Industrial Coatings

Technical Data Sheet

Joncryl® 537

We create chemistry

Product Description **Joncryl® 537 is an acrylic emulsion for industrial coating applications.**

Key Features & Benefits

- High gloss
- Sandability
- Pigment dispersing capabilities
- Good adhesion

Chemical Composition **Acrylic resin emulsion**

Properties

Typical Properties

Appearance	translucent emulsion
Non-volatile at 145°C (2g, 60 minutes)	45.5%
pH at 25°C	9.0
Viscosity at 25°C (Brookfield #2LV, 60 rpm, 30 seconds)	150 cps

Typical Characteristics

Density at 20°C	1.05 g/cm^3 (8.75 lbs/gal)
MFFT	42°C
Tg	44°C
Freeze-thaw stable	Yes

These typical values should not be interpreted as specifications.

Applications

Joncryl® 537 provides the fast dry characteristics of an emulsion, while providing the clarity and sandability necessary for applications such as interior wood sealers.

Joncryl® 537 is recommended for applications such as:

- Interior/exterior general metal coating applications
- Interior/exterior plastic component coating applications
- Interior wood coatings for furniture or millwork applications
- Interior/exterior concrete topcoats

Formulation Guidelines

Coalescing Solvents – Ethylene glycol mono butyl ether and diethylene glycol mono butyl ether may be used to coalesce Joncryl® 537. Solvent levels of 25 – 30% on resin solids will result in properly coalesced films. In cases where E-series glycol ethers cannot be used, solvents such as dipropylene glycol mono butyl ether in combination with dipropylene glycol methyl ether (for dry time control) can be used.

Rheology Modifiers – The balance between KU and ICI viscosity is dictated by the desired pickup and application properties. A particular KU and ICI level can be reached through the proper selection of rheology modifiers, polymer solids, co-solvents, and colorants. In paints containing Joncryl® 537, Rheovis® PU 1214 NC and Natrosol[1] 330 Plus provide a good balance of high and low shear viscosity and maintain a high level of paint performance.

Joncryl® 537 as a Modifier – Joncryl® 537 is an excellent modifier for existing paint systems. By replacing a portion of the existing polymer with Joncryl® 537, properties such as stain resistance, adhesion, and gloss potential will be improved.

Tint Compatibility – Joncryl® 537 exhibits a high degree of tint compatibility with most water-based colorants.

Defoamers – Defoamers may be used to reduce macro-foam in the coating.

Amines – The use of certain slow evaporating amines has been found to reduce the exterior metal protection performance of Joncryl® 537. Ammonia is recommended for pH control and will not adversely affect exterior performance.

Starting Point Formulations

The following starting point formulations are recommended for an initial evaluation of Joncryl® 537. Additional optimization of the formulation may be required to achieve desired results for specific applications.

Joncryl® 537 WOOD SANDING SEALER, Formula 295-A

Materials	Pounds	Gallons
Joncryl® 537	635.5	72.20
Water	107.5	12.90
BYK[2]-080[3]	1.9	0.20
Premix next 3 ingredients:		
Water	29.0	3.48
Ethylene glycol mono butyl ether	58.0	7.72
Diethylene glycol mono butyl ether	24.0	3.02
Then add:		
Surfynol[4] 104H	3.8	0.48
Total	859.7	100.00

Formulation Attributes, Formula 295-A

Solids	34.5% by wt, 32.0% by volume
pH	8.8
Viscosity (Zahn #2)	23 seconds
Density	8.59 lbs/gal
VOC (includes ammonia)	1.94 lbs/gal, 233 g/l

Joncryl® 537 HIGH GLOSS COATING, Formula 544-B (polymer grind)

Materials	Pounds	Gallons
Deionized Water	4.00	4.80
Dispex® Ultra PX 4275	1.26	1.40
FoamStar® SI 2210 NC	0.36	0.50
Hydropalat® WE 3320	0.27	0.30
Ti-Pure[5] R-706	18.19	5.50
Deionized Water	2.12	2.50
Grind at 4,000 RPM for 30 minutes		
Joncryl® 537	56.56	65.0
Deionized Water	8.16	9.80
Dipropylene glycol mono butyl ether	9.03	11.90
Ammonia	0.05	0.10
Total	100.0	101.8

[1]Registered trademark of Ashland, Inc. Please contact manufacturer to determine availability.
[2]Registered trademark of BYK Chemie.
[3]This product is discontinued, contact your BYK representative for a suitable replacement.
[4]Registered trademark of Air Products and Chemicals, Inc.
[5]Registered trademark of The Chemours Company.

