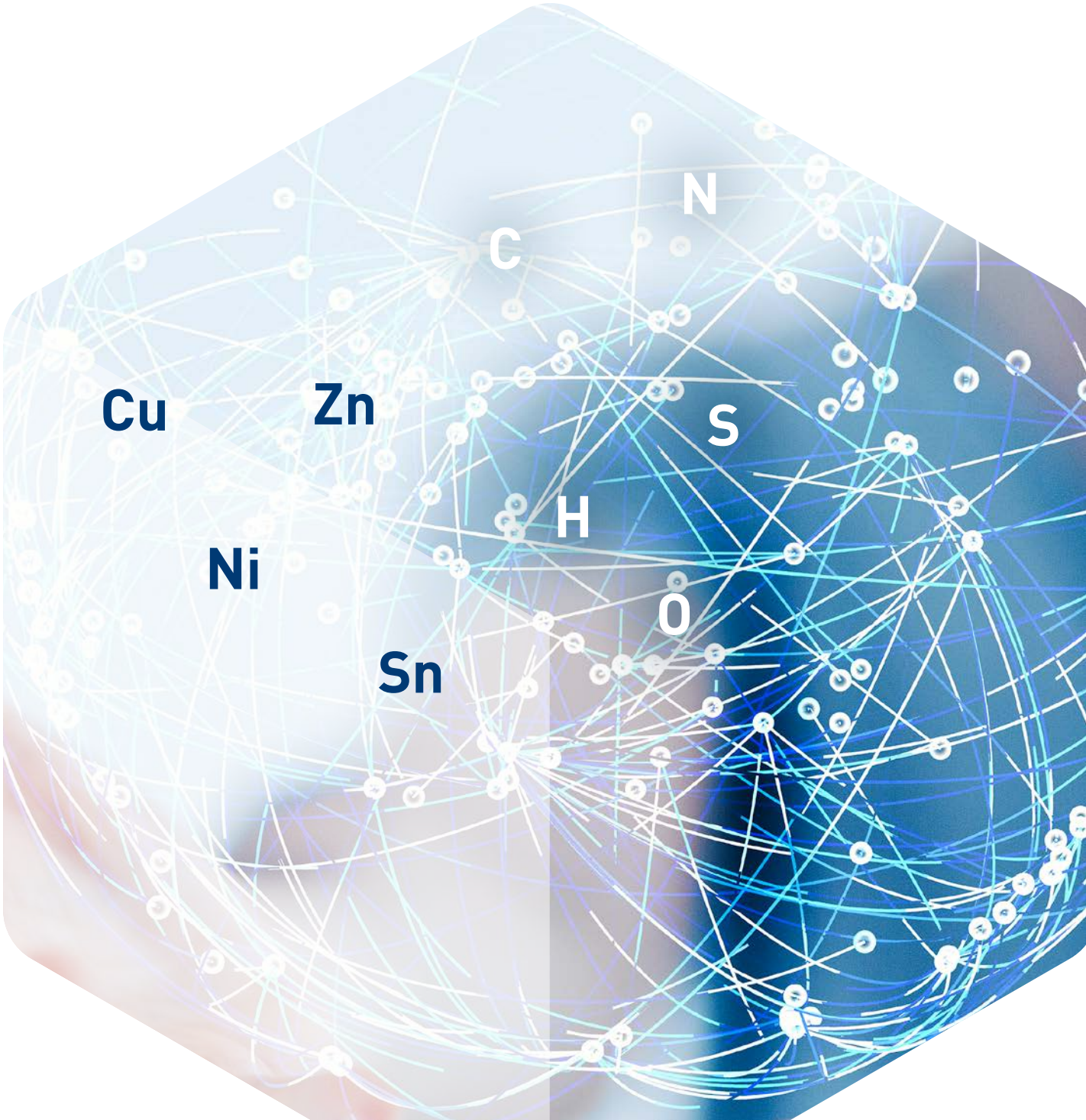
TIBCHEMICALS

Product Program

Salts and intermediates for advanced industrial applications



Copper chemicals

Product name / chemical description	Form / characteristic	Typical metal content / concentration	Typical application
Copper(II) nitrate	Hemipentahydrate and as a solution	27 % Cu (crystalline) 15 – 20 % Cu (solution)	Catalyst applications, metal finishing, textile industry
Basic copper nitrate	Powder	53 % Cu	Source of oxygen in airbag propellant formulations
Copper(I) chloride	Pearls, Ø particle size approx. 100 µm	64 % Cu	Synthesis of pigments, catalyst applications
Copper(II) chloride	Anhydrous, dihydrate and as a solution	46 % Cu (anhydrous) 37 % Cu (crystalline) 15 – 19 % Cu (solution)	Formulation of fungicide / herbicide, catalyst applications
Copper(II) oxichloride	Powder	57 % Cu	Formulation of fungicide / herbicide, catalyst applications
Copper(II) acetate	Monohydrate and as a solution	32 % Cu (crystalline) 4 % Cu $(CH_3COO)_2$ (solution)	Formulation of fungicide / herbicide, textile industry, metal finishing
Copper(II) oxide	Powder	78 % Cu	Copper plating, wood preservation, pigments
Copper(II) oxide HSSA	BET > 60 m²/g	73 % Cu	Heterogeneous catalysis applications
Copper(II) oxide EPG	Ultra pure	79 % Cu	Copper source as replenisher for PCB production
Copper(II) hydroxide carbonate	Bulk density > 1.5 g/cm³	55 % Cu	Heterogeneous catalyst applications, wood preservation
Copper(II) hydroxide	Powder	64 % Cu	Heterogeneous catalyst applications, wood preservation, pigments
Disodium copper citrate	Solution	8 % Cu	Lubricant applications
Copper sulphate solution EPG	Solution	75 g/l Cu	Basic chemical for copper plating
Copper fluoroborate	Solution	210 g/l Cu	Basic chemical for copper plating
Copper pyrophosphate	Crystalline and as a solution	34 % Cu (crystalline), up to 67 g/l Cu (solution)	Basic chemical for copper plating

Nickel chemicals

Product name / chemical description	Form / characteristic	Typical metal content / concentration	Typical application
Nickel sulphate	Heptahydrate and as a solution	21 % Ni (crystalline) 10 % Ni (solution)	Heterogeneous catalyst applications, metal finishing, textile industries
