in your company or through the processing of sample parts provided by us. We look forward to talking to you about problem solving in your electroplating and you are welcome to contact us.

***Fast - competent - targeted.***

Your team of **SG-GALVANOBEDARF GMBH**

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SG-Galvanobedarf GmbH

## *Description of the SG product range*

### SG-GALVANOBEDARF – product range

**ACID DEGREASER**

**PICKLING BOOSTER + PICKLING INHIBITORS**

**PICKLING SALTS**

**DEGRASING PRODUCTS**

**ELCTROLYTIC CLEANERS**

**CHEMICAL BRIGHTENING OF COPPER AND BRASS**

**COPPER PROCESSES**

**NICKEL PROCESSES**

**CHEMICAL NICKEL PROCESSES**

**CHROME PROCESSES**

**ZINC AND ZINC-ALLOW PROCESSES**

**TIN AND TIN-ALLOW PROCESSES**

**ZINC CHROMATING**

**PASSIVATION FOR ZINC AND ZINC-ALLOWS**

**SG-SEALERS**

**PHOSPHATING AND BLACKENING**

**PRECIOUS METAL PROCESSES**

**METAL STRIPPERS**

**SPECIAL PROCESSES**

**AFTER TREATMENT**

**WASTE WATER TREATMENT**

**TECHNICAL ARTICLES**





SG-Galvanbedarf GmbH

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### **Pickling booster + pickling inhibitors**

#### **Pickling booster SG-Liquid**

The pickling booster SG-Liquid is a liquid additive which is used in pickling processes to speed up the process and helps to remove oil carbon. Pickling accelerator SG-Liquid can be used in sulfuric acid or in hydrochloric acid pickling and accelerates the removal of scale and rust. Pickling accelerator SG-Liquid can also be used in combination with our stain removers.

#### **Pickling booster SG**

The pickling booster SG is an oxidizing agent which is very stable in in the alkaline and in the acidic processes. Used in pickling processes the pickling booster speeds up and helps to remove burned-in carbon. The pickling booster SG can be used in hydrochloric or sulfuric acid pickling even in combination with acid degreasers.

Approach: 3 - 8 g/l in salt or sulfuric acid pickling

temperature: 20 - 50 °C

#### **Pickling inhibitor SG-BD**

Pickling inhibitor SG-BD is a liquid additive and ideal for inhibiting of non-oxidizing acids. It is very economical and suitable for base materials made of steel and non-ferrous metal. Due to the good inhibition, the attack on the base material as far as possible be excluded or minimized.

Approach: 0.3 - 3%

temperature: 20 - 60 °C

### **Pickling salts**

#### **SG-Defix**

The SG-Defix is ideal for activating steel, non-ferrous metals and zinc die casting. Purest metal surfaces are achieved, thus increases the adhesion strength with the base material and the electrodeposited metal coatings. SG-Defix removes rust and scale and is characterized by unusually long service life. SG-Defix is a 2 component product that can be tailored to your exact needs.

#### **SG-Defix PX**

SG-Defix PX is a pickling salt concentrate and is ideal for activating steel, non-ferrous metals and zinc die casting. Purest metal surfaces are achieved and thus increases the adhesion of the electrodeposited metal coatings. SG-Defix PX removes rust and scale and is characterized by unusually long service life. SG-Defix PX also removes organic surface contaminants and oxides.

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### **Degreasing products**

#### **Soak cleaner SG-KBL**

SG-KBL is a highly alkaline emulsifying dipping soak cleaner with highly effective surfactants and is therefore particularly well suited to remove very strong fat and oil deposits. Pigment soiling such as metal abrasion, polishing and grinding pastes can be easily removed. SG-KBL is suitable for currentless degreasing of steel and non-ferrous metals.

Approach: 3 - 8% Soak cleaner SG-KBL temperature: 20 - 70 °C

#### **Soak cleaner SG-DL**

The soak cleaner SG-DL is a demulsifying degreasing agent for the pre-treatment of ferrous and non-ferrous metals. Materials of zinc and aluminum are attacked. SG-DL has an individually controllable surfactant combination with pronounced demulsibility. The product is ultrafiltration-capable. The very good combination opportunity with the Demulsifier SG-K1-30, this allows a very long service life. It is also possible to adjust the cleaning effect by adding special surfactant mixtures to the individual needs of each user.

Approach: 4 - 8% Soak cleaner SG-DL temperature: 40 - 60 °C

#### **Soak cleaner SG-SLB**

The SG-SLB is particularly suitable for the degreasing of iron and steel. At low temperatures, non-ferrous metals may also be degreased but aluminum and zinc are attacked and can't be degreased with SG-SLB. High-quality active ingredients allow short treatment times and guarantee a long service life of the soak cleaner SG-SLB. Even stubborn dirt will be removed in a short time. The SG-SLB is micro-filterable.

Approach: 5 - 10% Soak cleaner SG-SLB temperature: 30 - 80 °C

#### **Soak cleaner SG-LO**

The degreasing agent SG-LO is particularly distinguished in the dipping degreasing of steel-iron alloy and nonferrous metal.

Approach: 3 - 4% Soak cleaner SG-LO in combination with  
3 - 4 ml/l Cleaning booster SG-986 temperature: 30 – 60°C

#### **Cleaner SG-7524 N**

The Cleaner SG-7524 N is a liquid slightly alkaline degreasing agent for all metals types with corrosion protection. Through a new surfactant combination the product show a very good demulsifying behavior and thereby oils and fats can be removed with the help of a simple oil separator. This will guaranty good cleaning effects over many months. Cleaner SG-7524 N owns corrosion inhibitors but the metal surface remains nevertheless paintable.

#### **SG-Citracid 8050**

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SG-Citracid 8050 is an acidic cleaning process based on mild citric acid, surfactants and inhibitors. SG-Citracid 8050 has proven itself in the cleaning of various metals such as stainless steel, non-ferrous metals and aluminum. For stainless steel the formation of a passive layer is also supported.

Approach 10 - 20%

temperature: 30 – 80 °C

### **Ultrasonic degreaser SG-UL 221**

The Ultrasonic degreaser SG-UL 221 is a liquid, slightly alkaline mixture of non-ionized surfactants and salts of organic acids for the cleaning of iron, aluminum, zinc and non-ferrous metals by ultrasonic or pure dipping process. The parts treated with SG-UL 221 are given temporary corrosion protection after degreasing by applying a hydrophobic film.

Approach: 2%

temperature 50 - 70 °C

### **Ultrasonic Degreaser SG-UL 221 Special**

The Ultrasonic degreaser SG-UL 221Special is a liquid, slightly alkaline mixture of non-ionized surfactants and salts of organic acids for the cleaning of iron, aluminum, zinc and non-ferrous metals by ultrasonic or pure dipping process. The SG-UL 221 Special is ideal for removing water-soluble polishing pastes. The parts treated with SG-UL 221 Special receive temporary corrosion protection after degreasing by applying a hydrophobic film.

Approach: 2 - 5% Ultrasonic cleaner SG-UL 221 Special

temperature: 50 - 70 °C

### **Ultrasonic degreaser SG-UL**

The Ultrasonic degreaser SG-UL is an alkaline, phosphate-containing powder product suitable for degreasing steel, non-ferrous metals, aluminum and zinc die cast. SG-UL can also be used as dipping degreaser without ultrasonic support. SG-UL is very suitable for hard process water. Special inhibitors prevent aluminum from being attacked despite the high alkalinity.

