We create chemistry

Joncryl® U 4190

An economical NMP-free aliphatic polyurethane dispersion

Key Features & Benefits

- abrasion resistance
- film toughness
- chemical resistance
- adhesion to multiple substrates
- low VOC capable

Chemical Nature

polyurethane dispersion

Properties

Typical Characteristics

Appearance	translucent emulsion
Non-volatile content (2g, 60 min at 145°C)	36.5%
pH at 25°C	8.5
Brookfield Viscosity at 25 °C	80 cPs
MFFT	23 °C
Freeze-thaw stable	no

These typical values should not be interpreted as specifications.

Application

Joncryl U 4190 is an aliphatic polyurethane dispersion in water. It provides a good balance of film hardness, flexibility and toughness, along with excellent adhesion and abrasion resistance. Joncryl U 4190 is compatible with a wide range of acrylic emulsions and can be used as a blend vehicle.

Coatings formulated with Joncryl U 4190 exhibit excellent adhesion to wood, metal, concrete and a variety of plastic substrates, including ABS and polycarbonate.

Formulation guidelines

Coalescing Solvents – Dipropylene glycol n-butyl ether, ethylene glycol n-butyl ether, propylene glycol n-butyl ether, dipropylene glycol methyl ether and propylene glycol are compatible with Joncryl U 4190

Amines

Ammonia is recommended for pH control

The following starting point formulations are recommended for an initial evaluation of Joncryl U 4190. Additional optimization of the formulation may be required to achieve desired results for specific applications.

Recommended Starting Point Formulations

Clear, High Gloss Formulation for Joncryl U 4190

Materials	Pounds	Gallons
Joncryl U 4190	795	92.44
Premix the Following Solvents with Water:		
DI Water	91	10.92
Propylene glycol	12	1.39
Dipropylene glycol n-butyl ether	48	6.35
Ethylene glycol n-butyl ether	48	6.39
Add the following step-wise		
Rheovis® PU 1251	1	0.12
Hydropalat® WE 3120	2	0.25
FoamStar® SI 2213	2	0.24
Adjust pH to 8-8.5		
Ammonium hydroxide, 28% soln.	1	0.11
TOTAL	1000	118.2

Formulation Attributes, Clear, High Gloss Formula

Solids, wt%	29.47
VOC (includes ammonia)	269.28 g/L

Clear, Matte Formulation for Joncryl U 4190

Materials	Pounds	Gallons
Joncryl U 4190	902	104.88
Premix the following before addition		
DI Water	40	4.8
Dipropylene glycol methyl ether	20	2.51
Dipropylene glycol n-butyl ether	20	2.51
Add the following step-wise while stirring at 1500 rpm		
Acematt[1] TS 100	10	0.54
Rheovis PU 1251	2	0.23
Hydropalat WE 3120	3	0.37
FoamStar SI 2213	3	0.36
Adjust pH to 8-8.5		
Ammonium hydroxide, 28% soln.	0	0
Mix for 10 min at 1500-2000 rpm		
TOTAL	1000	116.34

[1] Registered trademark of Evonik Resource Efficiency GmbH

Formulation Attributes, Clear Formula

Solids, wt%	34.56
VOC (includes ammonia)	112.95 g/L

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.

Safety Data Sheet

All safety information is provided in the Safety Data Sheet for Joncryl U 4190.

Storage

Please refer to the “Handling and Storage of Polymer Dispersions” brochure.

Important

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