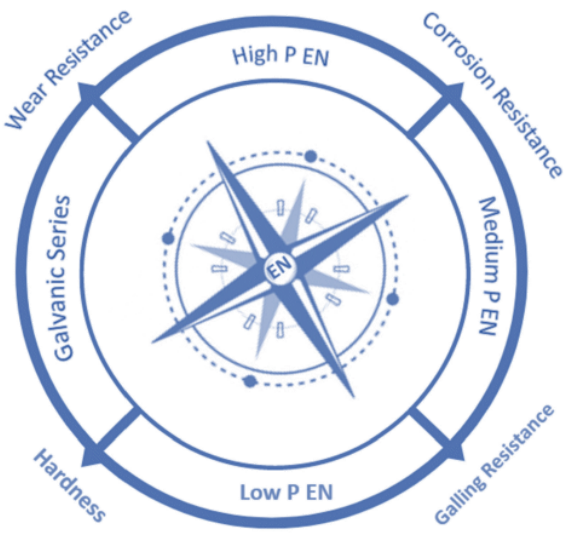


Corrosion Modeling Software and Corrosion Prediction Software Series

EN-Compass®: A Software Tool for Modeling and Prediction of the Corrosion Resistant Properties of Electroless Nickel Coatings

The Ultimate Software Solution to Costly Corrosion

Version 9.3

★ **Performance** ★ **Functionality** ★ **Usability**

Anytime Anywhere Any Device Any OS

No USB dongles No installation No Browser Plug-ins

Contact Us for Licensing Details

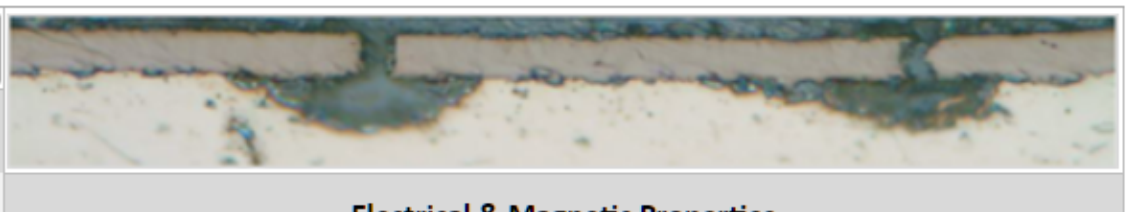
Why WebCorr | Performance Guarantee | Unparalleled Functionality | Unmatched Usability | Any Device Any OS | Free Training & Support | CorrCompass

Overview of EN-Compass:
Software Tool for Modeling and Prediction of Corrosion of Electroless Nickel Coatings

EN-Compass is the only device and OS independent software tool on the market for the modeling and prediction of corrosion of electroless nickel coatings. Designers, engineers, architects, consultants, or maintenance and inspection personnel can quickly assess and quantify the impact of electroless nickel plating on the remaining life of their components or systems anytime, anywhere, on any device running any OS without the need to install or download anything (Figure 1).

EN-Compass®: Modeling and Prediction of the Properties of Electroless Nickel Coatings **Version 9.3.6**

Phosphorus content in EN Coating (wt%)		10.00
Physical Properties		
Density	g/cm³	7.916
Melting Point	°C	914.50
Microstructure	Crystalline	HP
Mechanical Properties		
Ductility	%	1.562
Internal Stress	MN/m²	9.528
Microhardness	HK_{100}	531
Wear Resistance	mg/1000 cycles	
	as-plated	23.462
	heat-treated at 400°C for 1 hour	18.967



Electrical & Magnetic Properties		
Electrical Resistivity	μΩ-cm	93.524
Coercivity	Oe	0.245
Corrosion Resistant Properties of High Phosphorus EN Coating		
Service Environment	Sulfuric Acid (H2SO4)	
Concentration	wt%	7.50
Corrosion Rate	μm/y	28.853
Galvanic Potential Difference between EN Coating and Other Metals, mV		
Mild Steel	Seawater	453
EN Coatings is cathodic to Mild Steel.		

Figure 1 EN-Compass Models and Predicts the Properties of Electroless Nickel Coatings.