Approach: 1 - 7%

temperature: 50 - 80 °C

### **Demulsifier SG-K1-30**

The Demulsifier SG-K1-30 is a product based on organic and organic-herbal substances. Preferably the SG-K1-30 is used for oil splitting in the field of electroplating and metal treatment processing. There is no sludge generated and can usually be carried out at the original pH values. The oil layer can be removed after short reaction time.

Dosage: 0.5 - 1 ml/l

### **Spray degreaser SG-196**

The spray degreaser SG-196 is an alkaline silicate-containing powdered product. It is used for the degreasing of iron, aluminum, zinc, brass and copper by spraying.

Approach: 0.5 – 3 %

temperature: 30 - 90 °C

### **Spray degreaser SG-328**

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Is a liquid spray degreasing agent for the pretreatment of iron and steel with corrosion protection before gas-nitriding. Spray degreaser SG-328 is a liquid quick-release spray cleaner for iron and steel. SG-328 has a very good corrosion protection. A 1% solution has the value 0 according to DIN 51360 means no corrosion. The product does not form any disturbing foam above 40 ° C. Approach: 2 - 4%  
temperature: 40 – 50 °C

### **Spray degreaser SG-7000**

Spray degreaser SG-7000 is a liquid, slightly alkaline product for the degreasing of iron, copper, aluminum and brass parts. Spray degreasers SG-7000 solutions do not form any interfering foam above temperatures of 50 °C. The washing-active substances contained are biodegradable in accordance with EU-directive 648/2004.

Approach: 3 - 5%

temperature: 50 - 60 °C

## **Electrolytic cleaners**

### **Electrolytic cleaner SG-SE**

The SG-SE is a cyan-free degreaser for iron and steel with a high intake of oil and grease. It removes pigment dust with low foaming generation and extremely long service life.

Approach: 5 - 10%

temperature: 20 - 70 °C

### **Electrolytic cleaner SG-SEZ**

The electrolytic cleaner SG-SEZ is a foam-free powder for electrolytic degreasing, rust removal and descaling. The product is free of cyanides and complexing agents and contains no problematical components for the waste water treatment.

SG-SEZ processes have excellent emulsifying and dispersing properties.

Approach: 5 - 15%

temperature: 20 - 50 °C

### **Electrolytic cleaner SG-SEZ II**

The electrolytic cleaner SG-SEZ II is a foam-free highly soluble product for electrolytic degreasing, de-rusting and descaling. The product is free of cyanides and complexing agents and contains no problematical components for the waste water treatment.

SG-SEZ II processes have excellent emulsifying and dispersing properties.

Approach: 8 - 20%

temperature: 20 - 50 °C

### **Electrolytic cleaner SG-SBE**

The electrolytic cleaner SG-SBE is used for the degreasing of ferrous materials, copper, brass and bronze. SG-SBE is a product with very good conductivity. It is a complexing agent-free and cyan-free degreasing salt. SG-SBE solutions have excellent emulsifying and dispersing properties.

Approach: 5 - 10%

temperature: 20 - 50 °C

### **Electrolytic cleaner SG-SBE II**

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The SG-SBE 2 Electrolytic Degreaser is a further development of the SG-SBE and is excellently suited for the electrolytic degreasing of zinc die-cast, iron materials, copper, brass, bronze. With this product even sensitive surfaces such as polished zinc die-casting perfectly cleaned. It can be used in both anodic and cathodic circuit. SG-SBE 2 is also very suitable for removing adhering pigment dirt from the parts.

Approach: 3 - 10%

temperature: 20 - 50 ° C

**Many degreasing products are also available as concentrates, please contact us.**

### **Chemical brightening of copper and brass**

#### **Meculite**

Meculite is an acidic, chromium acid and nitric acid free pickling product for copper, brass and nickel-silver with an excellent brightness effect. Previously used yellow burners can be replaced by Meculite. Nitric oxides or other toxic gases do not arise with the use of Meculite so that the otherwise necessary suction and gas scrubbing is omitted. Chemical abrasion and gloss level can be determined by the dipping time. The treatment in baskets, bells and drums is possible, of course as well as the use in electroplating lines.

### **Copper processes (cyanide based)**

#### **Cyanide bright copper process SG-Opal C**

The SG-Opal C process is a potassium based brilliant copper bath that produces brilliant deposits. The metal distribution is exceptionally good. SG-Opal C can be operated with a current density of 4 A/dm<sup>2</sup> and a current efficiency of 98-100%.

#### **Cyanide bright copper process SG-Opal C Special**

SG-Opal C Special produces bright shiny copper layers with excellent throwing power. The deposits are ductile and can be coated without any problems. SG-Opal C Special has a particularly good metal distribution and can be operated with high current densities. SG-Opal C Special can be used with potassium or sodium salts.

### **Copper processes (acid based)**

#### **Acid bright copper SG-Opal ES**

SG-Opal ES is an easy-to-use bright copper process. The chloride tolerance is between 30 - 150 mg/l. It worked with only one permanent additive. SG-Opal ES has excellent levelling and excellent brightness over all current areas. The process is used for metal and plastic plating.

#### **Acid bright copper SG-Opal S 6000**

SG-Opal S 6000 is a dye-containing, acidic bright copper process. The deposits generated with the SG-Opal S 6000 are characterized by excellent brightness, levelling and metal distribution. Due to the extremely high levelling, the treatment times can be considerably shortened in many cases. SG-Opal S 6000 can be used for the finishing of metal parts as well as plastic parts.

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### **Nickel processes**

#### **Bright nickel SG-Brillant TR / TRL**

This bright nickel bath is ideally suited for use in rack and drum baths. After years of use, this shine additive has proven to be excellent for achieving uniform, light, ductile, high-gloss precipitates. SG-Brillant TR contains wetting agents and is suitable for use in mechanically moving baths. SG-Brillant TRL contains no wetting agent and can also be used in air agitated electrolytes.

#### **Bright nickel SG-Brillant TE**

Deposits of the SG-Brillant TE are white very bright and well-leveled.

It is suitable for rack and drum applications. The brightness is even in low current areas optimal and is not affected negatively by the brightener. The ductility of the deposits remains fully intact.

#### **Bright nickel SG-Brillant HE**

SG-Brillant HE is a newly developed electrolyte for high bright nickel plating with excellent leveling properties. The generated deposits are bright white and highly brilliant. SG-Brillant HE combines all the positive properties of a modern electrolyte according to the current state of the art. Easy chromium plating afterwards is just as self-evident as the fact that an active carbon cleaning is eliminated because SG-Brillant HE contains no disturbing degradation products.

#### **High leveling bright nickel SG-Brillant HE 2**

SG-Brillant HE 2 is a highly levelling bright nickel process which works excellently in rack and drum applications. The nickel deposits are white bright high shiny deposited and remain even with older electrolytes absolutely ductile. Chromium plating without any problems is self-evident because the deposited nickel layers are highly active. The brightness also in low current areas is exceptionally good and is not affected by the addition of the brightener additive SG-Brillant HE 2. An at least occasional filtration with a filter with active carbon is advisable.

