



 **BASF**

We create chemistry

Product Selection Guide

Printing & Packaging Industry

A background image of green foliage, likely a tree branch with many small, vibrant green leaves, set against a darker green background. The leaves are in sharp focus in the upper left and gradually become blurred towards the right and bottom.

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WATER-BASED RESINS

Joncryl®

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BASF – Your Partner of Choice in Sustainable Printing and Packaging

We create chemistry for a sustainable future

At BASF, we create chemistry that helps the printing and packaging industries meet specific needs for ecologically friendly sustainable solutions with outstanding functionality and performance in different aspects.

BASF provides broad technology of solid resins and water-based polymers, solvent-based resins and formulation additives under the trade names of Joncryl®, Laroflex®, Lutonal®, Acronal®, Versamid®, Laropal®. These products aid our customers in the formulation of printing inks and overprint varnishes for all applications and printing processes, including newer technologies such as ink jets. Together with our printing and packaging experts, we are competent to solve some of the most challenging technical issues to help you grow your business.

Basic technical data & suitable area of application are indicated next to each product, but it must be stressed that this information is intended as a general guidance

For more details information on specific applications please consult our local sales or technical BASF representative

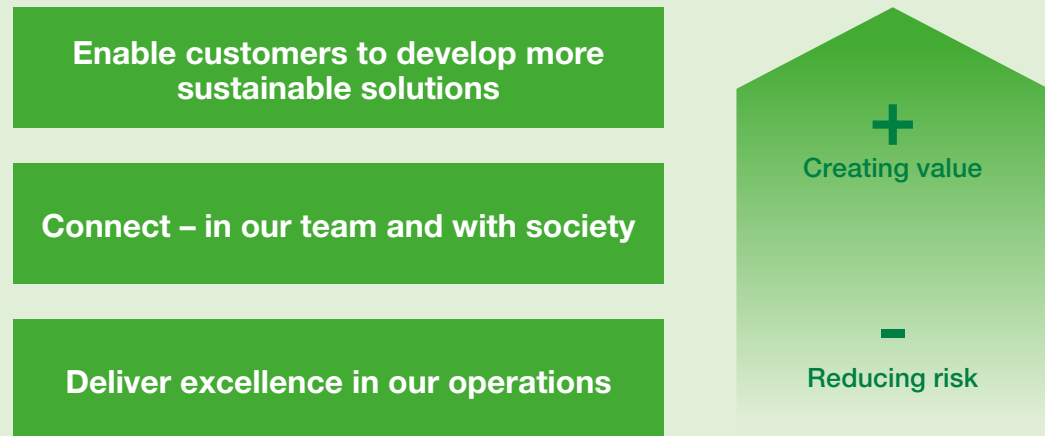
BASF wants to contribute to a world that provides viable future with enhanced quality of life for everyone. We do so by creating chemistry for our customers and society and by making the best use of available resources. We live our corporate purpose "We create chemistry for a sustainable future" by

Sourcing and producing responsibly

Acting as a fair and reliable partner

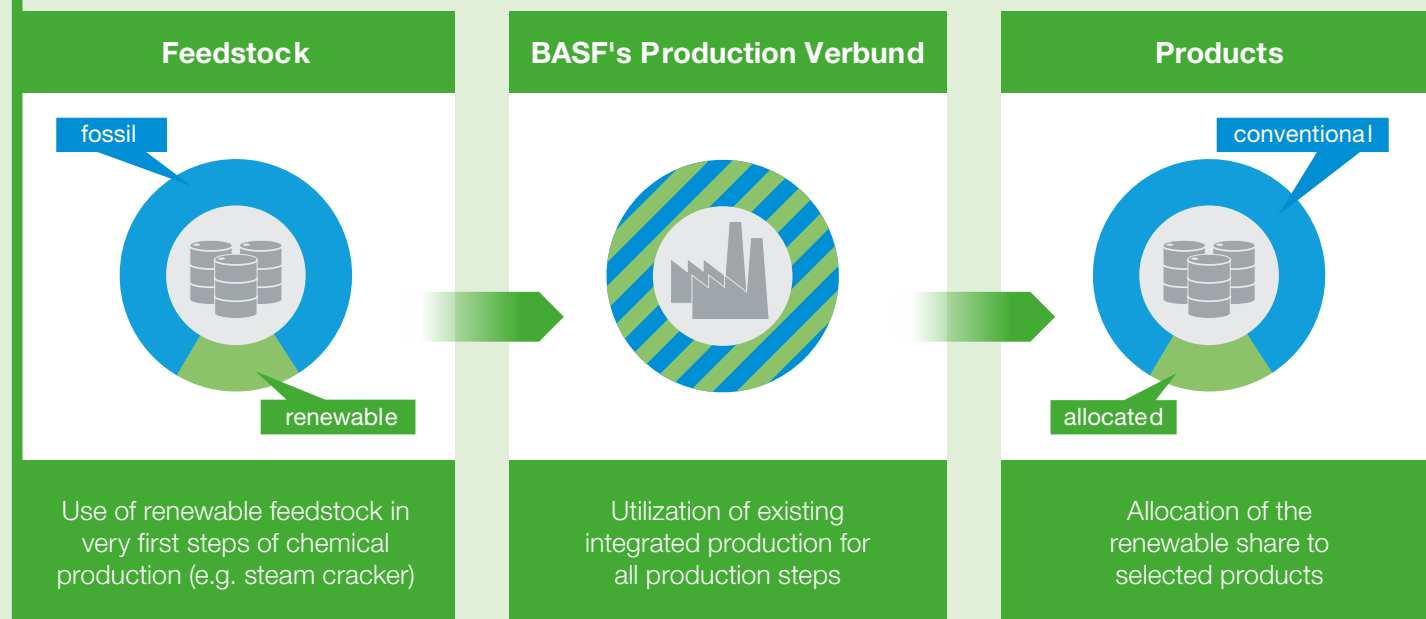
Connecting creative minds to find the best solutions for market needs

