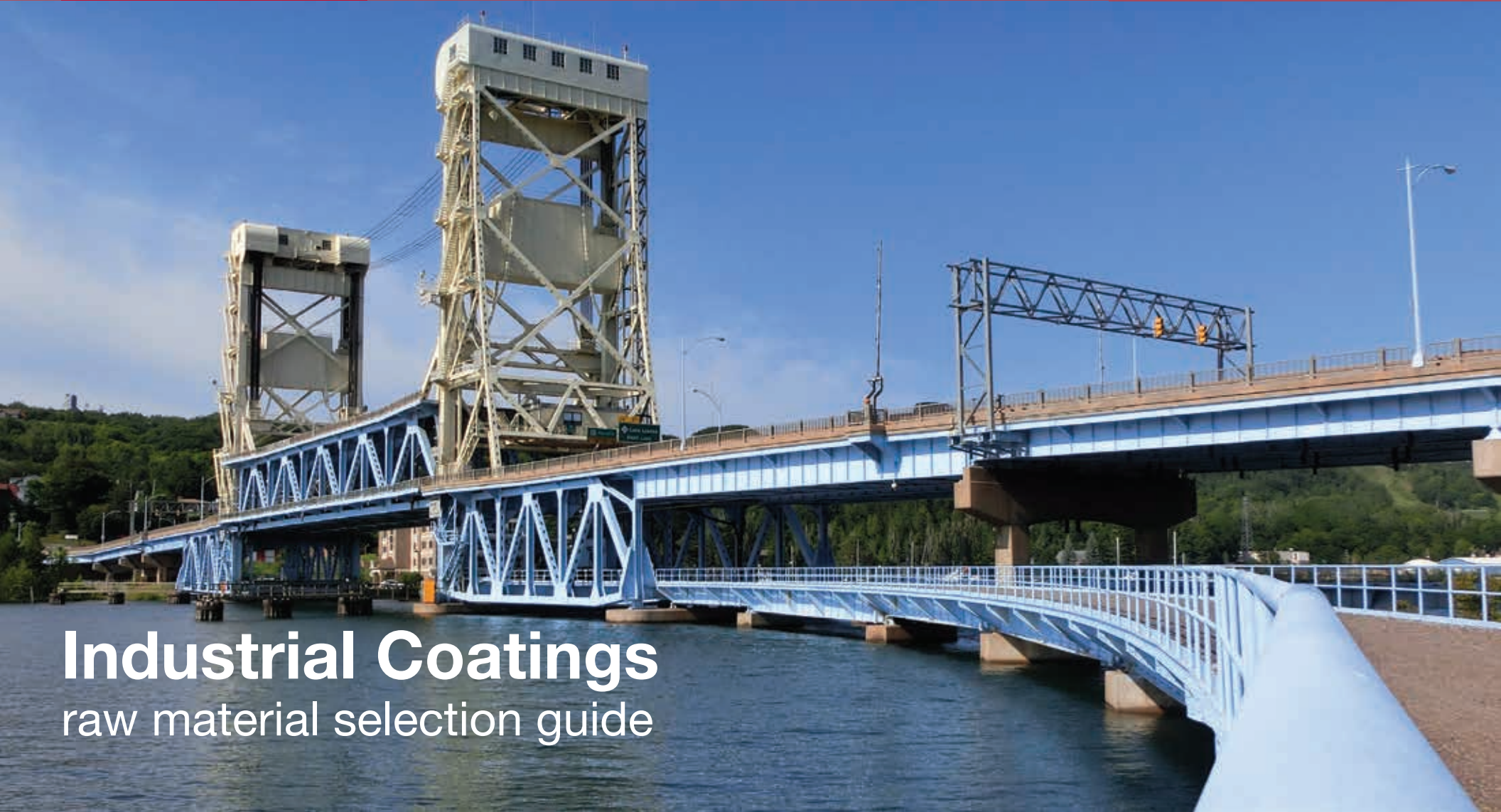




We create chemistry

A large blue steel truss bridge with two towers, spanning a river. The bridge is painted a vibrant blue and features a complex truss structure. Two tall, white towers are visible, supporting the bridge's deck. The bridge crosses a wide river, and the surrounding area includes green hills and some buildings in the distance. The sky is clear and blue.

