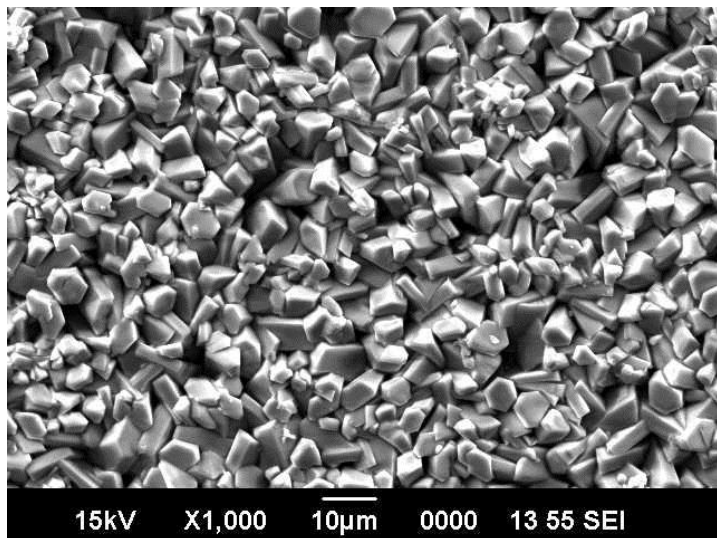


F 2206

## PHOSPHATA M 5652

GA 2079

Ni-free



**Phosphata M 5652** is a nickel-free manganese phosphating agent used to form dark grey/black manganese phosphate coatings on iron and steel and is characterised by its **especially easy bath handling** and its **fine crystalline layers**. Layer thickness, crystalline structure and density depend on the material and the prior treatment it has undergone (e.g. hardening or the like). **Phosphata M 5652** requires pre-activation. Layer thickness depends on the type and setting of pre-activation and the bath parameters for the phosphating bath and can be set in the range **beginning at approx. 2–3 µm**.

### **Phosphata M 5652**

- as **corrosion protection** in combination with suitable preservative agents
- for **decoration** with simultaneous **rust protection**, e.g.: if the rust protection provided by usual black oxidation layers is not sufficient, and therefore a thicker layer is possible
- as **anti-friction phosphating** to reduce wear in moving machine parts, as a surface primer for lubricants
- as **surface primer** for the following surface coatings

**Form of delivery:** In 20 l plastic canisters – in 200 l barrels – in 800 l containers (IBC)

**Application:** Immersion process

**Process components:**

1. **Preactivation** - for thinner layers **MVS 1123 A+B**
2. **Phosphata 5652** for bath formulation and supplementation of the bath
3. **Hydrogen peroxide** (35 wt %) to regulate the iron concentration (Fe points)
4. **Manganese carbonate** to correct the free acid ratio FSV

**Bath formulation, orienting:** For every 100 l of phosphating bath are required 10 l (13.5 kg) of **Phosphata M 5652** to achieve a total acidity level of  $58 \pm 5$  total acidity points (GS).

**Treatment process:** Cleaning – rinsing – pickling (if required) – rinsing – (pre-)rinsing – phosphating – rinsing – after-rinsing – greasing – drying

**The best process conditions are established when the plant is commissioned and must be empirically recalculated with every change in the characteristics required of the phosphating agent.**

**Notes:** Thick layer manganese phosphating baths should not be overloaded when inputting material.  
The amount used should be proportional to the volume of the bath.  
Overloading the bath when forming thick layers withdraws a great quantity of manganese II from the bath.  
This could cause a reduction in the free acid ratio and as a result increase the "degree of pickling".  
(The bath solution turns acidic).  
Regulation of the free acid ratio using manganese II carbonate then becomes necessary.

**Parameters:** **Depending on the demands** on the manganese phosphate layer!  
The following information is provided for orientation:

Operating temperature:	95–98 °C
Treatment time:	5–30 min.
Concentration:	50–60 total acidity points (orienting) <b>5.5 ± 1 FSV</b> max. 10 Fe II points max. 5 g/l Fe II
pH-range:	2.0 ± 0.1
Layer thickness:	from 2 µm
Coating weight:	from approx. 5 g/m <sup>2</sup>

**Pre-treatment:** All impurities must be removed from the metal surface before the phosphating process is initiated.  
We recommend our **Alkalit products** for cleaning/degreasing.  
We would recommend our **Rostalit products** if pickling is required.  
A brief pickling process can also be useful after mechanical descaling.