Driving sustainability for long-term success



BASF's biomass balance approach – A groundbreaking way of using renewable resources in production

BASF's biomass balance approach contributes to the use of renewable raw materials in its integrated production system and can be applied to the majority of the products in its portfolio. In this process, renewable raw materials are used as feedstock at the very beginning of the Production Verbund, and allocated to the respective sales products using a novel certification method. The certified products thus contribute to sustainable development by saving fossil resources and reducing greenhouse gas emissions.



Benefits of the biomass balance approach

- Drives the use of renewable resources
- Saves fossil resources and reduces greenhouse gas emissions
- Independently certified
- Same product quality and properties



WATER-BASED RESINS

Joncryl®

STYRENE ACRYLIC RESINS

BASF's Joncryl® acrylic resins meet the most stringent formulation requirements of ink and overprint varnish manufacturers: High molecular weight resins for high pigment loading, high solids dispersions used in quality ink for film, foil, and paper applications; general purpose, mid-range molecular weight resins for gloss, resolubility, and drying speed modification for use in inks and overprint varnishes; very low molecular weight resins used in high gloss overprint varnishes and label inks.



Product	Appearance	Key Properties	Non-volatile (%)	Molecular weight (Mw)	Acid number (on solids)	Tg (°C)	Softening Point (°C)	Descriptions and applications
Joncryl® 678	Clear flakes	Transfer, printability, resolubility	98.7	8,600 -9,100	215-225	85	165	General purpose, mid-range molecular weight resin for water-based inks, pigment dispersions and overprint varnishes.
Joncryl® 67		Pigment dispersion	98.6	14,500	220	73	143	High molecular weight acrylic resin designed to produce high quality pigment dispersions. It can also be used to manufacture water soluble pigmented chips where maximum color development and transparency are essential.
Joncryl® 682		Gloss, Promotes high solids, low viscosity, excellent clarity	99.5	1,700-2,250	238-245	56	105	Very low molecular weight acrylic resin supplied in flake form, allowing for high solids overprint varnishes with high gloss and excellent holdout.
Joncryl® ECO 684		Low VOC, high gloss, environmentally friendly	99.5	1,800-2,100	244-251	88	122	A low molecular weight, glycol ether free acrylic resin that allows formulation of high solids overprint varnishes with excellent gloss and holdout.
Joncryl® HPD 671		Economical, viscosity stability	99.6	17,250	214-218	120-128	173	Cost effective high molecular resin for high quality pigment dispersion with very good viscosity stability
Joncryl® HPD 696		Pigment dispersion, color strength, ink stability	98.9	16,000	225	88	155	High molecular weight acrylic resin specifically designed to improve color development and gloss of pigment dispersions without compromising ink stability.
Joncryl® 586	Clear solid resin	Excellent water and wet block resistance, good resolubility	97.0	4,500-5,700	110-120	60-66	115	A low acid, acrylic resin designed for alkali-resistant inks and overprint varnishes. This resin provides additional resolubility with minimal effect on resistance properties.
Joncryl® 690	Clear flakes	Good viscosity stability, gloss and transparency. Good pigment wetting and color development	99.0	16,500-18,500	240-250	102-105	155	A high molecular weight resin for transparent pigment dispersion applications.