# Industrial Coatings

raw material selection guide

# Creating Chemistry with our Customers

## About BASF's Dispersions and Resins Business

The Dispersions & Resins business of BASF develops, produces and markets a range of high-quality resins, additives, colorants, and polymer dispersions worldwide. These raw materials are used in formulations for coatings and paints, printing and packaging products, construction chemicals, adhesives, fiberbonding, non-wovens, and paper manufacturing. With a comprehensive product portfolio and extensive knowledge of the industries we serve, our customers benefit from innovative and sustainable solutions to help them advance their formulations through chemistry. For further information about the Dispersions & Resins business in North America, please visit <http://www.basf.us/dpsolutions>.

## Our commitment

Substantial investments in the development of new products, testing methods, and new high throughput screening techniques for customer-driven innovations is our commitment to helping our customers succeed.

With our broad and unique product portfolio, we aim to meet and exceed the highest market demands. Through our innovative excellence and research competence, we set new standards and market trends.

## Depth provides quality, reliability, and consistency

Widely integrated in the supply chain from the oil well to the final product. Customers benefit from our diverse products and capabilities that provide a secure supply of high quality products, an advantage hard to find anywhere else.

BASF puts continuous efforts into process improvements, new processes, and new production technologies to maintain or further improve our high quality. Our customers can simply expect more than the status quo.

The global innovation across BASF creates a one-of-a-kind network to share information and meet customer demands. With local integration, we are familiar with regional needs, and our global network helps find solutions to local market demands. Our manufacturing facilities are located around the globe.

## REACH and GHS

As a member in the international Responsible Care<sup>1</sup> initiative and as one of our company's responsibilities, BASF is committed to ecological sustainability. In supporting the legislative authorities world-wide in their efforts to ensure the safety of our environment and human health, we are well prepared for new safety standards; BASF has implemented REACH (Registration, Evaluation and Authorization of Chemicals) and GHS (Global Harmonized System) guidelines in production and supply chains. Our experts are available to consult with customers and partners implementing new safety standards.

## Innovation and services

Through close collaboration with our customers, BASF works to meet their most demanding industry standards. We provide customers with analytical, technical, and supply chain services in a broad range of industries to be your coatings solution provider in:

- Furniture and flooring
- General industrial
- Transportation and automotive
- Adhesives and sealants
- Special applications

## BASF and Industrial Coatings

By bringing all parts of the production process together – from R&D to logistics and servicing – BASF offers end-to-end solutions for the transportation and industrial coatings industry from a single source. Whether you need resins or additives, we have a complete and integrated product portfolio for you to choose from.

## Broad technology portfolio

At BASF, we focus on your needs and offer a depth and breadth of technological knowledge. Our cross-functional teams have expertise in chemistries for coatings, such as:

- Acrylic, aldehyde, acrylate and natural oil-based resins
- Polyisocyanates
- Light stabilizers
- Antioxidants and biocides

<sup>1</sup>Responsible Care is a service mark of the American Chemistry Council.

## Unique performance attributes

At BASF, we work with you to understand the performance challenges you face with your customers. That's why we develop innovative solutions that address a multitude of performance attributes, such as:

- Cure and processing profile
- Chemical resistance
- Corrosion resistance
- Gloss
- Low VOC
- Weatherability
- And many more

## Service capabilities

Our business services and technical teams from Southfield and Wyandotte, Michigan locations serve the needs of our customers by offering:

- Formulation support
- Global R&D and sourcing capabilities
- Regulatory support and product stewardship



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# Waterborne Systems

The biggest challenge within the coating industry today is providing environmentally sustainable products that offer similar coating properties to long-time standards. BASF is up for the challenge.

BASF offers a wide range of acrylic emulsions for 1-component (1K) and 2-component (2K) coatings systems. These products are designed to deliver high performance to clear and pigmented coatings on a variety of substrates like wood, concrete, plastic, and metal. The diverse products in our portfolio allow the coatings manufacturer to design coatings for primer, direct-to-metal, and topcoat applications. Our products provide the coatings manufacturer latitude to optimize product performance attributes, such as wet and dry adhesion, early water resistance, corrosion and chemical resistance, hardness, good inter-coat adhesion and excellent exterior durability.

We are committed to advancing our customers' waterborne coating systems by identifying industry needs and delivering new solutions.

