

WATERBORNE COATINGS GUIDE FORMULATIONS



LOW VOC, WATERBORNE INDUSTRIAL PRIMER WITH NX-8501

- Waterborne system with VOC = 75 g/L
- Excellent adhesion to various metal substrates
- Fast wet-on-wet recoatability with long pot life
- Excellent long-term corrosion protection

WATERBASED EPOXY COATINGS

AMBIENT-CURE, SUITABLE FOR
WET-ON-WET RECOATABILITY

MARINE, PROTECTIVE, AND
INDUSTRIAL APPLICATIONS

Guide Formulation

Ingredients	Formulation 1 (Weight/g)
Part A	
NX-8501 ¹ (waterborne curing agent)	5.34
Water	11.06
Bentone SD-2 ² (rheological additive)	0.08
Dowanol PM (co-solvent)	1.83
BYK 1640 ³ (defoamer)	0.08
Ti-pure R-706 ⁴ (pigment)	3.81
Cimbar EX ⁵ (filler)	8.39
Zeeospheres G 200 ⁶ (filler)	4.59
Wollastonite 10ES ⁷ (filler)	9.15
HALOX SW-111 ⁸ (inhibitor)	6.86
MICA WG-325 ⁷ (filler)	0.53
HALOX 550WF ⁸ (inhibitor)	0.46
DPnB (solvent)	0.31
Flash X-150 ⁸ (flash rust inhibitor)	0.23
Total Part A	52.72
Part B	
AERS-6056 ⁹ (Solid epoxy dispersion)	38.13
Water	9.15
Total Part B	47.28

¹Cardolite ²Elementis ³BYK ⁴Chemours ⁵Cimbar ⁶Zeeospheres Ceramics
⁷Imerys ⁸ICL Phosphate Specialty ⁹Honghu¹

Formulation Properties

Properties	Formulation 1
VOC (gm/l)	75.10
% wt NVM	58.01
% wt Volatile	41.99
% vol NVM	45.35
% vol Volatile	54.65
% PVC	31.25
Epoxy/amine	1.25

Formulation Performance

Performance Tests	Formulation 1
Mandrel Bend	1/8"
Cross-hatch adhesion over QD-36 CRS	5B
Cross-hatch adhesion over AA 2024 T3	5B
Cross-hatch adhesion over SS-36 stainless steel	5B
Cross-hatch adhesion over galvanized steel	5B
Pot life	3-4 hrs
Wet-on-wet PU topcoat @ RT	15-45 mins
Wet-on-wet PU topcoat @ 60°C	15-45 mins

SALT SPRAY RESULTS FOR FORMULATION 1



2328 hrs salt spray exposure
DFT = 65 microns over AA20204 T3 substrate
60°C bake for 2 hr
Blister: 1, No.4
Filiform: < 2mm

PROCESSING

1. Mix dispersant, defoamer, rheological additive and solvents into water in a metal vessel (having a water cooling system) with low speed agitation until uniform. Turn on the water cooling system to keep the vessel temperature under 50°C.
2. Add filler(s) and pigment(s) into water one by one at medium speed agitation to obtain a uniform paste.
3. Add NX-8501 into the paste at low speed agitation, and gradually increase agitation speed to medium to obtain a uniform mixture of Part A.
4. Mix Part A with solid epoxy dispersion at low speed agitation, then add water, and gradually increase agitation speed to medium to obtain a uniform mixture of paint.
5. **Please refer to each supplier's material safety data sheet (MSDS) for the most current safety and handling information.**

DISCLAIMER

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