**JONCRYL®
STYRENE ACRYLIC RESIN SOLUTIONS**

The Joncryl® HPD line of resin solutions allow ink manufactures to make pigment dispersions that reduce milling time, are higher in pigment loading and color development, are viscosity stable and compatible in most water-based ink systems.



Product	Appearance	Key Properties	Non-volatile (%)	pH (25°C)	Viscosity (mPa·s, 25°C)	Molecular weight (Mw)	Acid number (on solids)	Tg (°C)	Descriptions and applications	
Joncryl® HPD 96	Clear solution	Very good pigment dispersion, high pigment load, low viscosity	34.0	8.5	5,000	16,000	220	88	34% solids solution of a high molecular weight acrylic resin designed to improve the color development and gloss of pigment dispersions without compromising ink stability.	
Joncryl® HPD 96 MEA			31.5 - 40.0	8.5 - 8.9	2,000 - 7,000	16,000	220	86	A styrene acrylic MEA neutralized resin solution for pigment dispersions which promotes high color strength and stable, low viscosity pigment dispersions.	
Joncryl® HPD 96 DMEA			26.8	8.4	400	16,500	242	105	A styrene acrylic DMEA neutralized resin solution for pigment dispersions which promotes high color strength and stable, low viscosity pigment dispersions.	
Joncryl® HPD 196		Excellent pigment dispersion, stable ink viscosity, high pigment concentrations, economical cost-in-use	36.0	9.0	2,000 - 5,000	9,200	200	85	An ammonia based, mid-range molecular weight acrylic resin that is specifically designed to disperse organic pigments at high concentration without compromising stability.	
Joncryl® HPD 196 MEA			40.5	8.5	3,500	9,200	200	85	A MEA based, mid-range molecular weight acrylic resin that is specifically designed to disperse organic pigments at high concentration without compromising stability.	
Joncryl® HPD 296		High pigmented low viscosity dispersions, storage and shock stability, excellent color development, gloss and transparency	37.0	8.6	200 - 800	11,500	141	15	An ammonia based high performance dispersion resin solution for highly pigmented dispersion to be used in water-based inks.	
Joncryl® HPD 296 MEA			37.5	9.5	700	11,500	141	15	A MEA based high performance dispersion resin solution for highly pigmented dispersion to be used in water-based inks.	
Joncryl® LMV 7085		Low pH maintenance, neutral pH, low foaming	High solids dispersion, excellent color development, gloss and transparency	34.5	7.2 - 7.6	2,000	12,500	215 - 230	77	Low maintenance, pH stable acrylic resin solution designed to optimize the dispersion of organic pigments for use in Joncryl® LMV-based inks.
Joncryl® LMV 7025			Low pH maintenance, neutral pH, low foaming	31.0	7.3	1,200	12,500	235	97	Low maintenance, pH stable, low VOC solution of a mid-range molecular weight resin that can be used to modify resolubility and drying speed in Joncryl® LMV-based inks.
Joncryl® 1187			Excellent gloss and holdout, good pigment wetting and dispersing, promotes resolubility	38.5 - 40.0	8.5	3,650	8,500	200	85	An MEA neutralized resin solution for overprint varnish and printing ink application on paper, paperboard and film.
Joncryl® 1124	Semi-translucent emulsion	Good color strength development, excellent transfer and printability, good gloss and hold out	31.5 - 33.0	8.5	1,750	-	-	101	A ready-made ammonia solution, it can be used as a water reducible varnish or pigment dispersant in the formulation of aqueous printing ink for use on paper, paperboard and film.	
Joncryl® DFC 3025	Clear solution	Direct food contact compliant, very low VOC, promotes gloss, hold-out and resolubility	35.4	9.0	5,500	5,800	220	95	A direct food contact compliant (FDA compliant) resin solution for printing inks, overprint varnishes and functional packaging coating applications.	

JONCRYL® COLLOIDAL EMULSIONS

Joncryl® colloidal emulsions' low cost-in-use makes them an excellent choice as a letdown resin for corrugated inks. They can also be used as a dispersion resin for carbon black which makes it possible to manufacture a black corrugated ink using only one polymer. From low cost brown box printing to medium quality band colors, Joncryl® colloidal emulsions meet the formulators' need for balance of print properties and economy.