## Products at a glance

- [Joncryl® Acrylic Resins](#)
- [Joncryl Acrylic Emulsions](#)
- [Acronal®, Joncryl, and Luhydran® Acrylic Emulsions](#)
- [Joncryl® Additives](#)



# Joncryl® Acrylic Resins & Additives

for waterborne coatings, floor care, and pigment dispersions

Product	Function	Acid Number (on solids)	Density supplied (g /cm <sup>3</sup> )	Softening Point (°C)	Tg (°C)	Descriptions and Applications
Joncryl 67	carboxyl	213	1.1	143	73	Alkali-soluble, high molecular weight resin. Good for pigment chipping and presscake dispersion.
Joncryl 586	carboxyl	108	1.1	115	60	Alkali-soluble, lower acid resin. Recommended as a dispersant in waterborne coatings.
Joncryl 611	carboxyl	53	1.1	112	50	Solvent-soluble, compatible with most resins for fast dry, high gloss, and high solids at low viscosity.
Joncryl HPD 671	carboxyl	214	1.1	173	128	Useful for dispersion of organic pigments and carbon black with good stability.
Joncryl 678	carboxyl	215	1.1	165	85	Alkali-soluble, mid-range molecular weight resin. Recommended as a pigment dispersant in waterborne coatings.
Joncryl 690	carboxyl	240	1.1	155	102	Alkali-soluble, high molecular weight acrylic resin. Excellent efficiency for chip quality aqueous dispersions.

Product	Physical Form	Wax Particle (nm)	Solids (wt. %)	Viscosity (cps)	pH	Density supplied (g/cm <sup>3</sup> )	Freeze Thaw Stable	Descriptions and Applications
Joncryl Wax 4	opaque emulsion	4,000	40	1,000	9.0	0.92	no	Polyethylene wax emulsion imparting excellent mar, scuff, and rub resistance at lower use levels than typical wax emulsions.
Joncryl Wax 26	translucent emulsion	53	26	10	9.8	0.98	no	Fine particle size wax; improves mar, early block, and water resistance. Normal levels will not affect gloss, clarity, or appearance of coating.
Joncryl Wax 120	hazy emulsion	93	34	400	9.0	0.97	no	Improves mar and scuff resistance. High levels will impart water beading and reduce gloss.
Zinc Oxide Solution #1	aqueous ammonia solution of zinc ions	-	15	5	11.4	1.21	yes	Crosslinking agent reacts with free acid groups of polymer. Modification improves early water, salt spray, and block resistance of the coating.

# Joncryl® Acrylic Emulsions

for waterborne systems

Product	Solids (wt. %)	Viscosity (cps)	Tg (°C)	MFFT (°C)	pH	Acid Number (on solids)	Density supplied (g/cm <sup>3</sup> )	Freeze-Thaw Stable	Grind Vehicle	Descriptions and Applications
Joncryl 95	30	100	43	20	8.0	70	1.04	yes	no	Ultra fine particle size, colloidal dispersion for wood penetration and in-can clarity. Demonstrates minimal grain raising, excellent sandability, and sealing characteristics. For use in stains, sealers, and wood preservatives. Features high Tg/low MFFT balance.
Joncryl 537	45.5	150	44	42	9.0	40	1.05	yes	yes	A "workhorse" emulsion with excellent gloss, clarity, adhesion, and manufacturing ease. Suitable as a sole vehicle or alkyd modifier for a variety of general metal, wood, and plastic finishes. Modifier for acrylic and vinyl acrylic architectural paints.
Joncryl 538-A	45	200	64	65	9.3	53	1.07	yes	yes	A multipurpose acrylic emulsion featuring acid, gasoline, and MEK resistance. Suggested for wood flat-stock primers and topcoats, can also be used as a modifier to improve hardness and solvent resistance.
Joncryl 1530	51	500	12	10	7.8	20	1.03	yes	no	A versatile emulsion offering excellent adhesion to a wide variety of substrates under a wide range of temperature and humidity application conditions. Usage for interior and exterior coatings. Shows excellent utility as a modifier for water-reducible alkyd coatings without affecting other performance properties. Passes wet adhesion testing on aluminum.
Joncryl 1532	51	400	12	14	8.0	26	1.03	yes	no	A versatile emulsion offering excellent adhesion to a wide variety of substrates including plastics, galvanized steel, and previously painted or chalked surfaces. Can also be applied under a wide range of temperature and humidity conditions. Low VOC capability.
Joncryl 1534	49	250	18	12	7.7	15	1.03	yes	no	Used as a universal primer with excellent resistance properties.
Joncryl 1907	46	500	21	20	8.3	55	1.04	yes	yes	Film forming emulsion used as a blend vehicle to impart flexibility, adhesion, and reduced solvent demand. Used for wood finishes and hardboard primers. Suitable for interior gloss brushing enamels and as a modifier to improve chalk penetration.
Joncryl 1908	48	500	98	100	8.3	55	1.04	yes	yes	A very hard emulsion often used as a blend vehicle to impart hardness and block resistance. Suitable for wood finishes and hardboard primers.
Joncryl 1915	44	800	43	0	8.5	60	1.02	no	yes	A cost-effective emulsion that meets the tough property requirements of the hardboard primers market. Offers excellent adhesion, early block resistance, and high binder efficiency. Can be formulated without added solvents in many applications.
Joncryl 1916	46	1,900	17	< 5	8.3	61	1.04	yes	yes	A unique emulsion with excellent water resistance, outstanding early block resistance, and adhesion. Can be formulated into lower VOC products in many applications.
Joncryl 1919	47	1,600	29	19	8.0	60	1.04	no	yes	A cost effective emulsion for use in hardboard primer and cement fiberboard markets. Offers excellent water resistance, adhesion, and early block resistance. Adhesion to aluminum. Can be formulated without added solvents in many applications.