EN-Compass®: Modeling and Prediction of Corrosion of Electroless Nickel Coatings **Version 9.3.6**

Phosphorus content in EN Coating (wt%)		10.00
Physical Properties		
Density	g/cm^3	7.916
Melting Point	°C	914.50
Microstructure	Crystalline	HP
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Electrical & Magnetic Properties		
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Coercivity	Oe	0.245

Corrosion Resistant Properties of High Phosphorus EN Coating

Service Environment: Sulfuric Acid (H2SO4)

Concentration

Corrosion Rate

Galvanic Potential Differenc

Mild Steel

EN Coating

- Inorganic Acids at Ambient ToC
- Sulfuric Acid (H2SO4)
- Hydrochloric Acid (HCl)
- Hydrofluric Acid (HF)
- Phosphoric Acid (H3PO4)
- Sodium Hydroxide (NaOH)
- Waters and Other Liquids at Ambient ToC
- Ammonical Solutions at Ambient ToC:
- 2% NH3
- 10% NH3
- 28% NH3
- 27% NH4Cl
- 66% NH4NO3
- 25% NH4H2PO4
- 43% (NH4)2SO4
- Organic Acids at Ambient ToC:
- Glacial Acetic
- 10% Acetic
- 0.25% Benzoic
- 5% Carbolic

Figure 2 EN-Compass Models and Predicts Corrosion Rate of Electroless Nickel Plating in Many Service Environments.

EN-Compass®: Modeling and Prediction of Corrosion of Electroless Nickel Coatings Version 9.3.6

Phosphorus content in EN Coating (wt%)		10.00
Physical Properties		
Density	g/cm^3	7.916
Melting Point	°C	914.50
Microstructure	Crystalline	HP
Mechanical Properties		
Ductility	%	1.562
Internal Stress	MN/m^2	9.528
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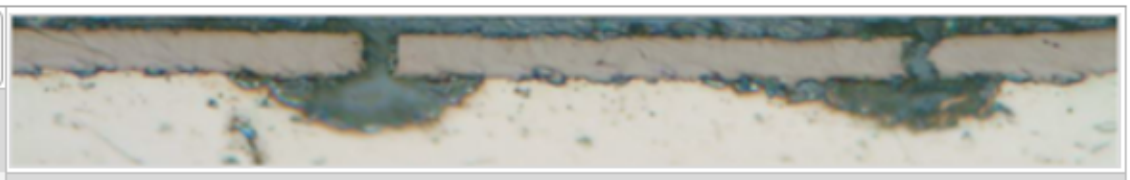

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Coercivity	Oe	0.245
Corrosion Resistant Properties of High Phosphorus EN Coating		
Service Environment	Sulfuric Acid (H2SO4)	
Concentration	wt%	7.50
Corrosion Rate	µm/y	28.853
Galvanic Potential Difference between EN Coating and Other Metals, mV		
Mild Steel	Seawater	453
EN Coating		*l.*

Seawater
Aerated tap water
Deaerated tap water
0.1N HCl
0.1N HNO3
0.1N NaOH
CO2-saturated brine
H2S-saturated brine
CDU overhead

Figure 3 EN-Compass Predicts the Galvanic Potential Difference between EN Coatings and Other Metals in Selected Environments.

EN-Compass®: Modeling and Prediction of Corrosion of Electroless Nickel Coatings Version 9.3.6

Phosphorus content in EN Coating (wt%)		10.00
Physical Properties		
Density	g/cm^3	7.916
Melting Point	°C	914.50
Microstructure	Crystalline	HP
Mechanical Properties		
Ductility	%	1.562
Internal Stress	MN/m^2	9.528
Microhardness	HK_{100}	531
Wear Resistance	mg/1000 cycles	
	as-plated	23.462
	heat-treated at 400°C for 1 hour	18.967

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µΩ-cm		93.524
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wt%		7.50
µm/y		28.853
veen EN Coating and Other Metals, mV		
Mild Steel	Seawater	453
EN Coatings is cathodic to Mild Steel.		

Copper
Duplex nickel plating
Duplex stainless steel
Graphite
Hard Chrome plating
Hard coat anodizing
Hardened electroless nickel plating
Hastelloy B
Hastelloy C-276
Haynes 188 (UNS R30188)
Inconel 600
Inconel 718 (UNS N07718)
Incoloy 800
Lead
Magnesium
Mild Steel
Monel 400
Muntz metal
Naval brass
Nickel

Figure 4 EN-Compass Predicts the Galvanic Potential Difference between EN Coatings and Many Metals and Alloys.

The powerful applications of EN-Compass are truly unlimited in engineering design, corrosion prediction and modeling, materials compatibility assessment, trouble-shooting process-related issues and failure analysis of components and systems.

Click here to contact us for licensing details and experience the power of EN-Compass.

EN-Compass, giving you the right directions in Modeling and Prediction of Corrosion of Electroless Nickel Coatings.