



Intelli-ion® Formulation Advice

Hexigone's Intelli-ion® AX1 Extra Fine (AX1 EF) is designed to replace chromates or phosphates or act in synergy with existing heavy metal phosphate anti-corrosive additives. It is an organic anti-corrosive additive held in a smart release ion exchange resin.

The technology fights corrosion when used in primers with full system barrier topcoats with applications in protective, marine, industrial, aerospace, coil and powder coatings.

General formulation guidance:

Solvent-borne Alkyd Primers

AX1 EF can be incorporated in solvent-based alkyd primers by total substitution or cross blending with your current anticorrosive additive package. Substantial savings in overall loadings can be made due to the efficacy of AX1 on its own or with AX1 acting synergistically with existing additives. Precise loading recommendations for each approach are available from Hexigone including a comprehensive loadings guidance and costings Excel spreadsheet. The low Specific Gravity of AX1 EF means that the lower loading required by weight is offset by the products higher volume so changes to Pigment Volume Concentration are limited.

Solvent-borne Epoxy Primers

Solvent borne epoxy primers can be treated in the same manner as alkyd primers. Please see above.

Powder Coating Primers

AX1 EF is compatible with epoxy and epoxy polyester powder primer systems – most effective loadings are at 3% by weight with the product passed through the extruder prior to micronization.

Direct to Metal (DTM) Coatings

DTMs have no protective barrier topcoat to prevent water ingress into primer systems. AX1 EF is designed to produce slight microporosity in the system to allow for the release and movement of the active ingredient and so careful control of loading parameters and the use of a blend of corrosion inhibitors is recommended. Please seek specific advice prior to commencing formulation.

Water-borne Alkyd Primers

Control of loading parameters, the use of dispersing agents, selection of non-ionic surfactants, the use of zinc free or low zinc synergistic pigments and the regulation of pH to a level of 8 are suggested. Please seek specific advice if required prior to commencing formulation.

Water-borne Epoxy Primers

Water-borne epoxy primers can be treated in the same manner as water-borne alkyd primers.

Corrosion Testing Guidance:

Intelli-ion® AX1 EF products function by releasing anti-corrosive pigments from micro-reservoir systems in the primer layer of multicoat systems. To facilitate this AX1 EF is designed to produce optimum porosity in primer layers. To effectively evaluate Intelli-ion® it is recommended that full coatings systems with the protective barrier topcoat applied are tested.

Hexigone provides confidential and bespoke coatings system advice on loading levels to optimise performance and cost for existing product reformulation and new product development. **Please consult with Hexigone before starting your product development program.**

	Intelli-ion® AX1 EF
Solvent-based Coatings	Short and medium oil alkyds
	Long oil alkyds
	High solids alkyds
	Epoxies
	Epoxy esters
	High solids epoxies
	Polyurethanes
	High solids polyurethanes
	Moisture cured polyurethanes
	Silicone resins
Water-based Coatings	Alkyd emulsions
	Epoxy dispersions
	1-part polyurethanes
	2-part polyurethanes
	Silicone resins
	Acrylics and modified acrylics
	Butadienes
	Polyesters
Specialty	Coil coatings
	Aircraft primers
	Wash and shop primers
	Direct to metal one coat
	UV cured systems
	Powder coatings

• Subject to customer expertise | •• Good | ••• Excellent