# Joncryn<sup>®</sup> Acrylic Emulsions

for waterborne systems

Product	Solids (wt. %)	Viscosity (cps)	Tg (°C)	MFFT (°C)	pH	Acid Number (on solids)	Density supplied (g/cm <sup>3</sup> )	Freeze-Thaw Stable	Grind Vehicle	Descriptions and Applications
Joncryn 1921	45	1,200	25	12	8.8	58	1.04	yes	yes	An acrylic emulsion that offers a balance between block resistance and adhesion properties for hardboard primer coatings.
Joncryn 1954	47	500	38	27	8.5	54	1.04	yes	yes	A unique emulsion providing a balance of low solvent demand with excellent hardness. Useful for wood finishes, wood flat-stock primers, and topcoats. Good sanding properties for enamel undercoat and interior wood coating applications.
Joncryn 1992-A	43	124	78	> 60	8.5	17	1.03	no	no	Emulsion for ambient or force-dry cure systems offering good chemical resistance. Ideal for wood, concrete, and plastic applications.
Joncryn 2153	50	700	75	60	8.4	50	1.05	yes	yes	A low cost Rheology Controlled acrylic emulsion for waterborne wood clear and hardboard primer applications; provides low foam, good adhesion, high gloss, and fast drying without the use of conventional surfactants.
Joncryn 2534	46	500	20	20	8.0	–	1.04	yes	yes	A Rheology Controlled acrylic emulsion for waterborne interior and exterior architectural coatings. Provides alkyd-like rheology, gloss, and pigment dispersing capabilities.
Joncryn 2536	46	150	45	40	9.0	–	1.05	yes	yes	A Rheology Controlled acrylic emulsion for waterborne high gloss architectural coatings that offers excellent adhesion to a wide variety of substrates.
Joncryn 2561	48.5	750	- 11	< 5	8.0	50	1.05	yes	yes	A versatile emulsion for use in low odor, low VOC gloss paints; or as a modifier vehicle to improve adhesion, water spot, and block resistant properties. Also used as a wood stain vehicle.
Joncryn 2570	48	500	- 18	< 5	8.2	43	1.02	no	yes	Acrylic emulsion for cost-effective metal applications. Provides adhesion to multiple substrates with good block resistance, fast dry, and low VOC.
Joncryn PRO 1522	45	400	34	26	9.0	20	1.05	yes	no	An OEM direct-to-metal emulsion that has excellent corrosion resistant properties without the use of anti-corrosive pigments, which offers exterior durability, is compatible with anti-corrosive pigments, and can be formulated between 100 - 250 g/l VOC.
Joncryn PRO 1524	43	600	45	25	8.2	35	1.05	yes	no	An acrylic dispersion for direct-to-metal applications that has excellent corrosion resistance without the use of anti-corrosive pigments. Can be formulated to less than 100 g/l VOC.
Joncryn PRO 1525	44	200	56	39	8.7	19	1.04	no	no	An acrylic emulsion for high gloss direct-to-metal applications that has improved block performance over Joncryn PRO 1522.
Joncryn PRO 1537-A	47	200	46	50	8.6	49	1.03	yes	yes	An ultra fine particle size acrylic emulsion for general and specialty purpose industrial coatings offering a unique balance of acrylic benefits along with alkyd-like features. It is possible to improve stain resistance, water resistance, adhesion, and gloss properties when used as a modifier.