#### **Semi-bright nickel SG-Brillant HG**

SG-Brillant HG is a semi-bright nickel process for generating strong levelling ductile sulfur-free and non-passivating nickel layers with excellent throwing power. In combination with our brilliant nickel SG-Brillant processes the SG-Brillant HG is suitable for depositing of corrosion-resistant double nickel layers.

#### **Pearl bright nickel SG-Extra**

The Pearl bright nickel SG-Extra produces even satin-matt uniform fine structured nickel coatings. Even polished base material can be nickel-plated virtually glare-free. The deposited layers have a good scratch and grip strength. The high activity of the deposits allows afterwards a very good chroming. In combination with chromium or gold layers different shades can be achieved.

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### **Nickel sulfamate SG**

Nickel coatings from the nickel sulfamate bath SG are uniform and bright and show only a very low internal tensile and compressive stresses. The properties of the deposits can be varied over a wide range by changing the bath composition and the working parameters. Nickel sulphate SG achieves soft to hard deposits with good ductility good corrosion resistance and good tolerances against impurities. High current densities enable short treatment times and stability over long working periods.

## **Chemical nickel processes**

### **Chemical nickel SG-Ni C**

The electro less SG-Ni C produces bright even layers of phosphorus-alloyed nickel with a phosphor content of 8-10 wt% on all metals and non-conductive surfaces. High hardness and excellent corrosion protection values are achieved. A very good deposition rate and process stability of mass articles in drums or rack parts is possible. SG-Ni C reaches a service life of up to 12 MTO's (metal turnovers).

### **Chemical nickel SG-Ni-BFH**

The electro less SG-Ni-BFH deposits are nickel-phosphorus alloy that has excellent corrosion performance as well as high wear resistance and high hardness. Equally outstanding are the mechanical and technological properties. The coatings are non-porous even at low layer thicknesses and resistant to almost all organic and inorganic media. The non-magnetic coatings have good solderability. The produced layers consist of a nickel-phosphorus alloy with 10 - 12 wt.% phosphorus without crystalline content. After a heat treatment at about 300 °C the coatings are finely crystalline. SG-NI-BFH complies with the International ELV (End of Life Vehicle) and RoHS / WEEE directives and can be used for coating processes with drums or racks.

### **Chemical nickel SG-Ni-BFL**

SG-Ni-BFL is an electro less nickel process for the production of bright nickel-phosphorus layers containing 5 to 9 wt% phosphor. Chemical nickel SG-NI-BFH complies with the international ELV (End of Life Vehicle) and RoHS / WEEE directives and can be used both for coating drum and rack goods. the process owns very good deposition rates and stability.



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### **Chrome processes**

#### **Bright chrome SG-CR 250**

The Bright chrome SG-CR 250 is a chrome process that is excellently suited for bright chrome plating. SG-CR 250 works free of soil bodies and can be varied in the process parameters. Very high deposition rates and strong activating effect combined with an extraordinary throwing power. Chromium acid contents of 180 - 380 g/l are possible and our PFOS and PFT free wetting agent SG-Diamond PF can be added as needed.

#### **Hard chrome SG-CR 250**

The Hard chrome SG-CR 250 is a high performance acidic chromium process whose additives are fully dissolved in the electrolyte. Its deposits are hard, shiny and even chrome layers. The tendency for edge or bud formation is low. Large layer thicknesses can be deposited in one layer without intermediate dragging.

Due to the good activation behavior, stainless steels can be chromed directly (flash-chrome). High current densities result in high deposition rates. Our PFOS and PFT free wetting agent SG-Diamond PF can be added as needed.

#### **Wetting agent SG-Diamant PF**

Wetting agent SG-Diamant PF is a high-efficiency, short-chain perfluoro-based anionic fluorosurfactant which reduces the surface tension in the bright and hard-chromium electrolytes lower than 30 mN/m. The drag out losses are significantly reduced by the use of wetting agent SG-Diamant PF. Wetting agent SG-Diamant PF is PFOS- and PFT-free.

### **Zinc and zinc-alloy processes**

#### **Cyanide zinc SG-ZNC II-S**

The SG-ZNC is a one component additive for all types of cyanide zinc processes with optimal brightness best throwing power, high temperature resistance and easy bath management. Very economical!

#### **Acid zinc SG-ZNS-OT 2**

SG-ZNS-OT 2 is a low-acidic, ammonium-free high-performance electrolyte for the generation of shiny and ductile zinc layers. SG-ZNS-OT 2 is a further development of our successful SG-ZNS bright zinc processes. Due to the high throwing power of the electrolyte and the above-average applicable current densities a considerably higher output of goods with shorter exposure times in drum and rack electrolytes can be achieved. Of course any acid zinc process on the market can be switched to SG-ZNS-OT 2.

Special features: Working temperature up to 50 ° C, ductile precipitation even with thicker layers, excellent brightness and throwing power combined with optimal metal distribution for rack and barrel processes. The process is made for air agitation and cathode moving processes and high economical through simple bath management since only 1 additive for normal work necessary is. The SG-ZNS OT 2 process can be operated on potassium and ammonium basis.

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### **Acid zinc SG-ZNS-V 96**

SG-ZNS-V 96 is used for low-acidic ammonium-free galvanizing. The brightener is a water-soluble brightener, which makes working up to 40 ° C possible. Of course, any commercially available acid zinc bath can be converted without any problems to SG-ZNS-V 96.

Other special features are: In normal operation only 1 additive is required, high cloud point, ductile layers even with thicker deposits combined with an optimal metal distribution and high efficiency.

### **Alkaline cyanide free zinc SG-ZNA 100**

The cyanide free, alkaline zinc bath SG-ZNA 100 is a further development of our ZNA 20 process and generates bright zinc layers on rack and drum applications on ground material of iron and steel. Layer thicknesses of up to 50 µm without pores and bubble formation are possible. The bath generates high-bright zinc coatings at current densities up to 8A/dm<sup>2</sup> and owns a very good brightness effect over the hole current density area combined with optimum metal distribution. It can also be used for highly profiled parts and also enables extreme hanging density. The working temperature up to 35 °C is possible. SG-ZNA 100 is a 3 component system with extremely stable additives! The produced zinc deposits are of high ductility an advantage especially for goods which are later bent, formed or welded.

### **Alkaline cyanide free zinc bath SG-ZNA 50N**

The alkaline cyanide free zinc process SG-ZNA 50N deposits high bright zinc layers on rack and drum products made of iron and steel in layer thicknesses of up to 50 µ without pores and bubble formation. At current densities up to 6 A/dm<sup>2</sup> the bath produces shiny zinc coatings has a very good depth of brightness and metal distribution and can also be used for very strongly profiled parts. The working temperature is up to 35 °C.

The generated zinc deposits are of high ductility which is particularly advantageous when the parts are later bent, molded or welded.

SG-ZNA 50 N is a 4 component system with extremely stable additives.

### **Alkaline cyanide free zinc bath SG-ZNA 20**

The cyanide free alkaline zinc process SG-ZNA 20 deposits on rack and drum produces on iron and steel shiny zinc deposits in layer thicknesses up to 50 microns without pores and blistering effects. At current densities up to 8 A/dm<sup>2</sup> the bath produces shiny zinc coatings and has a very good brightness depth and an optimal metal distribution over the entire current density range. It can also be used with very profiled parts and also allows extreme hanging density. The working temperature is up to 35 °C. The SG-ZNA 20 is a 2 component system therefore the bath management is very easy! The produced zinc precipitates are of high ductility an advantage especially for goods which are later bent, formed or welded.

