BONDERITE®

Non-Chrome Treatment for Coil

BONDERITE M-PA 5023
Next Generation Non-Chrome Passivation for Galvanized Steel

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The innovative and environmental friendly technology BONDERITE M-PA 5023 has similar characteristics to chrome (VI) based products. The product is compliant with RoHS* standards.

BONDERITE M-PA 5023 is applied at room temperature on clean surfaces. After application the surface must be thoroughly dried. The recommended coating weights are between 50 and 100 mg/m² silica. The coating weight can be determined by measuring silica with X-ray fluorescence spectroscopy.

Key Characteristics

- Free of hazardous components
- Meets RoHS and REACH** requirements
- Alkaline solution
- Not corrosive

Applications

- Galvanizing line
- Coil coating line

Benefits

- Chrome- and heavy metal-free
- Does not cause deposits and sludge
- Odorless easy handling
- Very good corrosion protection
- High temperature stability
- No overpickling of the material (spots)
- Very low zinc etching due to alkaline pH
- Flexible equipment application-spray, roll coater, LINEGUARD system

Sustainability aspect

Sustainability

- Free of chrome and other heavy metals
- High solid content

Process optimization

- Less maintenance work
- Work safety

* Restriction of Hazardous Substances Directive

** Registration, Evaluation, Authorisation and Restriction of Chemicals

Advancing Non-Chrome Technology to Higher Performance Levels

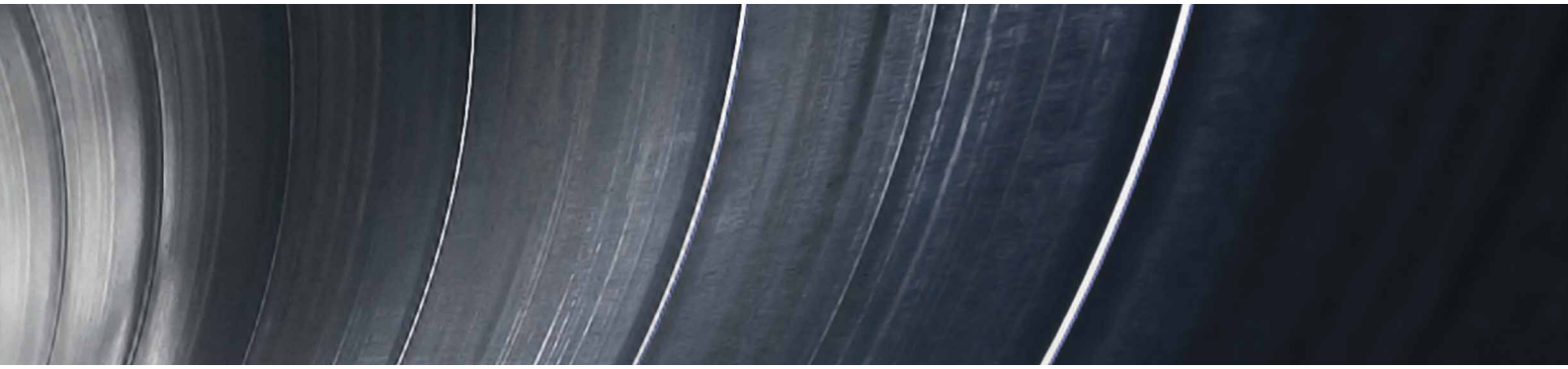
BONDERITE M-PA 5023 provides an excellent corrosion protection and paint adhesion and due to its' alkaline basis it is also compatible to metal working fluids in downstream processes. It forms a uniform, thin, transparent and colorless film.

Comparison of Passivation Technology

Requirement	Cr (VI)	Non-Cr 1st Generation	BONDERITE M-PA 5023
RoHS-compliant	Fail	Pass	Pass
Heavy metal-free, Fluoride-free	Fail	Fail	Pass
SST < 5 % WR after 48 h (DIN EN ISO 9227)	Pass	Pass	Pass
KTW < 5 % WR after 21 d (DIN EN ISO 6270-2 AT)	Pass	Pass	Pass
Stack test in KTW < 10 % WR after 28 d	Pass	Pass	Pass
Passivity – Electrochemistry – Cyclovoltammetry	Pass	Fail	Pass
Lubrication with forming emulsion (μ = 0.05 – 0.3)	Pass	Fail	Pass
Chemical resistance: alkaline and acidic cleaning, forming emulsion	Pass	Fail	Pass
Paint adhesion (PE, PU paints) powder coats appliances and architectural, Ecoat	Pass	Fail	Pass
Delamination with topcoat after 240 h exposure in SST (DIN EN ISO 9227)	Pass	Fail	Pass
Weldability	Pass	Fail	Pass
Appearance of substrate should be transparent and colorless	Pass	Pass	Pass

Henkel is a solution provider along the entire process chain for steel coils:

Pickling → Cold Rolling → Cleaning → Temper Rolling → MPT → **Passi-vation** → TOC



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