Product	Appearance	Key Properties	Non-volatile (%)	pH (25°C)	Viscosity (mPa·s, 25°C)	Molecular weight (Mw)	Acid number (on solids)	Tg (°C)	Descriptions and applications
Joncryl® 142	Opaque emulsion	Ink viscosity stability, transfer, printability, rub resistance, flat dilution profile	39.5	6.0	25	48,000	130	10	General purpose, acrylic colloidal emulsion designed as a sole vehicle for carbon black inks; recommended as a let-down vehicle for organic colors.
Joncryl® 661	Semi-translucent emulsion	Transfer, printability, hot-mar resistance, ink viscosity stability	44.0	2.1	60	85,000	154	70	Economic acrylic colloidal emulsion for use in inks for pre-print and post-print corrugated board and kraft paper applications with good transfer, printability and excellent hot-mar resistance.
Joncryl® 668	White Emulsion	Low cost in use, very high efficiency, excellent transfer and printability, good hot-mar resistance	44.4	2.0	25	75,000	164	123	A very cost-effective colloidal emulsion for pre-print and post-print corrugated board and kraft paper applications.
Joncryl® 662		Excellent transfer and printability, good hot-mar resistant, contains renewable resources	43.0	2.5	50	53,000	82	100	Partly based on renewable raw materials for use in inks for pre- and post-print corrugated board and kraft paper application.
Joncryl® 1282	Milky white emulsion	Formulation versatility, heat resistant, wet and dry rub resistance, good press stability, good pigment wetting and disperability.	39.4 - 41.0	4.0	5 - 40	-	-	14	An acrylic emulsion that can be fully neutralized with ammonia, or other amines, and can be used as the sole grinding and let-down vehicle in the formulation of highly reducible inks for printing on corrugated board.



JONCRYL® NON FILM FORMING EMULSIONS

Rheology Controlled (RC) emulsions allow inks and overprint varnishes to meet the demanding shear stress encountered in high speed flexographic and gravure printing. In addition, they provide wetting and adhesion as well as gloss and clarity to inks and overprint varnishes on a wide variety of substrates. The versatile Joncryl® LMV series provides resolubility, pH stability, and improved pressroom efficiency through savings in ink additives and a reduction in ink waste.

Product	Appearance	Key Properties	Non-volatile (%)	pH (25°C)	Viscosity (mPa·s, 25°C)	Molecular weight (Mw)	Acid number (on solids)	Tg (°C)	MFFT (°C)	Descriptions and applications
Joncryl® 89	Semi-translucent emulsion	Gloss, dry speed	48.0	8.3	500	>200,000	50	98	>85	General purpose, non film forming styrenated acrylic emulsion for inks and overprint varnishes.
Joncryl® 90			44.0	8.3	260	>200,000	76	110	>81	Non film forming emulsion providing high gloss and optical properties to overprint varnishes.
Joncryl® 537	Translucent emulsion	Alkali resistance	46.0	9.0	150	>200,000	40	44	42	Non film forming acrylic emulsion that can be coalesced to form an alkali- and detergent-resistance film for inks or coatings.
Joncryl® 538		Alcohol resistance	45.0	9.3	250 - 300	>200,000	53 - 70	64	65	Non film forming acrylic emulsion that can be coalesced to form an alcohol-resistant film for inks and coatings. The hardness of the polymer allows it to resist plasticizer migration.
Joncryl® 631	Opaque emulsion	Hiding power, fast dry	50.0	7.9	2500	>200,000	25	105	>60	Hard non film forming styrene acrylic emulsion designed to hide the brown background of natural kraft substrates.
Joncryl® 1680		Low gloss, no matting agent required	45.0	7.5	300 - 600	>200,000	29	56	42 - 49	A controlled particle size RC emulsion designed to give a matte appearance to overprint varnishes and inks.
Joncryl® 1686		Excellent hot mar resistance, good rub resistance, gloss and transparency	30.0	8.0	400	>200,000	225	44	23	An emulsion designed for use in water-based pre-print overprint varnishes, providing excellent hot mar resistance without the need for additional crosslinking agents.
Joncryl® 7159	Translucent emulsion	High alcohol tolerance, excellent color strength, printability, water resistance, pigment dispersability	41.0	7.5	70	>200,000	54	55	30	Non film forming emulsion that was developed for water-based gravure ink system due to the fast dry, excellent color strength and printability similar to the solvent-based inks system on paper and paperboard substrates.
Joncryl® 2157	Opaque emulsion	Fast dry, low VOC, low curling, resolubility, environmental friendly	48.0	8.3	125	>200,000	36	105	>85	A non film forming let-down emulsion that provides very fast drying and excellent printability characteristics in both flexographic and gravure inks for high speed printing of (coated) paper and paperboard applications. Exhibits low curling upon drying.