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### **Zinc - iron process SG-ZNA-FE 95**

The cyanide free alkaline zinc-iron process SG-ZNA-Fe 95 generates bright deposits of zinc-iron alloy on rack and drum applications. The generated layers achieve when passivated a particularly good corrosion protection.

At current densities of up to 6 A/dm<sup>2</sup> the process produces evenly bright coatings with very good brightness depth and excellent metal distribution. SG-ZNA-FE 95 can also be used on very profiled parts. The generated precipitates are of highly ductile an advantage especially for goods with later bending sharpening or welding. The layers can passivate very well and optimally in our passivation products.

### **Acid zinc-nickel SG-ZNS-NI 30**

The SG-ZNA-Ni 30 deposits high bright zinc nickel alloy coatings with 12-15% nickel. SG-ZNS-Ni 30 shows a high current efficiency of >90% and can be operated without boric acid. SG-ZNS-Ni 30 is suitable for rack and barrel applications and has very good hiding power and throwing power. SG-ZNS-Ni 30 is suitable for direct coating of cast iron and hardened steel.

### **Alkaline zinc-nickel SG-ZNA-NI 100**

Our alkaline zinc nickel SG-ZNA-Ni 100 produces zinc alloy coatings containing 12-16% nickel. The process is suitable for barrel and rack applications and produces uniform alloy layers over the entire current density range.

## **Tin and tin-alloy processes**

### **Acid tin SG-SN 40**

The acidic bright tin process SG-SN 40 deposits bright and corrosion-resistant tin layers. It is suitable for various base metals such as copper, copper alloys, steel and steel alloys. SG-SN 40 can be used for rack and barrel applications.

### **Acid tin SG-SN 50**

The acidic bright tin process SG-SN 50 is the further development of our SN 40 process and generates bright shiny deposits and corrosion-resistant coatings. It is suitable for various base metals such as copper, copper alloys, steel and steel alloys. SG-SN 50 is used for rack and barrel applications. The process can be operated with only one additive depending on the application. For more complex requirements 3 components are used.

### **Acid mat tin SG-SN 50**

The acidic mat tin SG-SN 50 is an acidic tin process that generates mat and corrosion-resistant tin layers. It is used for many base metals such as copper, copper alloys, steel, and steel alloys. SG-SN 50 method is suitable for rack and barrel plating.

### **Tin-nickel SG-Sn-Ni**

SG-SN-Ni is a tin-nickel process used to generate bright preserving tin-nickel alloy coatings. The coatings have a slightly reddish colour and the formation over a current density range of 0.005 A - 2A/dm<sup>2</sup> without staining. The coatings always contain the same alloy content of 65% tin and 35% nickel. With SG-Sn-Ni achieves an excellent brightness depth spread. Even the most geometrically difficult shapes get a completely uniform metal distribution. Since the

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precipitate always the same alloy content and colour is generated. The Sn-Ni layers have a very high corrosion resistance, which is higher than that of a chromium precipitate. By adding our additive SG-Anthracite, it is also possible to deposit anthracite-coloured coatings.

### **Zinc chromating**

#### **Blue chromating SG-A**

The Blue chromating SG-A produces consistently blue coatings and is suitable for all zinc processes on the market. SG-A is characterized by very short dipping time and can be consolidated several times. The blue chromating SG-A is supplied in liquid form.

#### **Yellow chromating SG-CF**

The yellow chromating SG-CF is suitable for all parts galvanized in cyanide, acid and alkaline cyanide-free zinc electrolytes. SG-CF is supplied in liquid form and consists of one part. SG-CF is used in normal tap water. Furthermore the yellow chromating SG-CF can be used for rack as well as barrel applications.

#### **Olive chromating SG-103**

The Olive chromating SG-103 is suitable for all types of zinc processes. It is characterized by uniform stain-free olive dyeing, exceptionally good corrosion protection, long service life and very economical. The SG-103 is supplied in liquid form and only one additive.

#### **Black chromating SG-FE-ZN 23**

The black chromating SG-FE-ZN 23 is a silver-free black chromating which was developed especially for the chromating of zinc-iron layers of rack applications. Even black chromate layers are achieved. When silver is added pure zinc layers can also be chromated deep black.

#### **Chrome hardener SG**

The chromate hardener SG is used for the after treatment of blue or yellow chromated galvanized parts. It is mainly used where highest adhesion requirements are needed. Parts treated in Chrome hardener SG are smudge-resistant even when they are still wet. Also for the prevention of unwonted passivation and leaching out the Chrome hardener SG is used for rack and barrel applications.

### **Passivation for zinc and zinc-alloy**

#### **Blue passivation SG-III extra**

SG-III-extra is a cobalt-containing blue passivation and is used in dipping process for bright galvanized parts. It is particularly suitable for parts where a normal blue passivation does not form consistent blue layers. The blue tone remains even after high temperature treatments. The benefit of the passivation SG-III extra is the long service life and the very good corrosion protection values. The blue passivation SG-III extra is suitable for rack and drum applications.



SG-Galvanbedarf GmbH

## *Description of the SG product range*

### **Blue passivation SG-Nokopas B**

SG-Nokopas B is a blue passivation that can be used on layers of acid, cyanide and cyan-free alkaline zinc electrolytes. Shiny very nice blue passivation layers according to DIN 50961-B are produced. The protection layers of SG-Nokopas B are characterized by increased corrosion protection. Because of the low zinc removal a very long service life of the passivation solution can be achieved. SG-Nokopas B contains an inhibitor for iron.

### **Blue passivation SG-Nokopas K**

SG-Nokopas K is a cobalt containing blue passivation for zinc layers from acidic, cyanide and cyanide free alkaline processes. Shiny very nice blue passivation layers according to DIN 50961-B are produced. The passivation layers of SG-Nokopas K are characterized by a greatly increased corrosion protection compared to normal blue passivation products. A very long service time results out of the low zinc removal of the passivation solution. By increasing the drying temperature up to 120 ° C the corrosion protection can be significantly improved. Zinc-iron alloy layers can also be treated with SG-Nokopas K. The generated passivation layer has a light yellowish color.

### **Blue passivation SG-III CP**

The passivation SG-III CP is a single step cobalt-containing blue passivation and is used in the dipping process for bright-galvanized parts. Depending on concentration it can be used as a blue passivation or as a thick layer passivation. The SG-III CP produces uniform blue violet zinc layers and achieves very good corrosion protection. Furthermore the layers are characterized by good colour fastness with subsequent tempering.

When used as a thick layer passivation with increased make up values blue-yellow iridescent surfaces are produced. These layers provide excellent corrosion protection and are comparable to the protective effect of conventional chromium (VI) based yellow chromating. Parts passivated with the blue passivation SG-III CP in the thick-film process improve the corrosion protection even with drying temperatures of 100 °C.