Formulation Attributes, Formula 544-B (polymer grind)

Solids	45.3% by wt, 36.01% by volume
PVC	16.0%
VOC (includes ammonia)	1.9 lbs/gal, 236 g/l
pH at 25°C	8.7

Joncryl® 537 INTERIOR HIGH GLOSS ENAMEL, Formula 544-F (surfactant grind)

Materials	Pounds	Gallons
Propylene Glycol	34.6	4.00
Water	33.3	4.00
BYK[2]-156	10.0	1.02
Triton[6] CF-10	2.5	0.28
Mergal[7] 586	0.5	0.05
Dimethyl ethanolamine (DMEA)	2.0	0.27
BYK[2]-022	3.0	0.41
Rheovis® PU 1214 NC	3.0	0.34
Ti-Pure[5] R-706	250.0	7.51
Grind at high speed for 20 minutes or 7 N.S.		
Joncryl® 537	616.0	70.00
Texanol[8]	32.0	4.05
Dipropylene glycol methyl ether	32.0	4.03
BYK[2]-024	3.0	0.36
Rheovis® PU 1214 NC	8.0	0.90
Rheovis® PU 1250 NC	3.0	0.34
Joncryl® Wax 26	12.0	1.46
Water	10.0	1.20
Total	1,054.9	100.22

Formulation Attributes, Formula 544-F (surfactant grind)

Solids	52.4% by wt, 40.0% by volume
Viscosity	97 KU
Density	10.5 lbs/gal
PVC	18.8%
VOC (includes ammonia)	1.9 lbs/gal, 236 g/l

Joncryl® 537 GLOSS WHITE, Formula 177-A

Materials	Pounds	Gallons
Joncryl® 537	175.0	19.9
Nalco[9] 2305	2.0	0.3
Ti-Pure[5] R-900	182.0	5.5
Disperse to desired fineness		
Joncryl® 537	448.8	51.00
Texanol[8]	32.0	4.05
Dipropylene glycol methyl ether	32.0	4.05
Rheovis® PU 1214 NC	8.0	0.90
Joncryl® Wax 26	12.0	1.46
BYK[2]-024	3.0	0.36
Water	44.3	5.32
Total	1,055.1	100.39

Formulation Attributes, Formula 177-A

Solids	52.2% by wt, 39.8% by volume
Viscosity	95 KU
Density	10.5 lbs/gal
PVC	18.8%
VOC (includes ammonia)	1.9 lbs/gal, 236 g/l

[6]Trademark of The Dow Chemical Company
[7]Registered trademark of Troy Corporation
[8]Trademark of Eastman Chemical Company
[9]Registered trademark of Nalco Company.

The following table illustrates key advantages derived from the use of an architectural coating formulated with Joncryl® 537 using a polymer and surfactant grind.

Attributes	Formula 544-F
Grind	Surfactant
PVC	18.8%
Initial viscosity	97 KU
Heat-aged viscosity	101 KU
ICI (build)	2.0 poise
Gloss (3 mil DD over a sealed chart)	
20°	73
60°	92
Image clarity	Excellent
Gloss retention	Good
Adhesion to aged alkyd	Good

Safety

General

The usual safety precautions when handling chemicals must be observed. These include the measures described in Federal, State, and Local health and safety regulations, thorough ventilation of the workplace, good skin care, and wearing of protective goggles.

Material Safety Data Sheet

All safety information is provided in the Material Safety Data Sheet for Joncryl® 537.

Important

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