

# Zinc Chemicals

high-value products for industry  
and galvanising





## Leaders in quality and service

TIB Chemicals originates from the merger of Goldschmidt TIB Germany and Goldschmidt Quimica de México. As manufacturer of specialised Basic Chemicals, innovative Inorganic Specialty Chemicals and Coating Systems, the company supplies to a worldwide market.

The largest production facilities of TIB Chemicals are located in Mannheim (Germany) as well as San Luis Potosi (Mexico). The sales and marketing organisation operates globally, with representations on all continents.

Employing approximately 350 qualified personnel, the TIB Chemicals manufacturing history dates back over 130 years of tradition and know-how. With a yearly production of more than 400.000 tons of chemicals, TIB Chemicals generates revenues of over € 120 million.

The yearly growth of TIB Chemicals' accrual rate is above the average for the industry. High-quality products, custom-made solutions and a flexible distribution and logistics service for our entire customer base are the basis of our success. Customer requirements are met with prompt and individual attention. We thereby focus on our main target, to increase and to enhance the business success of our clients.

Subdivided into three business units, the company operates Basic Chemicals, Inorganic Specialty Chemicals and Coating Systems. Combined they form a strong unit with a solid financial base and with the logistic and organisational structure of a large international enterprise.

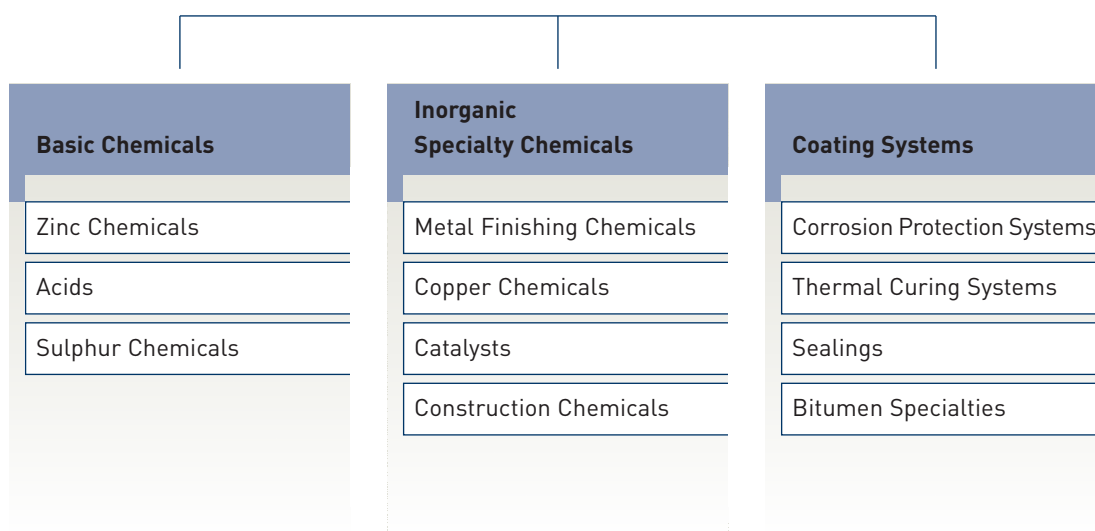


*TIB Chemicals successfully passed certification for the standards according to ISO 9001:2000.*





## TIB CHEMICALS



The three business units of TIB Chemicals produce and sell:

- ⚡ **Basic Chemicals** such as zinc chemicals, acids or sulphur chemicals, for chemical companies, the metal industry, the hot dip galvanising industry, the electroplating industry, the textile and plastic industries, for water treatment and for the production of food and beverages
- ⚡ **Inorganic Specialty Chemicals** based on the elements tin, zinc, copper and bismuth. These special compounds are used as electroplating chemicals in the electronics and metal industries, as copper chemicals in the automotive and chemical industries, as catalysts in the resin and paint industry, and also in chromate reduction for the construction industry
- ⚡ **Coating Systems** based on two component liquid polyurethane and epoxy systems, which have been developed as anticorrosion protection for the pipeline industry, for the valve-making industry, as well as for sewage outfall, water treatment and power plants. Thermal curing systems for electroplating, tool manufacturing and the packaging industry. Sealing compounds for gas and heating systems. Furthermore, modification and oxidation of bitumen as well as the production of bitumen-based systems for road surfaces

On the following pages, you will find our **Zinc Chemicals**.