Nickel chloride	Hexahydrate and as a solution	23.5 % Ni (crystalline) 13.4 % Ni (solution)	Heterogeneous catalyst applications, metal finishing, pigment and textile industries
Nickel nitrate	Hexahydrate and as a solution	20 % Ni (crystalline) 14 % Ni (solution)	Heterogeneous catalyst applications, metal finishing, pigment and textile industries
Nickel hydroxide carbonate	Dust-free or as a powder	up to 48 % Ni	Heterogeneous catalyst applications, metal finishing, pigment industries
Nickel acetate	Crystalline	24 % Ni	Heterogeneous catalyst applications, metal finishing, eloxal applications
Nickel sulphamate	Solution	12 % Ni	Electrolytic nickel plating
Nickel phosphate	Solution	9 % Ni	Phosphating

Tin chemicals

Product name / chemical description	Form / characteristic	Typical metal content / concentration	Typical application
Tin(II) chloride	Anhydrous, dihydrate and as a solution	62 % Sn (anhydrous) 52 % Sn (dihydrate) up to 500 g/l Sn (solution)	Immersion tin plating, formulation of palladium-colloid activators
Tin(II) sulphate	Crystalline and as a solution	55 % Sn (crystalline) 125 g/l Sn (solution)	Immersion and electrolytic tin plating
TIB Stanal TS	Crystalline	43 % Sn	Stannous sulphate based formulation for the acid immersion tin plating on aluminium surfaces
TIB Stannocolor	Solution	219 g/l $SnSO_4$	Formulation for the electrolytic colouring of aluminium surfaces based upon tin sulphate
TIB SpeedPlate	Solution	10 % Sn	Formulation for the immersion tin plating on copper and copper alloy surfaces based upon tin sulphate
Tin(II) oxide	Tin oxide black	88 % Sn	Metal finishing
Tin(II) pyrophosphate	Crystalline	55 % Sn	Alloy plating
Tin(II) fluoroborate	Solution	320 g/l Sn	Alloy plating
Sodium Hexahydroxostannate	Crystalline and as a solution	43 % Sn (crystalline) 125 g/l Sn (solution)	Alkaline immersion tin plating on aluminium surfaces, white bronze plating
Potassium Hexahydroxostannate	Crystalline and as a solution	38 % Sn (crystalline) 160 g/l Sn (solution)	Alkaline immersion tin plating on aluminium surfaces, white bronze plating
Tin(IV) sulphide	Crystalline	99 – 100 % SnS_2	Solid lubricant and friction modifier
Redox S	Free-flowing powder	10 – 80 % $SnSO_4$	Chromate reducer for cement and mortar