# Acronal<sup>®</sup>, Joncryl<sup>®</sup>, and Luhydran<sup>®</sup> Acrylic Emulsions

for waterborne systems

Product	Type of Co-polymer	Solids (wt. %)	Viscosity (cps)	Tg (°C)	MFFT (°C)	pH	Acid Number (on solids)	Density supplied (g/cm <sup>3</sup> )	Descriptions and Applications
<b>Self-crosslinking</b>									
Joncryl 1982	acrylic/styrene	41	250	78	> 70	8.5	17	1.03	One-pack, self-crosslinking emulsion with formulation stability exhibiting excellent chemical resistance and film hardness with lower yellowing. Ideal for wood and plastic applications.
Joncryl 1984	acrylic/styrene	41	< 100	78	> 70	8.4	17	1.03	Self-crosslinking emulsion with formulation stability, exhibiting UV resistance, and film hardness. Recommended for concrete and wood applications.
Joncryl 1987	acrylic/styrene	42	200	14	12	8.5	16	1.03	One-pack, self-crosslinking emulsion with good chemical resistance, excellent adhesion, and water resistance. Lower VOC requirements to meet regulations while maintaining enhanced performance.
Joncryl 2970	acrylic	43	386	5	< 5	8.9	–	1.03	Provides a wet-look for patio pavers, stamped concrete, and natural stone. Resists whitening even after weeks of continuous water exposure. Provides excellent weatherability while being 50 - 100 g/L VOC capable.
Joncryl 2980	acrylic	45	< 300	10	18	9.0	7	1.04	A one-component acrylic emulsion that provides a wet-look appearance for interior and exterior clear and pigmented coatings at 100 g/l VOC.
Joncryl 2981	acrylic	44	< 500	35	45	8.8	9	1.05	A one-pack acrylic dispersion that is non-formaldehyde emitting. Offers excellent clarity, weatherability, and excellent chemical resistance for wood coatings.
Joncryl 8383-A	acrylic/styrene	40	95	14	16	8.2	23	1.05	Soft, self-crosslinking emulsion offering good clarity and “warmth of wood”; good chemical and block resistance with excellent water resistance and wet adhesion. Recommended for concrete and wood applications.
Joncryl HYB 6340	Acrylic/ PUD Hybrid	40	50	–	45	7.6	12	1.03	Hybrid for high quality water-based clear coats on wood for professional flooring and high performance furniture
Luhydran A 848 S	butyl methacrylate	44	200	–	39	7.0	–	1.05	High standard dispersion for joinery, industrial wood, and concrete applications. Good chemical and mechanical resistance.
<b>Specialty</b>									
Acronal LR 9014	acrylic	45	250	–	< 3	8.0	–	1.04	Easy to formulate with excellent block resistance and wet adhesion. Suitable for exterior, clear or color wood coatings from medium gloss to high gloss.
Acronal PRO 80 NA	modified acrylic	50	190	–	22	8.5	–	1.09	Usage as an anti-corrosion primer for medium-duty applications. Exhibits enhanced corrosion resistance along with early rain and humidity resistance properties.
<b>Hydroxyl functional</b>									
Joncryl 540	acrylic/ meth-acrylic/styrene	44	500	42	2.5	8.5	49	1.04	A crosslinkable emulsion with melamines. High gloss potential with good hardness and resistance properties. Suitable for thermoset, metal, hardboard, and coil coating applications.
Joncryl OH 8313	acrylic/ styrene	45	360	100	48	2.7	9	1.04	A reactive emulsion for high quality, semi- or high gloss topcoat applications in both clear and pigmented systems. Appropriate for use in kitchen and bathroom furniture coatings, as well as exterior wood and metal applications.
Luhydran S 938 T	acrylic/ meth-acrylic/styrene	45	25	100	60	2.0	–	1.06	APEO-free crosslinkable emulsion for furniture laminates or heat-cure coatings and two-component polyurethane interior applications. Hydroxyl value of 100.

