



NeoResins

NeoCryl XK-220

NeoCryl XK-220 is a 100% acrylic latex polymer designed for high gloss trade sales and DIY enamels. NeoCryl XK-220 exhibits outstanding wet and dry adhesion to aged alkyds and provides paint films with exceptional mar resistance and hardness. NeoCryl XK-220 is typically used for interior trim and kitchen and bath enamels that require a good balance of high gloss, adhesion and resistance to food stains and household cleaners.

Key Benefits

- 100% Acrylic
- Early Block and Print Resistance
- Excellent Wet Adhesion to Alkyds
- Mar Resistance and Hardness
- Stain & Hand Cream Resistance
- Excellent Application Properties

Typical Properties

Appearance	Milky-white liquid
Total solids, by weight, %	45.0
pH	9.2
Brookfield Viscosity, cps	100
Weight per gallon, 25°C, as supplied, lbs	8.8
Volatile Organic Compounds	None
MFFT°C	55

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3 Year Exterior Exposure Florida 45° Diagonal South

Substrate: **Southern Yellow Pine**

Test Method **AC-04-35**

Exposure: **Florida 45°**

South

System: **NeoCryl XK220 High Gloss System**

	XK220	XK220	Competitor A	Competitor A	Competitor B	Competitor B
	Untinted	Tinted	Untinted	Tinted	Untinted	Tinted
Gloss @ 60/20 Initial (*B.E.)	75/21	70/14	75/20	70/12	74/18	72/12
Gloss @ 60/20 Unwashed	5/1	5/1	7/1	7/1	3/1	3/1
Gen Appearance	7	7	7	7	6	7
Dirt Pickup	7	7	7	7	6	6
Mildew	7	8	8	8	7	8
Blistering	10	10	10	10	10	10
Grain Cracking	9	7	9	9	3	9
Flaking	10	10	10	10	10	10
Yellowing	9	10	10	10	2	10
Chalking	4	5	5	5	3	5
Total	63	64	66	66	47	65

*B.E.: Before Exposure

Note: All competitor samples were formulated utilizing suggested competitor starting point formulas. All tinted systems contained 2 oz/gal of Huls 888-7214 Phthalo Blue. All tested samples were formulated at PVC of 17- 18%.

FORMULATING SUGGESTIONS

Coalescing

The addition of coalescing solvents to NeoCryl XK-220 is required in order to form a good film. Usually 25-30% cosolvent based on binder solids is common for adequate film formation. It has been found that the addition of 2.5 - 5.0 % of Dibutyl Phthalate plasticizer on binder solids further aids film formation, especially in high humidity conditions, with no detrimental effect on hardness. A typical coalescent package may consist of 30-35 lbs per 100 gallons dipropylene glycol ether (DPM) plus 30-35 lbs per 100 gallons Texanol[®]. Dibutyl phthalate can be added at 10 lbs per 100 gallons of paint.

Dispersants

Tamol 165A[®] dispersant is recommended with NeoCryl XK-220. Good heat age and freeze / thaw paint stability has been demonstrated. Triton CF-10 wetting agent was also found to be useful in combination with Tamol 165A[®] in improving grind efficiency

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Rheology Modifiers



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Acrysol RM-2020 and Acrysol RM-825 urethane associative thickeners are recommended to achieve optimum rheological properties. Acrysol RM-2020 at 20-25 lbs per 100 gallons will provide adequate ICI viscosity while Acrysol RM-825 should be post added to bring the low shear (KU) viscosity up to desired levels. Typically 1-3 lbs per 100 gallons Acrysol RM-825 is all that is required.

Both rheology additives are quite stable with NeoCryl XK-220 and will provide good long term in can shelf life.

pH Adjustment

Utilization of Angus AMP-95 at 2 lbs per 100 gallons in the grind has been found to improve grind efficiency and improve the overall stability of the paint.

Preservative

Avecia Biocides' Proxel GXL at 0.75 lbs per 100 gallons is recommended to provide adequate in can biocide protection.

Defoamers

Good anti-foam protection without sacrificing gloss has been found by using BYK-021 at 1 lb. per 100 gallons in the grind and 3-5 lbs BYK-024 in the let down.

Pigments

High gloss grades of TiO₂ have been used successfully with NeoCryl XK-220 to achieve optimum gloss Ti-Pure R700 and Ti-Pure R706 along with Kronos 2310 are recommended.

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Raw Material Suppliers

Material	Supplier
Proxel GXL	Avecia Biocides (302) 866-3000
Texanol Dibutyl Phthalate	Eastman Chemical Company (800) EASTMAN
Arcosolv DPM	Arco Chemical Company (800) 272-6832
BYK 021 BYK 024	BYK-Chemie, USA (203) 265-2086
Ti-Pure R700 Ti-Pure R706	Dupont de Nemour (800) 441-9489
Kronos 2310	Kronos, Inc. (800) 866-5600
AMP-95	Angus Chemical Company (847) 215-8600
Acrysol RM-2020 NPR Acrysol RM-825 Tamol 165A	Rohm and Haas Company (215) 592-3000
Triton CF-10	Union Carbide Company (800) 257-8322

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