Zinc chemicals

Product name / chemical description	Form / characteristic	Typical metal content / concentration	Typical application
Zinc chloride	Anhydrous, crystalline and as a solution	96 – 97 % $ZnCl_2$ (crystalline) 40 – 65 % $ZnCl_2$ (solution)	Manufacturing of plastics, battery industry, catalyst, hot-dip galvanising
Zinc bromide	Powder and as a solution	100 % $ZnBr_2$ (crystalline) and up to 60 % $ZnBr_2$ (solution)	Catalyst, battery production, oil industry
Zinc acetate	Powder	35 % Zn	Manufacturing of plastics, wood preservative
Zinc hydroxide carbonate	Fine powder BET > 40 m^2/g, d_{50} < 6 µm	56 % Zn	Cosmetics, rubber and bitumen industries
Zinc nitrate	Solution	680 g/l $Zn(NO_3)_2$	Fertiliser
Zinc citrate	Powder	32 % Zn	Metal finishing
Zinc fluoroborate	Solution	200 g/l Zn	Alloy plating
TIB Flux	Anhydrous, crystalline and as a solution	Zinc/ammonium chloride	Fluxes for hot-dip galvanising
TIB Flux 60 fluxes	Anhydrous, crystalline and as solution	Premium formulations with high $ZnCl_2$	Flux for hot-dip galvanising, pH control, iron removal

More specialty chemicals
Metal methanesulphonates

Product name / chemical description	Form / characteristic	Typical metal content / concentration	Typical application
Tin(II) methanesulphonate	Solution	300 g/l Sn	Tin plating, alloy plating
Copper(II) methanesulphonate	Solution	125 g/l Cu	Alloy plating
Silver(I) methanesulphonate	Solution	275 g/l Ag	Cyanide-free electrolytic and immersion silver baths, for Sn/Ag alloy plating
Bismuth(III) methanesulphonate	Solution	210 g/l Bi	Stabiliser for electroless nickel, alloy plating
Lead(II) methanesulphonate	Solution	450 g/l Pb	Bearing plating
Indium(III) methanesulphonate	Solution	120 g/l In	Alloy plating
Chromium(III) methanesulphonate	Solution	100 g/l Cr	Cr(III) passivation, trivalent chrome plating
Iron(II) methanesulphonate	Solution	120 g/l Fe	Iron plating
Cobalt(II) methanesulphonate	Solution	120 g/l Co	Passivation additive
Nickel(II) methanesulphonate	Solution	100 g/l Ni	Special alloys
Zinc methanesulphonate	Solution	120 g/l Zn	Metal finishing
Sodium methanesulphonate	Solution	120 g/l Na	Conductivity additive and grain refiner for MSA-electrolytes
Potassium methanesulphonate	Solution	200 g/l K	Metal finishing

Trivalent chromium solutions

Product name / chemical description	Form / characteristic	Typical metal content / concentration	Typical application
Chrom(III) chloride	Solution	50 % Hydrate 9 – 10 % Cr	Passivation, trivalent chrome plating
Chrom(III) sulphate	Solution	50 % Hydrate 8 – 9 % Cr	Passivation, trivalent chrome plating
Chrom(III) nitrate	Solution	74 % Hydrate 9 – 10 % Cr	Passivation
Chrom(III) hydrogenphosphate	Solution	20 % Salt 6 – 7 % Cr	Passivation