### **Yellow passivation SG-137 and SG-137 Plus (dye-free)**

The Yellow passivation SG-137 and 137 Plus (Plus = increased corrosion protection) are liquid 3-valent yellow passivation products. The yellow passivation SG-137 is free of chromium VI compounds complexing agents and dyes. Yellow passivation SG-137 has a yellowing, colorful appearance and can be operated at low temperatures and very high corrosion resistance values.

### **Thick layer passivation SG-III Protect**

The thick layer passivation SG-III Protect is a Cr(VI)-free trivalent thick-film passivation that ensures high corrosion protection even at room temperature. SG-III Protect produces corrosion-resistant coatings on zinc layers of acidic, cyanide or cyanide free electrolytes of drum or rack processes.

Make up:	60 ml/liters	blue passivation
	40 - 80 ml/liters	thick layer passivation
Temperature:	30 °C	range: 20 - 50 °C



SG-Galvanbedarf GmbH

## *Description of the SG product range*

### **Black passivation SG-III**

The Black passivation SG-III is a Cr-(VI)-free trivalent black passivation which ensures high corrosion protection even at room temperature. The black passivation SG-III produces black coatings on zinc layers of acidic and cyanide electrolytes for drum or rack applications. In combination with a followed SG-Sealer non-iridescent black coatings are generated.

### **Black passivation SG-III AZ**

The Black passivation SG-III AZ is a chromium (III)-valent passivation for alkaline based zinc coatings. The solution is completely free of chromium (VI) and produced black passivation layers on alkaline zinc coatings. SG-III AZ is ideal for coating of rack and barrel applications. In combination with subsequent SG-Sealers very good corrosion protection values are achieved.

### **Passivation SG-110**

The Passivation SG-110 is a chromium-(III) based iridescent thick layer passivation for zinc and zinc alloy coatings and is completely chromium (VI)-free. In combination with our SG-Sealer systems a very high corrosion resistance is achieved. SG-110 can be used for rack and barrel applications.

## **SG-Sealers**

### **SG-Sealer 110 W**

The SG-Sealer 110W is a dilutable silicon-based sealant and is used by dipping/spinning, Spin coater, dipping or spraying application. SG-Sealer 100 W contains no chromates in the dry film and comes up transparently. The coating method produces no hydrogen induction into the object. The applied film has a very good heat resistance. SG-Sealer 100 W reacts with all our passivation layers on zinc and zinc alloy coatings and thus achieves outstanding corrosion protection values in the salt spray test according to DIN 50021-SS or ASTM B 117 in combination with the mentioned layers. With SG-Sealer 110 W optimum properties are achieved in the layer thickness range of 1-2 microns.

### **SG-Sealer 300 W**

The SG-Sealer 300 W is a silicon-based inorganic sealant used by dipping/spinning, spin-coater, dipping or spraying processes. SG-Sealer 300 W contains no chromates in the dry film and is miscible with water. The coating method produces no hydrogen induction into the treated parts and the applied film is transparent. SG-Sealer 300 W works with all our passivation and chromate coatings on zinc and zinc alloy layers. Depending on the passivation layer corrosion protection values of up to 1000 hours can be achieved in the salt spray test in accordance to DIN 50021-SS or ASTM B 117. With SG-Sealer 300 W treated parts optimal properties are achieved with layer thickness range of 1-5 microns and is therefore used for coating of screws, nuts or other fasteners.

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SG-Galvanbedarf GmbH

## *Description of the SG product range*

### **SG-Sealer 350 W**

SG-Sealer 350 W is an inorganic/organic silicon-based sealant used in the dipping/spinning, dipping/extracting and spraying processes. SG-Sealer 350 W contains no chromates in the dried film and is mixable with water. The coating method produces no hydrogen induction that could damage the treated object. The applied film is transparent. SG-Sealer 350 W reacts with all our passivation or chromating processes on zinc or zinc alloy coatings. Depending on the base layer corrosion protection of 240 up to over 1000 hours in salt spray testing according to DIN 50021 SS or ASTM B 117 can be achieved without base metal corrosion.

### **SG-Sealer 500 W**

SG-Sealer 500 W is a silicon based inorganic/organic sealant used in dipping/spinning, dipping/extracting and spraying processes. SG-Sealer 500 W contains no chromates in the dried film and is mixable with water. The coating method produces no hydrogen induction that could damage the treated parts and the applied film is transparent.

SG-Sealer 500 W reacts with all our passivation or chromating coatings on zinc or zinc alloy layers. Depending on the base coating corrosion protection of 240 to over 1000 hours in salt spray tests according to DIN 50021 SS or ASTM B 117 without base metal corrosion can be achieved.

### **SG-Sealer 550 W**

SG-Sealer 550 W is an inorganic/organic silicon-based sealant used in dipping/spinning, dipping/extracting and spraying processes. SG-Sealer 550 W contains no chromates in the dried film and is mixable with water. The coating method produces no hydrogen induction that could damage the treated parts and the applied film is transparent.

SG-Sealer 550 W reacts with all our passivation or chromating layers on zinc or zinc alloy layers. Depending on the choice of the base layer corrosion protection of 240 to over 1000 hours in salt spray test according to DIN 50021 SS or ASTM B 117 without base metal corrosion can be achieved.

### **SG-Sealer 605 WL**

SG-Sealer 605 WL results after treatment and drying an invisible dry sliding film with excellent sliding properties. The application areas of the SG-Sealer 605 WL are mass-produced parts which are to be coated economically to improve the sliding properties. This is to allow easier and faster assembly by the lower friction and to achieve a defined predictable friction behavior.

### **SG-Sealer 700 W Yellow**

SG-Sealer 700 W Yellow is a silicon-based inorganic sealant used in dipping/spinning, spin-coater, dipping or spraying processes. SG-Sealer 700 W Yellow contains no chromates in the dried film and is mixable with water. The coating method produces no hydrogen induction into the treated parts and the applied film is yellow. SG-Sealer 700 W Yellow reacts with all our passivation processes for zinc or zinc alloy coatings. Corrosion protection values of more than 1000 hours in combination with the passivation products without base material corrosion can be achieved in the salt spray test according to DIN 50021 SS or ASTM B 117. SG-Sealer 700 W Yellow achieves optimal properties in the layer thickness range of 0.5 to 3 microns and is therefore for example used for the coating of screws, nuts and other fastening elements.

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SG-Galvanbedarf GmbH

## *Description of the SG product range*

### **SG-Sealer 903 WL**

SG-Sealer 903 WL gives after using and drying an invisible dry sliding film with excellent sliding properties. The field of application of the SG-Sealer 903 WL is mass-produced parts which are to be coated economically to improve the sliding properties. This allows an easier and faster assembly by lower friction and achieves a defined predictable friction behavior.

### **SG-Sealer 9108 and 9108-2**

The SG-Sealer 9108 and 9108-2 are silicon-based inorganic sealants used in dipping/spinning, spin-coater, dipping or spraying processes. The sealers contain no chromates in the dried film and are mixable with water. The coating method produces no hydrogen induction into the treated parts and the applied film is transparent. The sealers react with all our passivation layers on zinc and zinc alloy coatings. The corrosion protection values of up to 1000 hours can be achieved in the salt spray tests according to DIN 50021-SS or ASTM B 117. With SG-Sealer 9108 and 9108-2 optimal properties are achieved with layer thickness range of 1-5 microns. Therefore they are used for example for coating of screws, nuts and other fasteners.

