

Pigmentan MX Presentation – CZ Conference





Zinc and Chrome Free Anti-corrosive Pigments



Introduction



- Pigmentan products are based on magnesium oxyamino phosphate complexes - unique and new technology
- Patented technology for metal protection in paints, coatings, conversion coatings and additional applications
- One of only a few 'Green Technologies' available in the anti-corrosive market
- 4 In contrast to other 'Green Technologies', Pigmentan gives good anti-corrosive properties on ferrous and non-ferrous metals, and to both solvent and water based paints



Pigmentan MX



- A versatile new additive in the Pigmentan product range portfolio.
- All components are registered under REACh, EINECS,
 TSCA, AICS, ERMA and other regulation.
 - Suitable for most **solvent based** and **water based** applications.
 - Excellent high performing 1:1 replacement of all types of standard Zinc Phosphate anti corrosive pigments
- Excellent cost effective replacement of modified zinc phosphate grades.
 - Product is manufactured in Europe



Technology Key Benefits

- **Efficacy:** High efficacy patented Magnesium based protection for ferrous and non-ferrous metal
- 2 Cost effectiveness: Highly cost efficient replacement of both standard and modified Zinc Phosphate.







10% Pigmentan MX



Technology Key Benefits

³ Non-toxic:

 Does not contain any heavy metals such as Zinc, Chromium or Lead.

Environmentally friendly:

Does not require hazardous labelling.





Manufacturing Process



- Chemical reaction of individual components
 - Under precisely controlled conditions
- 2 Spray Drying
 - To required moisture content and PSD
- 3 Milling
 - To required particle size with tightly controlled particle size distribution
- Quality Control
 - PSD, moisture content, pH etc.
- 5 Packing and palletising
- Shipment



Pigmentan MX Market Segments



Market Segment	Product Type	Systems	
Automotive	Alkyd, Epoxy	Solvent Based	
General Maintenance	Alkyd	Solvent Based Water Based	
Industrial Coatings	Alkyd, Epoxy, PU, 2K Acrylic	Solvent Based Water Based	
Protective Coatings	Ероху	Solvent based	





Technology Background



Magnesium Oxy-Amino Phosphate



Pigmentan MX is composed of a magnesium oxy-amino phosphate complex.

Also contains a reservoir of excess magnesium.



Allows suppression of the cathodic reaction in addition to the anodic suppression and passivating properties.



Pigmentan Mechanism

ENVIRONMENT - containing moisture (H₂O), Oxygen (O₂)



Electrically conductive Metal substrate

Pigmentan Performance



Demonstration of Pigmentan MX performance by comparative laboratory studies





Alkyd Primer on Steel

200 hours SST, 50 Micron DFT primer



8% Pigmentan MX

10% Zinc Phosphate

10% Pigmentan MX



Epoxy Primer on Steel – Industrial application

1000 hours SST, 70 Micron DFT primer







6% modified Zinc Phosphate







Epoxy Primer on Steel – Automotive application



11% Pigmentan MX

11% Std Zinc Phosphate



Alkyd Primer on Steel – Industrial Coating



330 hours SST, 50 Micron DFT primer







4% Pigmentan MX

2% modified ZP

4% standard ZP



RADKA LABORATORY



RADKA LABORATORY



OVERVIEW raw materials for test with anticorrosion pigment PIGMENTAN

- ► 1K WB ANTICORROSION PRIMER, PVC 25%
- PIGMETNAN MX, dosage 6%
- Styren acrylic dispersion Icap Sira Acrilem IC 20
- Dispersing additive PATCHAM, Pat Add DA 603LV
- Flash rust additive LABEMA, Emadox A4
- Sample dispersion pigments on dissolver
- Stability of anticorrosion paint 1year

Description conditions for Anticorrosion tests

- Samples anticorrosion paints were applied 1-2 weeks after production
- Surface metal panel: Q-PANEL S-46
- **Σ** Type of application: steel hand applicator 300 μm
- Drying samples steel panels before exposition 28dys in laboratory conditions
- Condition SALTS SPRAY CHAMBER:
- Accelerated corrosion test was performed in a solar mist atmosphere according to ASTM D2247 and ISO 9227 12 h cycles
- (10 h of 5% NaCl solution at 35°C; 1 h drying 23°C; 1 h condensation humidity 40°C)
 Condition HUMIDITY CHAMBER:
- Accelerated corrosion test in an atmosphere of almost 100% relative humidity, Samples exposed to continuous condensed distilled water at temperature of 38°C± 2°C
 - Test was performed according to the ČSN 03 8131 standard.
 - After testing samples were evaluated according to the ASTM D 714-87, ASTM D 610-85 and ASTM D1654-92 standards.

Výrobní příkaz: 00 0550

1K WB AC PRIMER ACRILEM IC 20/PIGMENTAN MX

Datum výroby: 2019-09-23

Vyrobit: 250.00 g

PIGMENTAN MX/ACRILEM IC20/TEST DA 603L/EMADOX A4

Specificka hmotnost: 1.195		Hmotnostni sus	usina: 47.373 Objemova susina: 3		sina: 37.997	
ТР	Katalog	Nazev	•	Navazit g	Navazeno g	Poznamka
1	37 4700	VODA		22.63		
3	35 0604	PAT ADD	DA 603LV	1.38		
3	37 4700	VODA		1.38		
4	35 0034	PAT ADD	AF 34	1.00		
5	47 0005	TEXANOL		10.00		
6	37 3130	DIMETYL	AMINOETANOL	0.88		
7	37 4503	EMADOX	A4	0.75		
8	19 1600	PIGMENT	AN MX	15.00		
9	15 1585	BELOBA H	RGZW	30.00		
10	52 0024	ACRILEM	IC20/44	160.00		
11	35 0043	PAT ADD	AF 43	1.00		
11	47 0005	TEXANOL	_	5.00		
13	37 4309	ACRYSOL	RM 2020	0.50		
14	37 4301	ACRYSOL	ASE 60	0.25		
14	37 4700	VODA		0.25		
15	37 4350	BYK 420		0.50		
Hodnoty za recepturu			250.52	0.00		

Results after test Salt and Humidity Chamber Acrilem IC-20, Icap Sira, VP 550/2019 Pat Add DA 603LV, Emadox A4, Pigmentan MX



PIGMENTAN MX Anticorrosion efficiency Salt and Humidity Chamber

SALT CHAMBER - 240 hour					
BATCH NUMBER	RESIN	AC PIGMENT	DISPERGATOR	Thickness DFT [µm]	AC efficiency [%]
VP 550/2019	ACRILEM IC 20	MX - 6%	DA 603LV	64,6	64

HUMIDITY CHAMBER - 480 hours					
BATCH NUMBER	RESIN	AC PIGMENT	DISPERGATOR	Thickness DFT [µm]	AC efficiency [%]
VP 550/2019	ACRILEM IC 20	MX - 6%	DA 603LV	68,7	98

Summary

- Novel and Innovative Product
- ² Highly Effective Corrosion Protection
- Invironmentally and Eco Friendly
- Cost Effective 1:1 replacement of Zinc Phosphate
- Multi-Purpose Use, proven advantage on ferrous and non-ferrous metals
- Highly effective in general industrial, DIY, automotive, and protective coating
 applications



Contact information

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