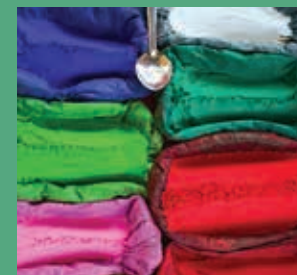


# Solventborne and Solvent-Free

BASF offers a wide range of products for solventborne and solvent-free systems. Joncryl® polyol grades are hydroxy functional acrylic co-polymers for solvent-based coatings. They are mainly used as binders crosslinked with polyisocyanates such as Basonat® in 2K PU coatings. High solid Joncryl polyols can also be used in combination with other binder chemistries to improve performance at reduced VOC levels. The outstanding properties of Laroflex® MP are based on the monomers vinyl chloride and vinyl isobutyl ether. With the range of Laroflex MP products, you are sure to find the binder viscosity to match your needs. A wide choice of viscosities means a wide range of applications – coatings resistant to chemicals, anti-corrosion paints for iron and steel, protective coatings on non-ferrous metals, coatings for mineral substrates, gravure inks, road-marking paints, marine and anti-fouling paints. Sovermol® polyols have been specially designed for use in coatings, adhesives, and putty applications. These natural oil-based, solvent-free polyols help you comply with environmental legislation while meeting even the toughest production regulations.

## Products at a glance

- [Joncryl Acrylic Polyols](#)
- [Joncryl Rapid Property Development \(RPD\) Polyols](#)
- [Joncryl Fast Cure Acrylic Polyols](#)
- [Sovermol Natural Oil-based, Solvent-free Polyols](#)
- [Laropal® Aldehyde Resins](#)
- [Lutonal® Polyvinylether Resins](#)
- [Laroflex Vinyl Chloride Binders](#)
- [Joncryl Acrylic Resins for Powder Coatings](#)



# Joncryl® Acrylic Polyols

for solventborne high solids systems

Product	VOC Range formulated (lbs/gal)	Solids (wt. %)	Primary Solvent**	Tg (°C)	Equivalent Weight (-OH, on solids)	Hydroxyl Number (on solids)	Viscosity (cps)	Density supplied (g/cm <sup>3</sup> )	Recommended for Baking Applications	Descriptions and Applications
Joncryl 500	2.3 - 3.8	80	MAK	- 7	400	140	3,900	1.03	yes	Acrylic polyol with good hardness, stain resistance, and pigment dispersibility. Broad resin compatibility and useful as a low VOC modifier for appliance, office furniture, and general metal coatings. Recommended for high-build maintenance finishes and other polyurethane coatings.
Joncryl 504	2.3 - 3.8	80	xylene	- 7	400	140	7,400	1.04	yes	Xylene version of Joncryl 500 offering electrostatic application ability. Recommended for high solids melamine baking systems and urethane coating systems.
Joncryl 507	2.8 - 3.8	80	n-butyl acetate	- 7	400	140	3,800	1.04	yes	Alternate solvent version of Joncryl 500 for non-HAPs applications.
Joncryl 508	Exempt*	75	t-butyl acetate	- 7	400	140	4,000	1.03	no	Alternate solvent version of Joncryl 500 for applications using exempt* solvents.
Joncryl 550	4.0 +	62	PM acetate/toluene (65:35)	49	620	90	6,500	1.05	yes	Conventional solids polyol. Fast dry with long pot life and good exterior durability.
Joncryl 551	4.0 +	60	xylene	49	620	90	6,000	1.02	yes	Joncryl 550 resin in an alternative, economical solvent.
Joncryl 552	4.0+	62	n-butyl acetate	49	620	90	5,500	1.04	yes	Joncryl 550 resin in an alternative non-HAPs solvent.
Joncryl 581	4.0 +	100	–	62	360	155	solid	1.16	yes	100% solids polyol used in both two-component urethane and acid-cure coatings offering good chemical resistance and hardness. Ideal for interior or sheltered exterior wood and metal applications.
Joncryl 582	3.8 +	100	–	62	360	155	solid	1.16	yes	100% solids polyol used in both two-component urethane and acid-cure coatings offering good chemical resistance and hardness. Improves early hardness development in conversion varnishes, and can replace styrene/allyl alcohol copolymers.
Joncryl 587	4.0 +	100	–	57	610	92	solid	1.16	yes	Conventional solids, “workhorse” polyol. Very fast dry with long pot life and excellent UV and chemical resistance. Solid form provides cost benefit and formulator versatility.
Joncryl 587-AC	Exempt*	50	acetone	57	610	92	200	0.95	no	50% solids cut of Joncryl 587 in acetone for applications using exempt solvents*.
Joncryl 804	4.0 +	100	–	70	1,250	45	solid	1.15	yes	High equivalent weight for low NCO demand. Can be used to formulate low cost, two-component urethane coatings.
Joncryl 901	3.2 - 4.4	77	MAK	20	500	112	17,500	1.07	yes	Excellent exterior durability with good chemical and solvent resistance. Ideal for high performance, lower VOC maintenance, and rail and transportation topcoats.
Joncryl 902	3.2 - 4.4	75	n-butyl acetate	20	500	112	9,000	1.09	yes	Joncryl 901 resin in an alternate solvent. Recommended for high performance maintenance and transportation coatings.
Joncryl 903	Exempt*	60	PCBTF	20	500	112	6,070	1.22	–	An acrylic polyol for high solids polyurethane coatings with VOC exempt* solvent, fast dry time, and excellent gloss retention.
Joncryl 906-AC	Exempt*	75	acetone	16	600	93	6,500	1.07	no	Alternate solvent version of Joncryl 906 for applications using exempt* solvents providing excellent weatherability and hardness.