**Rinsing:** Careful rinsing is required after each processing step.

**Aftertreatment:** All workpieces should be greased subsequently to the phosphating process.  
The following products are available to you for aftertreatment purposes:  
**DEWE Fluid** dewatering agent  
**Emulsin** corrosion protection emulsion

**Bath control:** The bath can be controlled in accordance with the M 105 + M 106 data sheets.

**Bath supplementation:**

For each lacking total acidity point, for 100 l phosphating bath 200 ml (270 g) of **Phosphata M 5652** are required.  
Bath supplementation should be undertaken **at short intervals** so that not more than **2 total acidity points** have to be supplemented at one time.  
It is better to undertake continuous supplementation.

### Regulating Iron-II: (Fe-II-regulation)

If the iron concentration rises above 5 g/l, i.e. above 10 Fe-II points, the Fe-II concentration must be reduced.

An oxidation process is carried out using hydrogen peroxide.

The Fe-II is oxidised to Fe-III. The Orthophosphate in the bath forms poorly soluble Fe-III phosphate and thus sludge.

It is advisable therefore to correct for iron at the end of the work process.

This lets the sludge settle in an calm phase.

If disregarded, the iron III phosphate can otherwise settle as fine, white-yellow dust on the work piece surfaces.

### Iron-II-removal:

Approx. 80 ml of hydrogen peroxide (35 wt %) per 100 l bath are required to remove 1 Fe-II point = 0.56 g/l Fe. Hydrogen peroxide is added with 5 times its volume in water – slowly while stirring.

Once thoroughly mixed, an amount of manganese carbonate (e.g. 80 g) equal to the amount of the previously added hydrogen peroxide is then added to the bath.

Again, it should be well mixed.

The free acid ratio can be stabilised in this way and the deficient manganese II replaced.

After a longer period of inactivity, the bath's parameters must be checked and, if necessary, corrected.

### Supplementing the bath after desludging or for thicker layers:

After desludging the bath, it may be necessary to proportionally refill the bath with newly prepared bath solution.

For each lacking total acidity point, for 100 l phosphating bath 200 ml (270 g) of **Phosphata M 5652** are required.

### Environmental protection:

In accordance with Federal Water Act (WHG) **Phosphata M 5652** is a class 1 (WGK) substance hazardous to water.

### Product safety:

In accordance with the German Ordinance on Hazardous Substances **Phosphata M 5652** is subject to be labelled.

### Hazard symbol:



GHS05

Signal word: Danger

For further specifications refer to the EC safety data sheet.

### **Safety measures:**

Before using and handling **Phosphata M 5652**

- Refer to the EC safety data sheet!
- The instructions for use must be observed.
- Wear suitable protective clothing.

In case of contact with the eyes: Thoroughly rinse with water for at least 15 minutes. Immediately seek an eye specialist.

The accident prevention regulations specified by the Professional Association Chemistry (BG Chemie) for handling corrosive substances must be adhered to!

**Materials used for containers and heating elements:** Chrome nickel steel, material no. 1.4571

### **Maintenance of the bath container and heating elements:**

The bath container and especially the heating elements have to be cleaned thoroughly from time to time. In order to do so, the phosphating bath solution is pumped out into another bath container, e.g. emptied rinsing bath.

After the clear bath liquid is fed back into the container, the working volume is topped up and the solution should be well mixed.

The total acid points are then determined, and **Phosphata M 5652** is added until the reference value is reached. Supplementation is undertaken as described above after calculation of the lacking total acid points.

**Storage:** In accordance with § 24 of the Ordinance on Hazardous Substances

Phosphating concentrates should be stored in heated storage rooms during the winter months (storage class 8 in accordance with VCI guidelines – corrosive substances)

### **Waste water:**

All waste water must be treated in accordance with statutory requirements and local regulations before it is allowed to enter the sewage system.

Modern phosphating plants work waste water free using a suitable rinse water system.

Please do not hesitate to contact us for further information.

### **Waste disposal:**

Waste code: Concentrate and bath solution: AVV 11 01 11\* *water based rinsing fluids containing hazardous substances*  
Sludge: AVV 11 01 08\* *phosphating sludge*

The used product and its solutions are to be treated as hazardous waste according to local statutory regulations.

**We offer:** Return of waste in accordance with § 25 et seq. KrWiAbfG.

Please do not hesitate to contact us for further information.

The container must be emptied of any residues.

Waste code no. for contaminated packaging: AVV 15 01 10\* (*Packaging containing residues of hazardous substances or contaminated with hazardous substances.*)

**Warranty:**

The information given here has been provided to the best of our knowledge and is based on our practical experience and laboratory tests, however we provide no guarantee.

Since we cannot influence a **differing use** of our products, we shall be liable only for the **delivery condition**. Our sales service and our development and applications department will be pleased to offer you advice on application issues (tel.: +49 9122 9868-19).