JONCRYL® NON FILM FORMING EMULSIONS

Product	Appearance	Key Properties	Non-volatile (%)	pH (25°C)	Viscosity (mPa-s, 25°C)	Molecular weight (Mw)	Acid number (on solids)	Tg (°C)	MFFT (°C)	Descriptions and applications
Joncryl® ECO 2188	Translucent emulsion	Ultra-low VOC, high gloss, excellent printability and transfer, environmental friendly	47.7	8.3	700	>200,000	50	98	>80	Hard non film forming rheology controlled styrene acrylic emulsion that is glycol ether free and ultra-low VOC. It provides excellent gloss and levelling, clarity and fast drying speed for inks and overprint varnishes.
Joncryl® 8055	Semi-translucent emulsion	Low odor, resolubility	46.0	7.9	400	>200,000	-	110	>85	Low odor hard non film forming emulsion, designed for absorbent substrates, newsprint and glossy overprint varnishes.
Joncryl® DFC 3050	Translucent emulsion	Direct food contact, block resistance, fast dry	48.2	8.3	850	>200,000	49	99	>80	Non film forming acrylic emulsion that provides fast dry and block resistance to overprint varnishes and inks for direct food contact applications.
Joncryl® LMV 7051		Low pH maintenance, neutral pH, fast dry	44.0	7.5	200 - 700	>200,000	115	98	56	A non film forming, low maintenance, pH stable acrylic emulsion that provides gloss and holdout in ink formulations for paper and paperboard substrates.
Joncryl® LV 7601	Semi-translucent emulsion	Excellent optical clarity, high gloss, good heat resistance and fast dry	43.0 - 45.0	8 - 9	200 - 600	>200,000	76	100 - 105	85	An ultra-low VOC styrene acrylic emulsion for inks and overprint varnishes. This product meets the tobacco and food packaging industry requirements due to the government VOC regulation.
Joncryl® 7189	Semi-translucent emulsion	Excellent optical clarity, high gloss, good heat resistance and fast dry	44.5	8.7	300	>200,000	60	100	>84	A non film forming emulsion developed for use in water-based overprint varnishes, flexographic and gravure inks; providing high heat seal and film release properties.

**JONCRYL®
FILM FORMING EMULSIONS**


Product	Appearance	Key Properties	Non-volatile (%)	pH (25°C)	Viscosity (mPa-s, 25°C)	Molecular weight (Mw)	Acid number (on solids)	Tg (°C)	MFFT (°C)	Descriptions and applications
Joncryl® 74	Semi-translucent emulsion	Flexibility, water and grease resistance	48.0	8.1	600	>200,000	69	-8	<3	Soft film forming acrylic emulsion that provides film formation and excellent rub, water and grease resistance to ink and overprint varnish formulations.
Joncryl® 77		Flexibility, gloss	45.5	8.3	550	>200,000	62	21	20	Hard film forming acrylic emulsion that provides film integrity and printability to ink and overprint varnish formulations.
Joncryl® 617		Water and grease resistance, gloss, transparency	45.5	8.3	1,250	>200,000	50 - 63	7	<0 - <5	Medium range, film forming acrylic emulsion for ink and overprint varnish formulations.
Joncryl® 624	Translucent emulsion	Film printing	48.0	8.2	900	>200,000	50	-30	<7	General purpose, soft film forming acrylic emulsion for use in water-based flexo and gravure inks on flexible films and foil.
Joncryl® 660 DPM		Hot mar resistance. Good rub resistance, Rheology Controlled (RC)	33.0	8.5	400	>200,000	203	27	<0	A hard film forming, rheology controlled acrylic emulsion designed to resist hot scuffing during the corrugation process of pre-printed linerboard. Designed to provide the highest hot mar-resistant properties without the need for ninc or zirconium crosslinkers.
Joncryl® 1685		Excellent heat resistance, good adhesion to foil and film substrates, good gloss and clarity	43.5	9.5	350	>200,000	-	-20	<-5	Acrylic copolymer emulsion for use in heat-resistant water-based inks and overprint varnishes.
Joncryl® 1695	Translucent emulsion	Heat resistance	39.2	8.1	700	>200,000	120	-50	<5	Soft film forming styrene acrylic emulsion with no added zinc or other metallic crosslinkers designed for high heat resistance application.
Joncryl® 2136	Semi-translucent emulsion	Metallic bronze pigment stability	42.0	7.9	200	>200,000	78	-25	<-5	Acrylic polymer emulsion for use in water-based inks in combination with metallic bronze pigments.
Joncryl® 2178		Wet/dry block resistance, tissue bleeding resistance	44.0	8.5	400 - 1,000	>200,000	68	42	<0	Hard film forming polymer with excellent wet and dry block resistance while providing a high slide angle; fundamental building block for multi-wall bag and beverage carton formulations.
Joncryl® 2640	Translucent emulsion	Water resistance, flexibility	49.0	8.2	500 - 650	>200,000	52	-18	<5	Soft film forming acrylic emulsion polymer that provides high gloss, early water resistance and adhesion in inks for treated polyolefin films.
Joncryl® 8050	Semi-translucent emulsion	Water and grease resistance	42.0	7.9	550	>200,000	114	-18	<-5	Film forming emulsion with water and grease resistance for inks and overprint varnishes.
Joncryl® 8052		Adhesion, water resistance	46.5	7.9	750	>200,000	65	-35	<5	Film forming emulsion for flexo and gravure inks on paper, flexible films and aluminum foil.