\* Consult Federal EPA, state, and local area regulations regarding status of VOC regulations and exempt solvent listings. Air quality regulations are not consistent throughout the United States. Consult proper regulatory entities if operating in Canada or Mexico regarding any regulations.

\*\* Additional solvent cuts may be available upon inquiry.

# Joncryl® Acrylic Polyols

for solventborne high solids systems

Product	VOC Range formulated (lbs/gal)	Solids (wt. %)	Primary Solvent**	Tg (°C)	Equivalent Weight (-OH, on solids)	Hydroxyl Number (on solids)	Viscosity (cps)	Density supplied (g/cm <sup>3</sup> )	Recommended for Baking Applications	Descriptions and Applications
Joncryl 933	2.9 - 4.0	80	n-butyl acetate	7	800	70	8,000	1.05	yes	Lower VOC, high equivalent weight acrylic polyol for industrial two-component polyurethane applications. Recommended for industrial maintenance finishes requiring long pot life and good weatherability.
Joncryl 935	3.2 - 4.4	70	MAK	17	375	150	8,500	1.03	no	High performance polyol for polyurethane coatings. Offers excellent chemical resistance and exterior durability. Suitable for automotive refinish and industrial applications.
<b>Reactive modifiers</b>										
Joncryl 960	1.0 +	98 +	–	- 44	675	83	14,500	1.05	yes	A pourable liquid, reactive acrylic alternative to polycaprolactone resin for use in high solids systems for VOC reduction. Provides increased flexibility, while maintaining chemical resistance and improving acid-etch resistance. Greater flexibility than Joncryl 963.
Joncryl 963	1.0 +	98 +	–	- 59	432	130	7,500	1.03	yes	A reactive diluent or flexibilizing modifier resin for high performance automotive and industrial applications. Offers VOC reduction with improved weatherability without sacrificing hardness.

\*\* Additional solvent cuts may be available upon inquiry.

# Joncryl Rapid Property Development Polyols

for solventborne high solids systems

Product	VOC Range formulated (lbs/gal)	Solids (wt. %)	Primary Solvent	Tg (°C)	Equivalent Weight (-OH, on solids)	Hydroxyl Number (on solids)	Viscosity (cps)	Density supplied (g/cm <sup>3</sup> )	Recommended for Baking Applications	Descriptions and Applications
Joncryl RPD 950-AC/P	2.1 +	65	acetone/ PCBTF (3:1)	27	510	110	3,000	1.03	no	Acrylic polyol for solventborne 2K polyurethane systems in auto refinish and general industrial applications; fast cure, early hardness, and long pot life. Supplied in VOC exempt* solvents.
Joncryl RPD 950-B	4.0 +	61	n-butyl acetate	27	510	110	4,500	1.01	no	Acrylic polyol for solventborne 2K polyurethane systems in auto refinish and general industrial applications; fast cure, early hardness, and long pot life.
Joncryl RPD 980-B	2.1 +	80	n-butyl acetate	-7	400	140	5,800	1.03	no	Acrylic polyol for high solids solventborne 2K polyurethane systems in auto refinish and general industrial applications; fast cure, early hardness, and long pot life.
Joncryl RPD 980 P	1.0+	70	PCBTF	-7	400	140	5,000	1.16	No	Alternate solvent version of Joncryl RPD 980-B for applications using exempt* solvents.