### **SG-PassSeal**

SG-PassSeal is a one component liquid passivation based on chromium (III). The solution is completely free of chromium (VI). SG-PassSeal improves the appearance of black passivation coatings on zinc, zinc-iron, zinc-nickel coatings and corrosion protection. SG-PassSeal is ideal for rack and barrel applications and is easy to handle, maintain and dispose of. SG-PassSeal is used on passivated/rinsed parts. After draining it is directly dried. SG-PassSeal can be used instead of a sealer if polymer-based dispersions are not desired. SG-PassSeal is easy to remove by the normal pretreatment procedure.

## **Phosphating and blackening**

### **Iron phosphate SG-301**

The iron phosphating SG-301 is a liquid iron phosphating and degreasing agent for spraying applications. The generated phosphating layers obtain good corrosion protection and an excellent primer for the subsequent paint or powder coating. The process can be used in the dipping or spraying processes.

### **Zinc phosphate SG-526**

Zinc Phosphate SG-526 is a low-sludge generating zinc phosphating agent. The generated zinc phosphate layers are dense, fine-crystalline and dark. Depending on the concentration thin and thick zinc-phosphate layers can be produced. Addicted to the ground material an activation step or an addition of the Booster SG-ZnP may be necessary. An empirical pretesting is recommended. Working temperature:  $70 \pm 5$  °C

### **Zinc phosphate SG-650**

Zinc phosphate SG-650 is a nickel-free low-sludge generating zinc phosphating agent. The SG-650 zinc phosphate layers are dense, fine-crystalline and dark. Working temperature: 60 - 80 °C



SG-Galvanobedarf GmbH

## *Description of the SG product range*

### **Manganese phosphate SG-N**

The manganese phosphate SG-N produces dark gray-black manganese phosphate layers on iron and steel and is characterized by its easy bath management. Layer thickness, crystal structure and degree of blackening depend on the ground material and its previous processing (for example hardened). The manganese phosphate SG-N is used as corrosion protection in combination with conservation agents:

- for decorative purposes with simultaneous rust protection, if the corrosion protection is not sufficient with usual blackening layers and thicker layer are possible.
- as sliding phosphating layer to reduce wear on moving machine parts (for example hitch or wheels).
- as base for lubricants and subsequent coatings

Process temperature: 95 °C - 98 °C

### **Manganese phosphate SG-5556**

Manganese phosphate SG-5556 is a phosphating agent to produce dark gray/black manganese phosphate layers on iron and steel. Designed to produce medium and thick manganese phosphate layers it requires a activation process. The layer thickness depends on the type of pre-activation and the bath parameters of manganese phosphating. It is used:

- as corrosion protection in combination with suitable anti corrosion oils.
- for decorative purposes with simultaneous rust protection, for example: if the rust protection is not sufficient with conventional blackening layer and thicker layers are allowed.
- as sliding phosphating layer to reduce wear on moved machine parts or as a primer for lubricants
- as a primer for subsequent coatings

Make up: 10 liters of manganese phosphate SG-5556 per 100 liters of bath volume

### **Blackening salt SG**

The blackening salt SG is a universal product for rust-protective blackening of low to high alloy steels - rolled or drawn - including hardened material. The resistance of the layer without oiling reaches up to 72 hours in the condensation test according to SK DIN 50017.

### **Blackening salt SG-D**

The Blackening salt SG-D is a quick dipping process and is suitable for even blackening of steel, iron and carbonated surfaces. It particularly improves blackening of sheet metal, rolled and dawned material as well as tools, drills, weapons and other problem parts. The use of Blackening salt SG-D provides unconditional dimensional stability and good corrosion protection values. The spray protection creates an improved working environment and reduces annoying itching. The generated layers are resistant to bending and abrasion and have a smooth, structure-less appearance. SG-D must not be used for light metals, zinc and zinc alloys.

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SG-Galvanbedarf GmbH

## *Description of the SG product range*

### **Blackening salt SG-5501**

Blackening salt SG-5501 is a powdered product for blackening of metal surfaces. It is a quick dipping method according to DIN 50938. SG-5501 is suitable for uniform blackening of steel, iron and carbon-nitride surfaces. Particularly improving blacking on sheet metal, rolled and drawn material. The use of Blackening salt SG-5501 provides dimensional stability and good corrosion protection. The layer is resistant to bending and abrasion and has a smooth, structure-less appearance. SG-5501 processes are thin fluid and sludge-poor.

Blackening salt SG-5501 contains a high-quality long-term spray protection to improve the working conditions.

### **Blackening salt SG-VA**

Blackening salt SG-VA is a special blackening process. SG-VA is particularly suitable for the blackening of high-alloy and stainless steels, preferably for non-magnetic stainless steels. SG-VA is a nitrite-free product that forms uniform deep black surfaces. For composite parts with normal steel, steel parts can also be plated. The layer is resistant to bending and abrasion. Conductivity and magnetic properties are not affected.

### **Blackening salt SG-VA-OS**

Blackening salt SG-VA is a highly alkaline powder product and it is an oxidic-sulfidic process. SG-VA-OS is particularly suitable for blackening V2A materials, i. of magnetic stainless steels (stainless steel, rivets, screws, pins, etc.) SG-VA is a nitrite-free product and forms uniform, deep black surfaces. Dimensional tolerances are retained. The layer is resistant to bending and abrasion. Conductivity and magnetic properties are not affected.

### **Cold blackening SG-3**

The Cold blackening SG-3 works at 15 - 30 °C and saves compared to the usual hot blackening processes enormous energy costs. It produces deep black coatings with high corrosion protection on all steel types in about 1 minute dipping time.

### **Cold blackening SG-57**

Cold blackening SG-57 is a product that completely saves the enormous energy costs of hot-blackening processes. On iron and steel parts it achieves in 0.5-5.0 minutes treatment time deep black coatings. The SG-57 however cannot generally replace the blackening layers achieved in the classic hot-blackening processes. The Cold blackening SG-57 operates at room temperature and produces deep black coatings. The Cold blackening SG-57 is nickel-free and a ready-to-use solution.

## **Precious metal processes**

### **Gold process SG-5N**

The gold process SG-5 N is an acidic gold electrolyte for hard and shiny gold deposited. The coatings are ductile and very resistant to mechanical stress. The good throwing power of the electrolyte also allows plating of complicated shaped parts. The bath works at room temperature and is suitable for rack and barrel applications.

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## *Description of the SG product range*

### **Chemical gold process SG-AU 340**

This process generates deposits of gold by "ion exchange" (without the use of an external power source) on less noble metal like nickel, copper and its alloys as well as solder metals. Uniform coatings are deposited with a constant golden yellow color. The process is relatively easy to use and requires no special effort on tanks and accessories.

### **Bright silver SG-Arga-L**

The Bright silver process SG-Arga-L is organic based and generates high-bright and light-white silver deposits regardless of the layer thickness. The brightness throwing power is exceptionally good. The brightening system is based on organic additives. The physical properties are since no metallic brighteners are used almost equivalent to those of fine silver. So the method is also ideal for the silvering of electrical and electronic components.

### **Semi-bright silver SG**

This electrolyte can be used to produce even shiny pure silver coatings for drum and rack applications. Since the conductivity differs only slightly from pure silver due to the low incorporation of foreign substances the main area of application of this bath is in the electro technical and electronic industry.