**JONCRYL®
FILM FORMING EMULSIONS**


Product	Appearance	Key Properties	Non-volatile (%)	pH (25°C)	Viscosity (mPa·s, 25°C)	Molecular weight (Mw)	Acid number (on solids)	Tg (°C)	MFFT (°C)	Descriptions and applications
Joncryl® HRC 1661	Milky white	Rub and water resistance	47.0	8.3	500	>200,000	54	-42	<0	High performance, film forming, hybrid rheology controlled emulsion for overprint varnish and ink applications providing significant improvements in rub and water resistance at a cost equal to comparable acrylic emulsions.
Joncryl® ECO 2177	Translucent emulsion	Low VOC, flexibility, gloss, resolubility	46.0	8.2 - 8.6	700 - 800	>200,000	55 - 64	21	11	Hard film forming acrylic emulsion that is glycol ether free and ultra-low VOC. It provides adhesion, rub and block resistance to inks and overprint varnish formulations. Joncryl® ECO products are ideal for low odor applications like confectionary and tobacco packaging.
Joncryl® DFC 3030		Direct food contact, adhesion, water and grease resistance	47.4	7.9	1,150	>200,000	64	-27	<5	Soft film forming acrylic emulsion that provides flexibility, film formation and water resistance to ink and overprint varnish formulations for direct food contact applications.
Joncryl® DFC 3040		Direct food contact, flexibility, block resistance	46.0	8.2	500	>200,000	55	21	11	Hard film forming acrylic emulsion that provides rub and block resistance to overprint varnish and ink formulations for direct food contact applications.
Joncryl® LMV 7034		Low pH maintenance, resolubility, adhesion and water resistance	47.8	7.6	800	>200,000	52	-30	<0	Film forming, low maintenance, neutral pH acrylic emulsion that imparts the adhesion and water resistant needed for utility bag also other surface print film and foil application
Joncryl® LMV 7040		Low pH maintenance, resolubility	45.5	7.3	750	>200,000	115	28	<0	Hard film forming, low maintenance, pH stable acrylic emulsion providing film integrity, adhesion and rub resistance to inks for paper, paperboard and primed foil substrates.
Joncryl® 7124		Rub and water resistance	47.5	8.2	1,100	-	51	-30	<0	Good film wetting and adhesion, as well as water and rub resistant properties that is suitable for the corrugated and flexible packaging inks and overprint vanishes.
Joncryl® 7301		Semi-translucent emulsion	Good glossiness and high transparency with good rub and block resistance.	44.0 - 46.0	8.0 - 9.0	200 - 1,000	-	58	20 - 25	15
Joncryl® 7306	White semi-translucent emulsion	Good adhesion on PET, BOPP and PE films, good block resistance and fast dry	44.0	8.0	600	>200,000	16	-	<5	A water based ink primer for variant film substrates to improve UV ink and adhesion on those films. Can also be used for metalized paper.
Joncryl® 7339		Excellent transfer, printability and rub resistance, fast drying and good gloss and hold-out	42.9	7.9	370	-	76	-	22	An acrylic emulsion for use in the inner liner of metalized paper for tobacco packaging. Provides good gloss and wet rub resistance.
Joncryl® 7607	Translucent emulsion	High heat release properties and hot-mar resistance, high gloss and contains no zinc or other crosslinkers	40.0	8.5	2,000	>200,000	114	44	-	A rheology controlled acrylic emulsion with no added zinc or other metallic crosslinkers that is designed for high heat resistance applications. This emulsion can also be used to make hot-mar resistant inks for pre-printed corrugated applications.
Joncryl® 352D	Milky white emulsion	High gloss, excellent blocking resistance, fast dry and suitable for endless-press applications	45.0	8.3	450	-	51	56	10	A styrene acrylic emulsion specifically developed for endless-press calendaring equipment. This product is recommended for printing ink on flexographic or gravure applications.
Joncryl® LV 7602	Semi-translucent emulsion	Low VOC, high gloss and fast drying rate. Good block resistance resolubility and high transparency	47.0	8 - 9	200 - 1,000	>200,000	56	20 - 26	15 - 21	A low VOC hard film forming acrylic emulsion for use in water-based inks and overprint vanishes.



