

METAL ACTIVATOR MANUAL

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Short description

Verzinkshop Metal Activator are mild acid salt crystals for derusting/deoxidizing and activating various metals before electroplating or conversion finishing. The solution works from room temperature to approx. 85 °C; Higher temperature accelerates operation and is often required for rust removal on steel. The solution is less aggressive than strong mineral acids and can usually be used at room temperature without local extraction.

Suitable for: steel, stainless steel, zinc (plate and casting), copper and copper alloys.

Safety

Wear PPE: goggles/face shield, acid-resistant gloves, and apron. For skin/eyes: rinse immediately and for a long time with plenty of water. Do not mix with other chemicals and avoid contact with alkali. Work neatly, prevent introduction and spillage.

Equipment

Tanks/baths: acid-resistant PP/PE/PVC or rubber-lined steel.

Heating: quartz immersion heater or other acid-resistant heater; ventilated work in heated baths.

Create solution (guide values)

Always test with clean test pieces first; Choose concentration, time and temperature based on results. After the activator, always rinse thoroughly cold before the next step.

Guidelines (g/L; times at room temperature, unless otherwise stated):

- **Steel** – activate: 30–60 g/L, 30–60 s.
- **Steel** – rust removal: 120–240 g/L, 2–5 min (higher temperature works faster).
- **Stainless steel** – activate: 120–240 g/L, 2–5 min at 65–85 °C.
- **Copper & copper alloys** – deoxidising: 30–120 g/L, 30–60 s.
- **Copper & copper alloys** – activate: 30–60 g/L, 30–60 s.
 - Heavily oxidized? Go up to **120 g/L** and keep the process **short**.
- **Zinc (plate)** – deoxidation: 7.5–15 g/L, 15–30 s.
- **Zinc casting** – before galvanizing: 7.5–15 g/L, 15–45 s.

The process

Use plastic hanging tools: hang larger parts on **nylon** thread or PP/PE hooks and submerge them hanging freely.

Small or loose parts can be put in a **nylon mesh bag** or **plastic basket**.

Tilt/slow movement when entering the bath to remove **air bubbles** from cavities.

Work with **plastic**. **No bare steel in or above the bath**.

Keep a **timer** for the chosen guideline; after the time, **rinse immediately cold, abundantly** and without drying on to the next step.

Maintenance

Small periodic additions of the salt to maintain the activity. Change when effectiveness decreases due to accumulation of dissolved metals, dirt or oil/grease.

Working conditions

- Temperature: ambient up to ~85 °C; higher = more active (needed for steel derusting).
- Ventilation: not required at room temperature; but when heated.
- Rinsing: always rinse thoroughly cold after the activator.

Technical characteristics

Application	Deoxidation/activation before electroplating or conversion finishing (steel, stainless steel, zinc, zinc casting, copper & copper alloys)
Temperature	Ambient up to ~85 °C ; higher temperature accelerates; required for steel derusting
Ventilation	No need for room temperature; Mandatory for heated baths
Tanks/baths	PP, PE or PVC; Alternative: steel with rubber/plastic lining
Heating	Quartz immersion heater or other acid-resistant heater
Rinse	Always rinse thoroughly cold after the activator

Problems and solutions

Insufficient activation	Too low concentration or too short a time	Increase concentration within guideline; extend time; Retest
Rust remains visible (steel)	Too low temperature or too short a time	Heat to 65–85 °C and 2–5 min ; if necessary to 120–240 g/L
Black/grey tarnish	Poor rinsing or introduction from pre-treatment	Rinse thoroughly cold immediately after activator ; improve rinsing/flow
Uneven result per side	Geometry/flow around the part	Move workpiece; improve positioning in the bath; slightly longer time
Bad works "lukewarm"	Bath partly exhausted/dirty	Small salt addition; In case of metals/oil accumulation: (partially) change

Warning!

The crystals are salty and acidic. Avoid contact with eyes, skin and clothing. Wear eye protection (goggles, goggles, or face shield), protective rubber gloves, and aprons when preparing solutions and while working with the solutions. Mix the product only with water and no other chemicals. The crystals and prepared solution are toxic when used internally.

Do not work with Verzinkshop products without first reading and understanding the safety information.

The safety data sheet can be found on the product page or can be requested from Verzinkshop.nl by e-mail: info@verzinkshop.nl

Do you have any questions? Contact us via:

Mail: info@verzinkshop.nl

Whatsapp or call: +31 6 28090022

www.verzinkshop.nl

Safety

Always wear a dust mask, respirator, gloves, and apron when necessary.

Always treat any chemical as if it could kill you.

Always label buckets and storage containers with a permanent marker so that you and others know what's inside.

Never pour water into acid; it can heat up and explode. Always pour acid into water. Never leave electroplating baths or other systems that use power unattended. These products may cause a short circuit and cause a fire.

Never come into direct contact with chemicals. They can cause serious burns or other damage and are very dangerous substances if not treated with respect. Never think you can get away without taking safety precautions! That is not possible!

Never leave the lids off the tanks when not in use. They will fall over!

Always work safely and ensure good protection and ventilation.

The safety data sheet can be found on the product page or can be requested from verzinkshop.nl by e-mail: info@verzinkshop.nl

Disclaimer

Did you find an error or something unclear in the manual? Please let us know via info@verzinkshop.nl

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