## **Metal strippers**

### **SG-Metex NI-CF**

A cyanide free stripper that removes nickel from the base metal steel. SG-Metex Ni-CF is supplied in two parts.

### **SG-Metex NI-CF 66**

SG-Metex NI-CF 66 is a cyanide free stripper for all types of nickel even chemical deposited nickel and nickel-phosphorus layers with iron as ground material. The easy-to-use 2-component system is suitable for all nickel layers and works without attacking the base material. The solution is very stable even at high temperatures.

Temperature range: 50 - 100 °C (optimum 90 °C)

### **SG-Metex NI-S**

Alkaline cyanide containing metal stripper process to remove nickel, cadmium, zinc and silver from steel as ground material.

### **SG-Metex NI-BV**

A cyanide free stripper to remove nickel deposits from non-ferrous base metals.

### **SG-Metex B-SnNi**

SG-Metex B-SnNi is used for stripping on base materials of copper and brass. Coatings of nickel, tin and zinc are removed without major attack on the base material.

Temperature: 50 - 75 °C (for brass as base material 50 - 55 °C)

Removal speed: depending on the temperature 15 - 50 microns per hour nickel

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## *Description of the SG product range*

### **SG-Metex GE**

The SG-Metex GE is an electrolytic working stripper for copper, nickel (including matt and semi-bright nickel), chromium and other metals of stainless steels in particular from rack hooks. Mainly stainless steel grades of: 16 to 19% Cr, 7 to 12.5% Ni, 0.07 to 0.15% C and possibly 2 to 2.5% Mo, 0.5% Ti are used. Rack contacts made of titanium are also suitable.

## **Special procedures**

### **Cuproclean**

Cuproclean is an acidic, nitric acid-free pickling and cleaning product for copper and copper alloys without substantial attack on the base material. It reliably removes oxides, flux and drawing residue.

### **Inhibitor VP 392**

INHIBITOR VP 392 is an organic product that has the property of forming a molecular film from acidic solution on metal surfaces with very good corrosion protection. INHIBITOR VP 392 is suitable for iron and non-ferrous metals such as copper, brass, nickel and zinc equally well suited. In order to ensure a uniform coating of the protective film, the parts should be fat and oil-free before dipped into the solution. INHIBITOR VP 392 is supplied as a concentrate. Make up values of 0.5 - 1% has been found to be sufficient.

### **Conservator SG-SP 118-New**

The SG-SP118 New is a liquid slightly alkaline corrosion inhibitor for iron metals with a very good corrosion protection. Thanks to a novel combination of surfactants consistently good preservation results can be achieved over many weeks. Conservator SG-SP 118-New has selected corrosion inhibitors and is also used as additive in wet blasting systems.

### **SG-Aluminum pickling**

SG-Aluminum pickling is an alkaline product which diluted in water gives much better results achieved as pure Sodium hydroxide pickling's. In SG-Aluminum activated parts show a more fine even uniform appearance with abrasive marks and roughness will be smoothed. SG-Aluminum pickling is used for pickling (even with low temperatures) and cleaning of aluminum surfaces and in front of electroplating, anodizing, chemical glazing, welding, phosphating and painting. The formation of hard-to-remove aluminum hydroxides deposits on the surface and the tank walls is reliably prevented.

### **Zincate pickling SG-III**

The Zincate pickling SG-III is a cyanide-free zincate process for the pretreatment of aluminum prior to plating and especially before electroless nickel plating. The zincate pickling SG-III is characterized by a very low water-like viscosity and is able by dipping of clean pretreated parts to displace the water film very quickly. This will result in a denser more uniform zincate film than achieved with the usual Zincate processes. So generated zincate layer has improved adhesion issues to aluminum and provides excellent adhesion strength to the following metal layers. The low viscosity of Zincate pickling SG-III causes easy penetration into blind holes, gaps, threads, grooves and folds on aluminum workpieces and increases rinse effect. Due to the good dripping ability of the zincate pickling also complicated shaped workpieces drag out losses are reduced and the profitability increased. The Zincate pickling SG-III can be used to treat all used regular aluminum alloys.

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SG-Galvanbedarf GmbH

## *Description of the SG product range*

### **Bonding SG-AL**

Through a simple electroless dipping most metal coatings are deposited on aluminum and aluminum alloys without intermediate copper plating through the use of Bonding SG-AL as primer. The often used tempering for securing the adhesive strength is eliminated. The treatment with SG-AL forms a film on which nickel, cyanide copper, brass, silver, chromium (sulfuric acidic), tin, zinc or cadmium can directly be plated.

### **Coloring solution SG-MS 750**

The Coloring solution SG-MS 750 is used for decorative oxide coloring of copper and copper alloys. Shades of light brown to bronze to deep black are achieved. Even in barrel treatment uniform coloring is achieved.

### **Coloring solution SG-MS**

The Coloring solution SG-MS is used for decorative oxide coloring of copper and copper alloys. Shades of light brown to bronze until deep black are achieved. Even in barrel treatment uniform coloring is achieved.

### **Coloring solution SG-4**

The Coloring solution SG-4 is used for decorative oxide coloring on copper and copper alloys. Shades of light brown to dark brown are achieved. Even in barrel treatment uniform coloring is achieved.

### **Coloring solution SG-Bz-Sn**

The Coloring solution SG-Bz-Sn is a liquid acidic product and consists of two components. Coloring solution SG-Bz-Sn is ideal for the antique dyeing of white bronze and tin. The treated layers get an uniform anthracite to black color.

### **Chemical polishing SG-MS**

The Chemical polishing SG-MS is an acidic pickling product free of chromium and nitric acid for copper, brass and nickel silver with a gloss effect far exceeding that of a yellow stain. Nitrogen oxides or other poisonous gases do not arise with the SG-MS so that otherwise necessary suction and gas scrubbing omitted. Leveling and brightness level can be determined by treatment time. The treatment in baskets and barrels and plating lines is possible.

### **Chemical deburring SG-1559**

The chemical deburring SG-1559 is suitable for the chemical deburring of ferritic steel. For austenitic steel grades such as chromium-nickel steel is the SG-1559 not suitable. Chemical deburring SG-1559 is very easy to use safe and economical. Hydrogen embrittlement by SG-1559 does not occur. The chemical deburring SG-1559 is supplied in liquid form.



SG-Galvanbedarf GmbH

## *Description of the SG product range*

### **Stainless steel pickling concentrate SG 1:1**

The stainless steel pickling concentrate SG 1:1 can be used by dipping, spraying and circulation process. It eliminates unwanted surface products such as scaling, tempering colors, ferrites and other impurities. At the same time the Pickling concentrate SG 1:1 leads to restore full corrosion resistance and produced a metallic pure silky-glossy surface. Special additives reduce the NO<sub>x</sub> emission and ensure a good pickling even at higher metal contents up to 45 g/Liter.

## **After treatments**

### **Wetting agent SG-Antiqua S**

Wetting agent SG-Antiqua S is used to prevent water spots during drying of the galvanized goods. SG-Antiqua S is especially used after nickel, chrome and silver plating. The wetting agent SG-Antiqua S has the property in acidic and neutral solutions to displace the water film from metal surfaces. At the same time an intermediate corrosion protection is produced.