JONCRYL® SELF-CROSSLINKING EMULSIONS

Product	Appearance	Key Properties	Non-volatile (%)	pH (25°C)	Viscosity (mPa·s, 25°C)	Molecular weight (Mw)	Acid number (on solids)	MFFT (°C)	Descriptions and applications
Joncryl® FLX 5000	Semi-translucent emulsion	Good resolubility, excellent blocking resistance, good dry and wet rub resistance	42.0	8.5	1,000	>200,000	100	<5	Self-crosslinking emulsion with excellent resolubility for water-based inks used for surface printing on film substrate.
Joncryl® FLX 5002		Excellent resolubility, excellent blocking resistance, good dry and wet rub resistance	35.0	8.8	240	>200,000	-	<5	A film forming emulsion with excellent resolubility for water-based inks used for surface printing on film substrates as well as printing of PE coated paper materials.
Joncryl® FLX 5020		Good alkaline, water and deep-freeze resistance, Excellent resolubility and printability, good heat seal resistance, high gloss	41.0	8.1	40	>200,000	26	13	Self-crosslinking emulsion with excellent resolubility for water-based inks used for surface printing on film substrate and lamination with solvent-free adhesives.
Joncryl® FLX 5040		Excellent bonding strength in lamination and heat-seal bond strength, excellent resolubility and printability, fast curing	42.5	8.2	40	>200,000	26	8	Self-crosslinking emulsion with excellent resolubility for water-based inks used for reverse printing on film substrates and subsequent adhesion lamination.
Joncryl® FLX 5026		Excellent printability and heat-seal resistance on OPP, high gloss and good resolubility	45.0	9	175	>200,000	7	11	Developed for surface printing white inks on OPP substrates. In a formulated white ink, A Joncryl® FLX 5026 based ink can be overprinted with both solvent based and water based colors without re-dissolving or printability problems.
Joncryl® 7266	Milky white emulsion	Excellent resolubility, good printing quality and high alcohol tolerance	44.0	8.5	500	-	-	-	Specially designed for water-based gravure ink for medium to high duty film applications.

PUD

Product	Appearance	Key Properties	Non-volatile (%)	pH (25°C)	Viscosity (mPa·s, 25°C)	Molecular weight (Mw)	Acid number (on solids)	MFFT (°C)	Descriptions and applications
Joncryl® FLX 5201	Translucent emulsion	Excellent lamination bonds on OPP, PET and nylon substrates, very good printability and resolubility, good block resistance, Swiss List compliant for food packaging.	40.0	8.5	80 - 100	>200,000	-	<0	Specially designed for use in water-based lamination inks for medium duty applications.
Joncryl® FLX 5220		Excellent lamination bond strength, suitable for a broad range of substrates, good compatibility with pigment concentrates and letdown varnishes, excellent transfer and printability.	43.0	8.0	200	>200,000	-	<5	Specially designed for use in water-based lamination inks for medium to high duty film applications.

SOLVENT-BASED RESINS

Laroflex®					
Product	Chemistry	Appearance	Key Properties	Viscosity of a 20% sol. Toluene at 23 °C (mPa·s)	Descriptions and applications
Laroflex® MP 35	Copolymer based on vinyl chloride and vinyl isobutyl ether	Fine white powder	Good pigment wetting good adhesion on film substrate, good heat stability	30 - 40	Polymer of vinyl chloride and vinyl isobutyl ether that are binder resistant to hydrolysis that can be used for solvent based lamination inks. The grades mainly differ in their viscosity and the rheology of their solutions. The less polar the solvent the greater the differences in viscosity.
Laroflex® MP 45				40 - 50	
VC copolymer 40			20 - 70	Good pigment building capacity, good compatibility with other raw materials, and good binding capacity	

Laropal®								
Product	Chemistry	Appearance	Key Properties	Non-volatile (%)	Softening temperature (°C)	Hydroxyl value (mg KOH/g)	Acid value (mg KOH/g)	Tg (°C)
Laropal® A 81	Aldehyde resin based on isobutyraldehyde	Pastilles	Excellent pigment wetting, universal compatibility with other binders provide hardness and flexibility, good adhesion on film substrate	100% solid	80 - 90	40	≤ 3	57



Lutonal®

Product	Chemistry	Appearance	Key Properties	Non-volatile (%)	Tg (°C)	Viscosity at 23°C (DIN EN ISO 3219) shear rated	Apparent viscosity at 23°C (73°F) (DIN EN ISO 2555, Brookfield RV)	Density as supplied, g/cm³
Lutonal® A 25	Polyvinyl ethers of various molar masses	Soft resin	Flexibility, Adhesion to foil and films, good compatibility	>90%	-42	2.5 - 6 Pa·s	-	0.96
Lutonal® A 50		Solution		50% in ethanol	-30	2.5 - 6 Pa·s	-	0.87
Lutonal® M 40				70% in ethanol	-49	-	50 - 250 Pa·s	0.95

