Printing & Packaging

Technical Data Sheet

Joncryl® 611

BASF
The Chemical Company

Product Description	**Joncryl® 611 is a high solid, solvent-soluble acrylic resin for printing ink applications.**
Key Features & Benefits	***- High solids, low viscosity*** ***- Good compatibility*** ***- Good adhesion to films***
Chemical Composition	**Styrene acrylic resin**

Properties

Product Specifications

Appearance	clear flakes
Molecular weight	7,300 – 9,000
Acid number	48.0 – 58.0

Typical Characteristics

Appearance	clear flakes
Molecular weight (Mw)	8,100
Non-volatile	99.8%
Acid number (NV)	53
Density at 25°C	1.117 g/cm³
Softening point (ring and ball)	112°C
Tg	50°C
Freeze-thaw stable	Yes
Total VOC	0.2% wt

These typical values should not be interpreted as specifications.

Applications

Joncryl® 611 is a mid-range molecular weight, film forming, solvent-soluble acrylic resin capable of maintaining high solids at low viscosity in solvent-based formulations. It allows formulators to manufacture high solids, solvent-based inks with good gloss and color development. This resin has excellent compatibility with nitrocellulose and other resins. In addition, it may be used as a sole resin or in conjunction with other modifying resins to meet the desired ink performance properties.

Joncryl® 611 is recommended for applications such as:

- Printing ink applications

Processing

Solvent Solubility of Joncryl® 611

Solvent	Appearance	NV (%)	Viscosity (cps)
Methyl Ethyl Ketone	S	40	10
Methyl Isobutyl Ketone	S	40	10
Acetone	S	40	10
Xylene	S	40	190
1,1-Trichloroethane	S	40	1,025
Ethyl Acetate	S	40	20
Isopropyl Acetate	S	40	20
n-propyl Acetate	S	40	40
Ethanol 3A	IS	40	-
Isopropyl Alcohol	IS	40	-
n-Propyl Alcohol	SH	40	110
Ethanol 3A/Ethyl Acetate (1:4)	S	40	20
Ethanol 3A/Ethyl Acetate (2:3)	S	40	25
Ethanol 3A/Ethyl Acetate (3:2)	S	40	30
Ethanol 3A/Ethyl Acetate (4:1)	IS	40	-
n-Propanol/n-Propyl Acetate 80/20	S	50	50
n-Propanol/n-Propyl Acetate 90/10	SH	40	58
n-Propanol/n-Propyl Acetate 95/5	SH	40	62
Toluene	S	40	150

S = Soluble, IS = Insoluble, SH = Slightly hazy

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® 611.

Important

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Printing & Packaging

Technical Data Sheet

Joncryl® ECO 684

BASF
The Chemical Company

Product Description

Joncryl® ECO 684 is a low molecular weight, glycol ether-free* resin for overprint varnish and liquid ink applications.

Key Features & Benefits

- Low VOC and HAPS free
- Promotes very high gloss

Chemical Composition

Styrene acrylic resin

**The glycol ether level in this product averages less than 0.002 weight percent.*

Properties

Product Specifications

Appearance	slightly yellow flakes
Molecular weight	1,600 – 2,100 daltons
Acid number (0.3g, 0.1N NaOH, based on resin solids)	235 – 251

Typical Characteristics

Appearance	slightly yellow flakes
Molecular weight (Mw)	1,850
Non-volatile	99.5%
Acid number (NV)	243
Density at 25°C	1.16 g/cm^3
Softening point (ring and ball)	122°C
Tg	88°C
Total VOC	0.5% wt

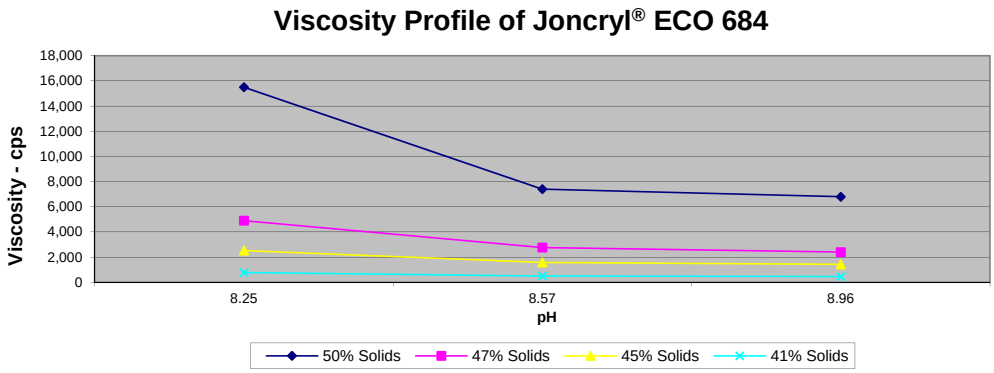
These typical values should not be interpreted as specifications.

