



# More than just a Zinc Phosphate

Zinc Phosphate ZP 10

**heubach**  
COMPETENCE IN COLOR

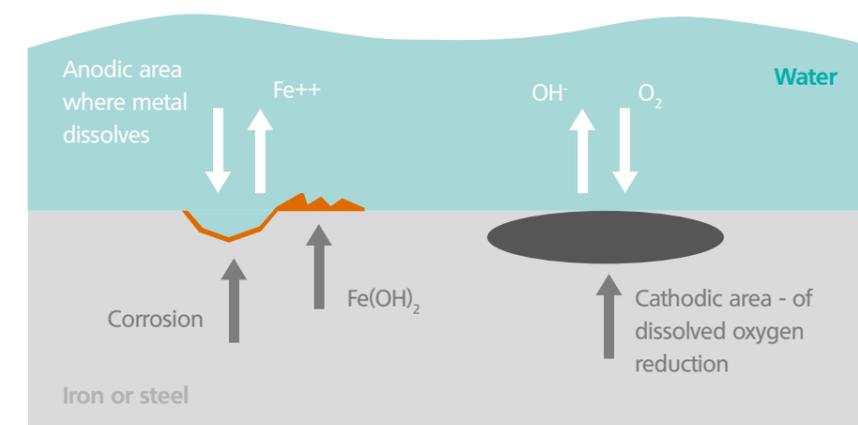


### Zinc Orthophosphate Hydrate

Corrosion can be inhibited by chemical and/or electrochemical (Active Pigments) or physical (Barrier Pigments) processes of anti-corrosive pigments. Heubach initiated the replacement of chrome-based anticorrosives and became the world market leader in this field. The first chrome-free anticorrosive was the standard zinc phosphate.

Zinc Phosphate ZP 10 is a micronized white anti-corrosive pigment for the application in protective coatings, suitable for a wide range of different primer applications. It is easy to disperse and shows a low solubility behaviour. Therefore it provides high compatibility with both solvent and water based resins.

### The Corrosion Cell



The corrosion of iron is an electrochemically driven process of energy exchange. With the presence of humidity iron passes into solution at the anode and hydroxyl ions are formed out of water and oxygen at the cathode.

Due to the existence of an electrolyte there is the possibility for the electrons to react at the cathode with the environment. The result is the formation of rust (Fig. 1).

Fig. 1 The formation of rust, a corrosion cell

## Benefits

Benefits compared to other zinc phosphates:

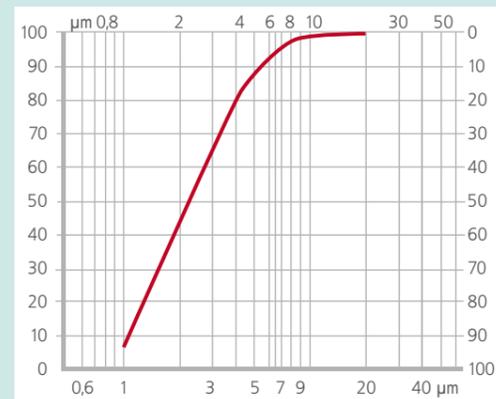
- › Optimized particle structure
- › Very narrow particle size distribution
- › Excellent dispersibility
- › Adjusted water soluble content
- › Improved protective performance



## Technical data

Zinc as Zn [%]	50.5 - 52.0	ISO 6745
Phosphorous as PO <sub>4</sub> <sup>3-</sup> [%]	47.0 - 49.0	ISO 6745
Loss on ignition 600°C [%]	8.5 - 13.0	ISO 6745
Water-soluble chloride [%]	max. 0.025	acc. to ISO 787, Part 13
Water-soluble sulphate [%]	max. 0.05	acc. to ISO 787, Part 13
Conductivity [μS/cm]	max. 150	ISO 787, Part 14
pH	6.0 - 8.0	ISO 787, Part 9
Lead as Pb [ppm]	max. 10	ICP
Cadmium as Cd [ppm]	max. 10	ICP
Density [g/cm <sup>3</sup> ]	typ. 3.3	acc. to ISO 787, Part 10
Bulk density, untamped [g/cm <sup>3</sup> ]	typ. 0.4	acc. to ISO 787, Part 11
Bulk density, tamped [g/cm <sup>3</sup> ]	typ. 0.8	acc. to ISO 787, Part 11
Oil absorption value [g/100g]	typ. 20	ISO 787, Part 5
Sieve residue 32 microns [%]	max. 0.01	acc. to DIN 53 195
Average particle size [microns]	2.0 - 3.5	Coulter Multisizer 3

## Particle size distribution [Coulter Multisizer 3]



## Zinc Phosphate ZP 10

504h Salt Spray (ASTM B 117-11)  
DIN EN ISO 9227: 2012-09

Primer: Solvent based short-oil alkyd  
DFT: 70 microns  
Substrate: Cold rolled steel panels ST 1205



Control



ZP 10



Comp. zinc phosphate

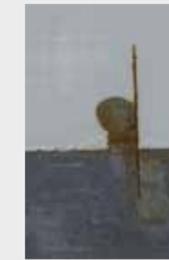
## Zinc Phosphate ZP 10

624h Salt Spray (ASTM B 117-11)  
DIN EN ISO 9227: 2012-09

Primer: Solvent based epoxy  
DFT: 70 microns  
Substrate: Cold rolled steel panels ST 1205



Control



ZP 10



Comp. zinc phosphate

## Zinc Phosphate ZP 10

480h Salt Spray (ASTM B 117-11)  
DIN EN ISO 9227: 2012-09

Primer: Waterbased alkyd emulsion  
DFT: 70 microns  
Substrate: Cold rolled steel panels ST 1205



Control



ZP 10



Comp. zinc phosphate





#### Our service

At Heubach, customer satisfaction comes first. The performance of anti-corrosion pigment depends on a number of factors (binder agent system, base coat, formulation etc.) all of which can be demonstrated in practical tests. Accordingly the identification of the right anti-corrosive pigment for your paint or coating application can prove a complicated undertaking.

In our laboratories we investigate the corrosion behavior of our products in a variety of different binding agents. Supported by extensive laboratory facilities, Heubach's technical specialists are always on hand to assist you in identifying the right solution, no matter how challenging your task.

With active service centers both globally and regionally we provide our customers with the technical support essential for the implementation of customer-specific requirements and solutions.





Our product specifications, application information and any other information in this document is based on our current state of knowledge at the Revision Date mentioned below. They are non-binding and cannot be taken as a guarantee. The processing company must establish the suitability of individual products itself. As their use lies beyond our knowledge and control, we cannot accept any liability relating to the use of our products in particular applications. In addition to that, the legal rights of third parties must always be considered. The specification agreed between the customer and ourselves is the basis upon which our general sales and delivery conditions are set and is the deciding factor concerning any liabilities. Our standard specification is then valid if no specification has been agreed upon between the customer and ourselves.

[de.sales@heubachcolor.com](mailto:de.sales@heubachcolor.com)  
[www.heubachcolor.com](http://www.heubachcolor.com)

**heubach**  
COMPETENCE IN COLOR

08/2021