## Zinc Chemicals – important basis for a wide range of applications

TIB Chemicals is one of the largest producers of **zinc chloride solution** in Europe. Beside zinc ashes and zinc-rich stripping solutions, hydrochloric acid is one of the most important raw materials for the production of zinc chloride raw solution. With our own tank ship, we handle more than 100.000 tons of hydrochloric acid per year and can hence ensure a smooth continuous supply. The zinc chloride raw solution is the basis for the manufacture of zinc chloride solutions in different concentrations and qualities. Our customers mainly come from the chemical industry. They use our zinc chloride solution for the fabrication of bactericides, fungicides, plastic stabilisers, zinc soaps and many more products. The zinc chloride raw solution is also used for the production of **fluxes** and **zinc chloride powder**. These products are mainly needed in metal surface finishing, for example for the pretreatment in hot dip galvanising.

Our product range of zinc chemicals is completed by **zinc ammonium chloride**, **zinc bromide** (solid, liquid), **zinc nitrate solution**, **zinc carbonate** and **zinc oxide**.

In addition to our own production, we optionally offer toll-manufacturing – also with customer-owned packaging and labelling, if requested.

The supply of our liquid products can be effected in small packaging such as containers, but also in complete street tank cars or rail tank wagons. With regard to packaging of our solid products, we are completely adapted to our customers' requirements. By default, we deliver in steel drums with PE-inlet, in which our products can be stored for a very long time. Especially, for zinc chloride powder, smaller quantities can be offered in reclosable plastic buckets with PE-inlet or in plastic bags with PE-inlet. Thanks to the good infrastructure of our production site in Mannheim, we can deliver to our customers via street, rail or ship.



*Warehouse zinc chloride production*



*Our own tank ship*



## Zinc chloride – quality in liquid and powder form

We produce our **zinc chloride solution** (aqueous solution) in concentrations of 35–65 %. Individual quality requests from our customers, for example concerning heavy metal concentrations or organic contamination and nitrogen compounds, can be considered.

As a special production item we offer also a **zinc chloride solution approx. 13 % dissolved in Tetrahydrofuran (THF)**.

Transport is effected in street tank cars or rail tank wagons.  
Smaller quantities can also be supplied in IBC.

**Zinc chloride powder** in free-flowing quality is packed in steel drums containing 300 kg of powder or, for special applications as electroplating, in plastic buckets or bags containing 25 kg of powder.



*Filling station for tank wagons and street tank cars*



*Sampling*



*Reactor interlocking*



*Flux standard packaging*



## Fluxes – economical and efficient

Our fluxes are mainly used in hot dip galvanising for the pretreatment of steel surfaces. They are also needed for the pretreatment of metals before soldering and welding. We can offer to our customers a complete range of standard, acid-buffering and low-fume fluxes.

Recently, we have added an iron-precipitating flux to our product range: **TIB Flux Ferrokill (“extra strong” version = TIB Flux Ferrokill ES)**. This patented flux was specially developed for the requirements of our customers. TIB Flux Ferrokill is an acid-buffering universal flux for the hot dip galvanising process. Ferrokill is different from all other known fluxes in its characteristic to autonomously oxidise unwanted iron enrichments and to precipitate the accumulated iron as iron hydroxide sludge. Consequently, our customers can remove, on site, undesirable iron from the flux bath by simple filtration.

All our fluxes are produced as free-flowing powder and packed in reclosable steel drums containing amounts of 200–300 kg, depending on the composition of the product. Fluxes can be stored in these drums for long times without quality loss. If requested, certain fluxes can also be manufactured as ready-made solutions and supplied in street tank cars or IBC.

As an additional service, we can offer to our customers the recycling or the reconditioning of their used flux baths, filter dusts, zinc rich stripping solution and zinc ashes. The necessary analyses for the control of the flux baths are performed in our analytical laboratory. The remaining residues from the recycling process are disposed of according to regulations in our own, officially authorised landfill.