### **SG-Correx 36**

SG-Correx 36 is a corrosion inhibitor with water displacing properties for all metals. The resulting protective film is still detectable even after 1 year of exposure. And the conditions of the condensation test (DIN 50017) the protective film can still be provided after 8 cycles. The remarkable yield of SG-Correx 36 is based on its high spreading capacity low surface tension and superior creep properties.

### **SG-Nokorol 811**

SG-Nokorol 811 is a corrosion inhibitor and dewatering fluid. It is characterized by improved corrosion protection, excellent water displacement and very good demulsibility. The handling is positively influenced by the short drying time and odor neutrality. The generated surface film produces a waxy but grip-resistant coating.

Corrosion behavior at 1.0 g/m<sup>2</sup> salt spray test >20h DIN EN ISO 9227

### **SG-Nokorol 811/O**

SG-Nokorol 811 / O is a corrosion inhibitor and dewatering fluid. It is characterized by improved corrosion protection, excellent water displacement and excellent demulsibility. The handling is positively influenced by the short drying time and odor neutrality. SG-Nokorol 811/O leaves a thin and oily film.

Corrosion behavior at 1.0 g/m<sup>2</sup> salt spray test >20h DIN EN ISO 9227

### **SG-Nokorol 831**

SG-Nokorol 831 is a corrosion inhibitor and dewatering fluid. It is characterized by improved corrosion protection, excellent water displacement and very good demulsibility. The handling is positively influenced by the short drying time and odor neutrality. The generated surface film produces a waxy but grip-resistant coating.

Corrosion behavior at 2.5 g/m<sup>2</sup> salt spray test >50h DIN EN ISO 9227



SG-Galvanbedarf GmbH

## *Description of the SG product range*

### **SG-Nokorol 831/O**

SG-Nokorol 831/O is a corrosion inhibitor and dewatering fluid. It is characterized by improved corrosion protection, excellent water displacement and very good demulsibility. The handling is positively influenced by the short drying time and odor neutrality.

SG-Nokorol 831/O leaves a thin and oily film.

Corrosion behavior at 2.5 g/m<sup>2</sup> salt spray test >50h DIN EN ISO 9227

### **Emulsifiable oil SG-5**

The Emulsifiable oil SG-5 is a water-miscible corrosion prevention concentrate. When mixed with water a milky highly stable emulsion is formed. The parts to be protected are preferably dipped with a solution temperature of about 60-80 °C what shortened the drying time and influenced the running of the excess emulsion positive.

### **Emulsifiable oil SG-6**

The Emulsifiable oil SG-6 is a water-miscible corrosion prevention concentrate with very good surface covering. Mixed with water a milky to slightly brownish stable emulsion is generated. Even with strong drag in from other electrolytes the emulsion is very stable and works as well with phosphate surfaces. The parts to be protected are preferably dipped with a solution temperature of about 35-60 °C what shortened the drying time and influenced the running of the excess emulsion positive. The SG-6 treated metal parts get a thin oily non-sticky film with excellent corrosion protection properties.

### **Passivation SG-263**

The passivation SG-263 is a low-foam corrosion inhibitor for use in spraying and dipping applications for corrosion-sensitive steels. SG-263 dries on the metal surface and lowers the surface tension. At concentrations of 0.3% the metal surface remains paintable. At higher use concentrations the product spreads on the surface therefore mechanical disturbances of the corrosion protection film are corrected. When using ceramic modules the product is about 70% reclaimable by ultrafiltration. The passivation SG-263 is used with make-up values of 0.2 - 0.5% depending on the desired degree of corrosion protection. When stored in a dry tempered areas corrosion protection of up to 6 months can be achieved.

### **Passivation SG-FE Protect**

Passivation SG-FE Protect is a special inhibitor preparation which is primarily used as a base for the production of liquid corrosion protection medias, rinsing solutions or cleaning baths. The biggest advantage is the corrosion protection during and after the actual process! Furthermore it can also be used as a corrosion inhibitor in water cycles. The product can be used in dipping and spraying processes and reliably protects bare steel parts with internal storage for several months. Passivation SG-FE Protect is also ideal for the oil-free after treatment of phosphated workpieces. Treat parts can are still paintable.

Passivation SG-FE Protect is easy to remove in alkaline cleaners.

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SG-Galvanobedarf GmbH

## *Description of the SG product range*

### **Wastewater treatment**

#### **Defoaming agent SG-460 and SG-461** (silane-containing and silane-free)

The defoaming agents are suitable for defoaming in wastewater treatment plants without the risk of creaming or flocculation.

#### **Flocculant SG-318 sulfate-free**

The Flocculant SG-318 is a sulfate-free powder mixture of inorganic absorbents and organic polymers with excellent precipitation and flocculation performance. Heavy metals and pollutants from the sewage fall out as solid deposit. After the separation the clear above water can be drained after inspection.

#### **Flocculant SG-351 sulfate-free**

The Flocculant SG-351 is a sulfate-free powder for the flocculation of heavy metals and solid material. Heavy metals and pollutants from the sewage fall out as solid deposit. After the separation the clear above water can be drained after inspection.

#### **Flocculant SG-AF 411**

In the solid-liquid separation technique flocculants are used for waste water treatment, thickening and suspensions. The addition of the liquid Flocculant SG-AF 411 causes flocculation (coagulation) of the solid particles and the formation of large, stable flocs. This allows sedimentation and drainage of the sludge.

#### **Flocculant SG-K (complex-splitter)**

Flocculant SG-K is a special flocculant for complex containing wastewater. Strong acting complexing agents such as EDTA or amines are used because of the high stability of the complexes for example in chemical copper, chemical nickel, stripper processes. Just this for the production desired operation property, brings great difficulties in the treatment of the wastewater. With normal flocculants it is not possible to destroy the complexes or to remove the metals from the used solutions. In this cases the use of the Flocculant SG-K is appropriate. From aqueous solutions so most metals can be precipitated and the complexing agents are not destroyed and may be reused under certain circumstances.



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## *Description of the SG product range*

### **Technical articles**

**We also supply all technical equipment and spare parts for electroplating:**

<b>Anode hocks</b>	<b>in all lengths</b>
<b>Anode bags</b>	<b>in any size</b>
<b>Anode baskets</b>	<b>in every version</b>
<b>Immersion heater</b>	<b>in all sizes and designs</b>
<b>Filter pumps</b>	<b>in every size, for every purpose</b>
<b>Filter paper</b>	<b>in all designs and many types of paper</b>
<b>Filter candles</b>	<b>in different designs</b>
<b>Filter</b>	<b>tools and spare parts</b>
<b>Rectifier</b>	<b>in every size and design</b>
<b>Cable contacts</b>	
<b>Laboratory</b>	<b>hardware and chemicals</b>
<b>pH indicator papers</b>	<b>different manufacturers</b>
<b>Swimming balls</b>	<b>in different sizes</b>
<b>Process tanks</b>	<b>in all sizes and designs</b>
<b>Barrels</b>	<b>in every version, including hook drums</b>

.....and much more

**Also planning, execution, rebuilding and reconstructing of electroplating lines!**

**We also gladly supply all laboratory and standard chemicals to you.**

**Just request an offer without obligation.**

**We will surely make you a good offer!**

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