Acids

Product name / chemical description	Form / characteristic	Typical metal content / concentration	Typical application
Sulphuric acid	Solution	Up to 98 %	Metal finishing
Methanesulphonic acid	Solution	70 %	Metal finishing
Methanedisulphonic acid	Solution	50 %	Metal finishing
Hydroxyethanesulphonic acid	Solution	70 %	Metal finishing
Fluoroboric acid	Solution	50 %	Metal finishing
Sulphosuccinic acid	Solution	70 %	Metal finishing
Hydrochloric acid	Solution	32 %, technical grade	Hot-dip galvanising

Organic intermediates

Product name / chemical description	Form / characteristic	Typical metal content / concentration	Typical application
TIB Suract A25	Solution	30 % Di-4-methyl-2-amylestersulphosuccinate	Additive for electroless nickel plating, avoids pores
TIB Suract A40	Solution	40 % Di-isoamylester-sulphosuccinate	Additive for electroless nickel plating, avoids pores
TIB Suract B30 P	Solution	30 % Polysiloxanbetaine	Surfactant for degreasing and rinse baths
TIB Suract B35	Solution	35 % Cocoamidopropyl-aminoxide	Surfactant for copper plating baths
TIB Suract B38 C	Solution	38 % Capryl/caprinamidopropylbetaine	Surfactant for chloride-sensitive electrolytes
TIB Suract B40	Solution	40 % Caprylliminodipropionate	Salt-free surfactant, low foaming
TIB Suract N19	Solution	19 % Fatty alcohol ethoxylate C9 – C11, 6 EO	Surfactant stable in acids, for solubilising benzalacetone (TPB/TPB 10)
TIB Suract E00 P	Solution	Concentrate, contains polyetherpolysiloxane	De-foaming agent
TIB Suract ETG	Powder	99 % 2,2-Ethylendithiodiethanol	Complexing agent for precious metals (Ag, Sn/Ag)
TIB Suract TPB/TPB 10	Solution	Solubilised benzalacetone 3 %/10 %	Grain refiner for tin plating baths
TIB Suract NOS 10	Solution	34 % Alkylphenolethoxylatsulphate	Emulsifying agent for acid zinc plating baths
TIB Suract Trigonellin 20	Solution	20 % Niacin betaine	Brightener for alkaline zinc and zinc/nickel plating baths
TIB Suract DRY	Solution	Aqueous solution of modified fatty amides	Hydrophobing agent
TIB Suract CR-H	Solution	Concentrate	Fluorine-free surfactant, wetting agent for chrome plating baths
TIB Suract AC 101	Solution	Concentrate, contains oleic acid amidoethanol-polyethoxylate	Metal finishing

Product name / chemical description	Form / characteristic	Typical metal content / concentration	Typical application
TIB Suract L 101	Solution	Concentrate	Formulation for alkaline degreasing
TIB Lux OV/OV 21	Solution	Concentrate	Peroxide stabiliser
TIB Lux NPS	Solution	49 – 51 % Sulphonated naphtholpolyether	For high-performance acid zinc plating baths
TIB Lux BN 13	Solution	>98 % Naphtholethoxylate	For the formulation of brightener systems
TIB Stanno Plus	Solution	Concentrate	Additive for the electrolytic colouring of aluminium
TIB SpeedPlate Plus	Solution	Concentrate	Additive for immersion tin plating baths
TIB Stanal DG	Solution	Concentrate	Cleaner for alkaline degreasing
TIB Stanal DG-B	Solution	Concentrate	Surfactant mix as a booster for alkaline degreasing baths
TIB Stanal CP	Solution	Concentrate	Additive for nitric acid pickling baths
TIB Stanal CL	Solution	Concentrate	Additive for sulphuric acid pickling baths
TIB Stanal TP	Solution	Concentrate	Additive for immersion tin plating
Potassium methanedisulphonate	Crystalline	>99 %	Catalyst for chromic acid electrolytes
TIB Clean A 101	Solution	Concentrate	Emulsifying alkaline cleaner
TIB Clean A 700	Powder	Concentrate	Alkaline cleaner
TIB Clean H 300	Solution	Concentrate	Novel cleaner based on iron chloride