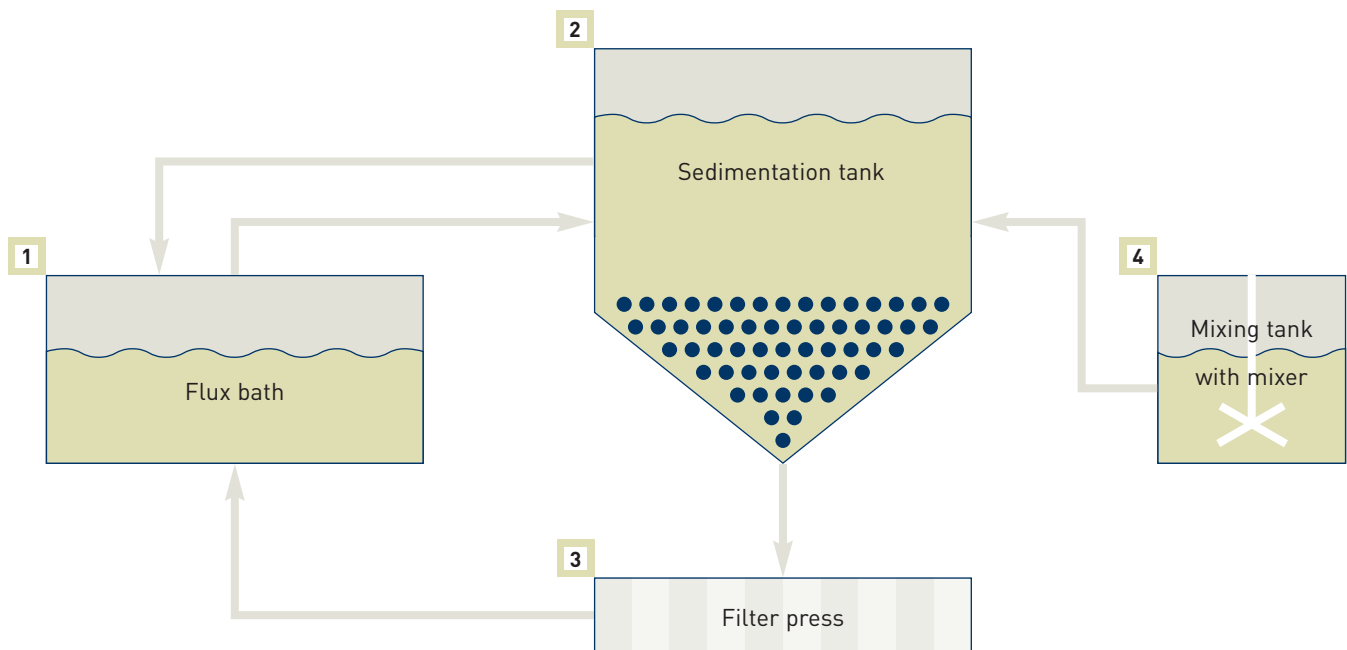
*Spent flux recycling plant*



*Analytic laboratory*



## TIB Flux Ferrokill/Ferrokill ES – a description of the iron precipitation process



### A perfect cycle

- ❑ A part of the flux bath (1) is pumped into the sedimentation tank (2)
- ❑ At the same time, Ferrokill dissolved in water is pumped with a dosage pump from the mixing tank (4) into the sedimentation tank (2)
- ❑ The iron sludge sediment is separated over a filter press (3) and is disposed of in a controlled way
- ❑ The filtrated and iron-free flux bath solution is pumped back into the flux bath (1) in such a way that both flux content and pH value increase as desired
- ❑ The flow rate of the treated flux and the dosage of the added TIB Flux Ferrokill depend on the production conditions



## TIB Flux products at a glance

Fluxes for dry galvanising					
	Galvanising of pieces	Galvanising of small parts	Galvanising of wires	Galvanising of steel strips	
TIB Flux D 1100	■	■	■		zinc ammonium chloride double salt
TIB Flux 60	■	■	■		standard flux
TIB Flux 60 SP	■	■			flux with acid buffer
TIB Flux SK	■	■			flux for acid correction
TIB Flux Ferrokil / ES	■	■			flux for iron precipitation
TIB Flux 69 S	■		■		low-fume flux
TIB Flux 72	■	■		■	low-fume flux
TIB Flux 73 S	■	■		■	low-fume flux
TIB Flux RA	■			■	low-fume flux
TIB Flux RSP	■				low-fume flux with acid buffer
TIB Flux RK	■				low-fume flux for acid correction



Hot dip galvanised products



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