Acronal®

Product	Chemistry	Appearance	Key Properties	Non-volatile (%)	Viscosity of a 50% in ethyl acetate at 23 °C (mPa·s)	Flash point (°C)	Tg (°C)	Descriptions and applications
Acronal® 4F	Poly-n-butyl acrylate	Pallets	Polymeric plasticizer, adhesion to foil and films, high solids/low viscosity solution	≥ 98.5	130 - 200	150	-40	Polymeric plasticizers that are resistant to light and aging for plasticizing cellulose nitrate and Chlorine binders for surface and lamination ink and coating on paper, film and foil.
Acronal® 700L	Copolymer from n-butyl acrylate and vinyl isobutyl ether	Liquid (Approx. 50% in ethyl acetate)		49 - 51	500 - 800	-4	-	

Versamid® PUR – Thermoplastic Polyurethane

Product	Urethane Type	Key Properties		Viscosity@ 25°C (cps)	Solids (%)	Solvents	Market application		Descriptions and applications
		Nitrocellulose	PVB				Surface print	Lamination	
Versamid® PUR 1010	Aliphatic	Yes ⁽¹⁾	Yes	850	35	21% n - propanol 44% n - propyl acetate	Flexo, gravure	Flexo, gravure	Excellent cohesion, flexibility and adhesion to a variety of polyolefin, polyester, polymer coated and metallized films. It also has excellent solvent release and good pigment dispersion capability.
Versamid® PUR 1120			No	575	42	48% iso - propanol 10% n - propyl acetate			Improved hardness, heat resistance, NC compatibility
Versamid® PUR 2011	Aromatic		No	1,000	35	45% propanol 20% n - butyl acetate	Flexo, gravure, retort, sterilization		Retort lamination ink resin with excellent hydrolysis resistance, adhesion to various barrier films. i.e. (SiOx, AlxOx) coated polyester, nylon films and foils. And have excellent pigment dispersion capability

(1) Verify compatibility with ink systems prior to use; discoloration and viscosity increase observed over time. Nitrocellulose compatibility tested at 4 to 1 resins to M/C (Hercules SS 1/4") solids in 60/40 n-propanol/n-propyl acetate



FORMULATION ADDITIVES

WAX EMULSION

Product	Appearance	Key Properties	Non-volatile (%)	pH (25°C)	Viscosity (mPa·s, 25°C)	Avg particle size (Microns)	Melting Point (°C)	Freeze-Thaw Stable	Descriptions and applications
Joncryl® wax 4	Opaque emulsion	High rub resistance, economic cost in use and ultra low VOC's	40	9	1,000	4	132	No	A new polyethylene wax dispersion designed to impart outstanding rub resistance to water-based ink formulations.
Joncryl® wax 26	Clear solution	Rub resistance, gloss	26	9.8	10	0.05	130	No	Fine particle size polyethylene wax emulsion that improves the rub resistance of water-based ink and overprint varnish with no significant loss of gloss
Joncryl® wax 35		Rub resistance, gloss	34.5	9.8	25	0.05	130	No	Fine particle size polyethylene wax emulsion that improves the rub resistance, hot mar resistance of water-based inks and overprint varnishes
Joncryl® wax 120	Straw-colored emulsion	Heat release, water repellence	34	8.8	400	0.08	56	No	Fine particle size PE/paraffin wax emulsion, designed for water shedding and release properties

CROSSLINKING AGENT

Product	Appearance	Key Properties	Non-volatile (%)	pH (25°C)	Viscosity (mPa·s, 25°C)	Freeze-Thaw Stable	Descriptions and applications
Zinc Oxide Solution#1	Translucent solution	Heat resistance	15	11.4	5	Yes	Solution of zinc oxide designed as a crosslinking agent for heat, water resistance and film hardness improvement in inks and overprint varnishes

TRANSFER ADDITIVE

Product	Appearance	Key Properties	Non-volatile (%)	pH (25°C)	Viscosity (Brookfield 20rpm, cps, 25°C)	Density at 20°C (g/cm³)	Descriptions and applications
Joncryl® 601	Clear, highly viscous liquid	Higher transfer rates, good resolubility, cleaner printing	12.5	7.5	1,300	1.05	An aqueous solution of an acrylamide polymer to increase printing process efficiency of water-based flexo inks by increasing transfer rate of the ink and improve open time on the press.



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