Organic intermediates

Product name / chemical description	Form / characteristic	Typical metal content / concentration	Typical application
TIB Clean H 400	Solution	Concentrate	Phosphoric acid cleaner
TIB Clean H 500	Solution	Concentrate	Acid cleaner
TIB Clean H 501	Solution	Concentrate	Regenerator for TIB Clean H 500
TIB Clean H AD01	Solution	Concentrate	Concentrated cleaning additive for pickling baths
TIB Clean H AD02	Solution	Concentrate	Cleaning additive for pickling baths
TIB Inhibitor Standard	Solution	Concentrate	Pickling inhibitor
TIB Inhibitor Premium	Solution	Concentrate	Pickling inhibitor for HCl and H_2SO_4
TIB Additive F Dry	Solution	Concentrate	Drying aid for flux baths
TIB Additive F Wet	Solution	Concentrate	Surface tension modifying additive for flux baths
TIB Additive H Foamkill	Solution	Concentrate	Anti-foam agent for pickling baths
TIB Additive H Fumekill	Solution	Concentrate	Lowers the out-gassing of hydrochloric acid baths
TIB Finish Polycoat	Solution	Concentrate	Zinc passivation containing Zr and organic additives
TIB Finish CH06	Solution	Concentrate	Zinc passivation based on Cr(VI) and polymers
TIB Finish CH03	Solution	Concentrate	Zinc passivation based on Cr(III)

Other products

Product name / chemical description	Form / characteristic	Typical metal content / concentration	Typical application
Manganese nitrate	Solution	12 % Mn	Fertiliser
Lead(II) fluoroborate	Solution	500 g/l Pb	Alloy plating
Ammonium chloride	Technical grade	99 %	Hot-dip galvanising
TIB Additive F Ferrexal	Powder	Special formulation	Removes iron from flux baths
TIB Additive F Neutraliser	Powder	Special buffer	pH correcting agent for flux baths

Recycling

An essential component of an environmentally sustainable production is the careful and efficient use of natural resources. By recycling waste into secondary raw materials, TIB Chemicals promotes an ecologically sensible production of high-quality products through closing the material cycle.

As an authorised recycler, TIB Chemicals recovers metal containing wastes and residues that accumulate during our customers' processes.

Resulting from many years of experience reprocessing zinc, copper and tin, we are considered a reliable partner with expertise and knowledge of how to assist you. TIB Chemicals has authorisation to use, in its own production facilities, secondary raw materials from both Germany and other regions and countries. Through an extensive range of notifications and authorisations, TIB Chemicals processes large volumes of secondary raw materials in an environmentally friendly manner.

We would be pleased to receive any enquiries regarding your waste materials, so that we can evaluate them on an individual basis. TIB Chemicals overall goal is to deliver high-quality products to its customers and where possible to utilise their wastes: a complete solution from a single source.

TIBCHEMICALS

Mitglied im ZVO Zentralverband Oberflächentechnik e.V.

MITGLIED IM INDUSTRIEVERBAND FEUERVERZINKEN

Member AGA Zn American Galvanizers Association Protecting Steel for a Sustainable Future

GALVANIZERS ASSOCIATION

[InitiativeZink Zn]

VSV USUZ Vereinigung Schweizerischer Verzinkereien Union Suisse des Usines de Zingage

TIB Chemicals AG
BU Metal Chemicals & Finishing Products
Muelheimer Strasse 16–22
68219 Mannheim
Germany

Tel.: +49 621 8901-800
Fax: +49 621 8901-1800
E-mail: moc@tib-chemicals.com

www.tib-chemicals.com

Recycling
Tel.: +49 621 8901-408
Fax: +49 621 8901-1408
E-mail: recycling@tib-chemicals.com

www.janus-wa.de
MOC_PP_0518_EN