

Key features and benefits

- adhesion to a broad variety of substrates
- good outdoor durability
- excellent application rheology
- metallic pigment stability

JONCRYL® 8211

a rheology controlled acrylic emulsion for plastic and metal coatings, excellent adhesion, chemical and solvent resistance

General information

Typical physical characteristics (not to be considered specifications)

appearance	translucent emulsion
solids by weight	44%
solids by volume	41.7%
viscosity (Brookfield)	150 mPa.s
specific mass as supplied	1,040 kg/m ³
specific mass solids	1,095 kg/m ³
pH	7.6
acid value (on solids)	26
glass transition temperature T _g (DSC)	60 °C (140 °F)
minimum film-forming temperature	57 °C (135 °F)
freeze/thaw-stable	yes

Applications

JONCRYL® 8211 produces air dry anti-corrosive primers and topcoats.

It is a versatile polymer which can be utilized in a wide variety of applications including metal primers, topcoats and plastic coatings. JONCRYL® 8211 based coatings can be applied by spray, brush, dip and flow coating.

JONCRYL® 8211 is utilized for air dry inhibitive pigmented primers for exterior or interior use, as well as exterior gloss topcoats, either over a primer or applied directly to metal (DTM).

JONCRYL® 8211 based metal coatings can be formulated for industrial use, as well as consumer multi-purpose primer. JONCRYL® 8211 is very suitable to formulate plastic coatings for consumer electronics, business machines and automotive components.

Performance

JONCRYL® 8211 with very good actual exterior weathering resistance. It shows excellent adhesion characteristics and the fast development of hardness and solvent resistance. The adhesion to many plastic substrates such as ABS, PVC, UP, PS, PC is excellent. JONCRYL® 8211 also provides good adhesion to metal substrates such as cold rolled steel, bonder, aluminium, galvanized and zincor steel.

Formulation guidelines

Coalescing

Minimum film-forming temperatures (MFT) of JONCRYL® 8211/coalescent blends at 150 microns tested on MFT bar with:

butylglycol	10% on delivery form	= 14°C
butyldiglycol	10% on delivery form	= <5°C
Dowanol ¹ DPM//Dowanol ¹ DPnB (1/1)	10% added as a blend on delivery form	= <5°C

Fast hardness development can be expected from butylglycol.

As ambient conditions become more severe (below 15°C and/or above 70% relative humidity), slower evaporating and/or hydrophobic solvents (e.g. butyldiglycol, Dowanol¹ DPnB) will be required to achieve good filmformation. The use of plasticizer, (e.g. dioctyladipate, Eastman² TXIB) in the range of 5-10% of polymer solids, will also facilitate this.

Foam control

JONCRYL® 8211 is a low foaming polymer. The following defoamers are recommended when necessary:

Tego³ Foamex 815, 825, 7447

BYK⁴ 024, 035, 036

Agitan⁵ 315, 760

Dehydran⁶ 975

Foamaster⁶ VP3063

Thickening

The viscosity of JONCRYL® 8211 is stable to pH variation. Viscosity reduction may take place by the addition of water. To increase viscosity, addition of acrylic or polyurethane thickeners is recommended. These thickeners, however, could have a negative influence on resistance properties of the coating.

Good results have been achieved with additions of polyurethane thickeners such as 1-3% Collacral® PU 85, DSX⁶-1514 and Rheolate⁷ 278.

Pigment selection

For aluminium pigment stability, do not allow the pH to drop below 7.2 during paint manufacture (due to the low pH of JONCRYL® 8211). We recommend as aluminium: Aquavex⁸ E-5000 AR-207S. For stable anti-corrosive primers with inhibitive pigments raise the pH of the mill base, based on JONCRYL® 8211, to approximately 9 with an amine like DMEA.

Pigment dispersion

JONCRYL® 8211 is a Rheology Controlled emulsion providing the excellent shear stability needed for grinding pigments directly in the polymer. Addition of a small amount of amine is recommended to maintain pH at a stable level + 7.7 during grinding. Pigment wetting may be further improved by addition of the following wetting agents: Disperse⁷ Ayd W 22, W 28 and BYK⁴ 181.

Scratch resistance

JONCRYL® 8211 is a hard acrylic polymer, that quickly builds up hardness and scratch resistance after application. Scratch resistance may be further improved by the addition of 3-5% JONCRYL® WAX 22 or JONCRYL® WAX 35, BYK⁴ 341 or Formasil⁹ 45.

Surface tension

On some substrates it is recommended to lower surface tension, of the formulated paint, in order to improve spray application. This can be achieved by addition of Surfynol¹⁰ 104E or BYK⁴ 346.

Matting agents

Good matting properties with minimal effect on clarity and chemical resistance can be obtained by Syloid ED 3¹¹ or Acematt¹² TS 100.

Safety

When handling these products, advice and information given in the safety data sheet must be complied with. Further, protective and workplace hygiene measures adequate for handling chemicals must be observed.

Note

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