Applications

Joncryl® ECO 684 is a low molecular weight, glycol ether-free acrylic resin that allows the formulation of high solids overprint varnishes with excellent gloss and holdout. High solids, low viscosity solutions of Joncryl® ECO 684 are possible due to its low molecular weight.

Joncryl® ECO 684 is recommended for applications such as:

- Overprint varnishes for packaging applications



Joncryl® ECO polymers allow the formulator to develop ultra low VOC, glycol ether-free products to meet industry standards. These polymers provide an 80% reduction in VOC compared to conventional water-based polymers. They are ideal for demanding packaging applications like the confectionary and tobacco markets that cannot tolerate solvent odor contamination. Additionally, the excellent compatibility and printability of Joncryl® ECO polymers makes them an ideal system for next generation inks and overprint varnishes.

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® ECO 684.

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PARALOID™ B-72 100%

PARALOID™ B-72 100% is a general-purpose, thermoplastic acrylic resin with soft film-forming capabilities, possessing a high tolerance for ethanol and a low reactivity with sensitive phosphorescent and luminescent.

Used in:

- Art conservation and preservation
- Clear coatings for wood
- Applications not tolerant of strong solvents
- Flexographic printing inks
- Gravure plastic coatings
- White and metallic aerosols
- Other film-forming materials, such as vinyls, cellulosics, chlorinated rubbers, and silicones

Advantages:

- Low reactivity with sensitive phosphorescent and luminescent pigments
- Superior stability and durability
- High tolerance for ethanol
- Clear, coherent film formation
- Excellent non-yellowing characteristics
- Highly compatible with other film-forming materials

Typical Properties

These properties are typical but do not constitute specifications.

Physical Form	Pellets
Bulk Density, 25°C, lb/gal	9.6
Solubility Parameter	9.3
Tg (°C)	40
Ultimate Hardness of Clear Films, KHN	10 to 11
Chemical Composition	EMA Copolymer

ROHM HAAS

PARALOID™ B-72 100%

Solid Grade Thermoplastic Acrylic Resin

Description

PARALOID B-72 general-purpose thermoplastic acrylic resin is similar to PARALOID B-66 acrylic resin but capable of forming softer films. The approximate hardness (KHN) is 10-11 compared to 12-13 for PARALOID B-66 resin.

PARALOID B-72 acrylic resin is unique in possessing a high tolerance for ethanol. The property allows its use in applications not tolerant of strong solvents. The alcohol dispersions may be cloudy or milky. However, they form clear, coherent films.

PARALOID B-72 has low reactivity with sensitive phosphorescent and luminescent pigments to produce stable, durable, non-yellowing coatings. It is compatible with vinyls, cellulosics, chlorinated rubbers, and silicones. It is well suited for white and metallic aerosols, clear coatings for wood, nitrocellulose modified coatings for general product finishing, pigment dispersion (fluorescent), flexographic printing inks, and gravure plastic coatings.

Solubility

Information about the solvent compatibility of PARALOID B-72 acrylic resin can be found in Rohm and Haas brochure **82A114—*PARALOID Solid Grade Resins, Solvent Selection Chart.***

Typical Properties

These properties are typical but do not constitute specifications.

Physical Form	Pellets
Bulk Density, 25°C, lb/gal	9.6
Solubility Parameter	9.3
Tg (°C)	40
Ultimate Hardness of Clear Films, KHN	10 to 11
Chemical Composition	EMA Copolymer

Properties in White Lacquers[1]

Tukon Hardness		Whiteness		Cross Hatch[3]	
30 min. at 180°F	2.9	(K color low numbers best)		30 min. at 180°F	0
30 min. at 300°F	12.1	30 min. at 300°F	7.7	30 min. at 300°F	0
		16 hrs. at 350°F	11.8		
Pencil Hardness		Flexibility[2], 1/8, 1/4, 1/2		Mustard Staining	
30 min. at 180°F	H	inch mandrels		(30 minute exposure)	
30 min. at 300°F	H	30 min. at 180°F	0, 0, 0	30 min. at 180°F	Light
		30 min. at 300°F	4, 3, 2	30 min. at 300°F	Light
Gloss, 20°		Printing, 2 psi for		Gasoline Resistance	
30 min. at 180°F	77	1 hour at 140°F		(15 minute exposure)	
30 min. at 300°F	76	30 min. at 180°F	V. Heavy	30 min. at 180°F	Wipes Off
		30 min. at 300°F	Moderate	30 min. at 300°F	Wipes Off
Gloss, 60°		Knife Adhesion		Spray Conditions	
30 min. at 180°F	93	30 min. at 180°F	Very Good	Viscosity, No. 4 Ford Cup, sec.	15
30 min. at 300°F	92	30 min. at 300°F	Very Good	Solids Content, %	25.0