\* Consult Federal EPA, state, and local area regulations regarding status of VOC regulations and exempt solvent listings. Air quality regulations are not consistent throughout the United States. Consult proper regulatory entities if operating in Canada or Mexico regarding any regulations.

# Joncryl® Fast Cure Acrylic Polyols

for solventborne high solids systems

Product	VOC Range formulated (lbs/gal)	Solids (wt. %)	Primary Solvent	Tg (°C)	Equivalent Weight (-OH, on solids)	Hydroxyl Number (on solids)	Viscosity (cps)	Density supplied (g/cm <sup>3</sup> )	Descriptions and Applications
Joncryl 909	3.3 - 4.5	68	n-butyl acetate	25	480	117	6,500	1.03	Offers early hardness development and through cure with balanced pot life. Good gloss retention, durability, and chemical resistance makes it suitable for automotive and industrial applications.
Joncryl 910	3.4 - 4.7	71	MAK	9	600	94	7,000	1.04	High performance, high solids polyol for polyurethane coatings. Offers unusually good pot life, Skydrol** resistance, and dry time characteristics with outstanding QUV gloss retention.
Joncryl 911	3.0 - 4.2	77	n-butyl acetate	7	800	70	7,000	1.05	Lower VOC, high equivalent weight acrylic polyol for industrial two-component polyurethane applications. Good hardness development and durability. Recommended for high-build maintenance finishes and other polyurethane coatings.
Joncryl 912	Exempt*	75	t-butyl acetate	7	800	70	7,000	1.04	Alternate solvent version of Joncryl 911 for applications using exempt* solvents.
Joncryl 915	3.2 - 4.4	77	n-butyl acetate	13	590	95	7,500	1.04	Lower VOC polyol offering fast dry characteristics combined with excellent scratch resistance. Supplied in a low odor solvent.
Joncryl 920	2.3 - 3.8	80	MAK	- 7	400	140	6,000	1.03	A low VOC polyol offering good dry time and pot life characteristics. Useful as a sole resin or a modifier for other polyols such as Joncryl 910.
Joncryl 922	2.3 - 3.8	80	n-butyl acetate	- 7	400	140	5,500	1.05	Alternate solvent version of Joncryl 920 for high performance, low odor applications.
Joncryl 924	Exempt*	70	PCBTF	- 7	400	140	6,000	1.16	Alternate solvent version of Joncryl 920 for applications using exempt* solvents.
Joncryl 934	2.9 - 4.0	77	n-butyl acetate	7	800	70	5,000	1.04	Lower VOC, high equivalent weight acrylic polyol for industrial two-component polyurethane applications. Recommended for industrial maintenance finishes.
Joncryl 942	3.0 - 4.2	73.2	n-butyl acetate	26	400	140	7,500	1.05	High solids acrylic polyol with exceptionally fast, early, and final hardness development. Suitable for automotive and industrial applications.
Joncryl 945	2.5 - 4.0	76	n-butyl acetate	17	310	180	4500	1.07	High solids acrylic polyol with exceptionally fast, early, and final hardness and lower VOC. Useful as sole resin or modifier. Recommended for industrial maintenance finishes.
Joncryl 948	3.0 - 4.4	78	n-butyl acetate	9	800	70	13,750	1.04	Recommended for polyurethane coatings in industrial maintenance applications.

\* Consult Federal EPA, state, and local area regulations regarding status of VOC regulations and exempt solvent listings. Air quality regulations are not consistent throughout the United States. Consult proper regulatory entities if operating in Canada or Mexico regarding any regulations.

\*\* Skydrol is a registered trademark of Solutia Inc.

# Sovermol® Natural Oil-based, Solvent-free Polyols

for solvent-free systems

Product	Type	Renewable Content (%)	Solids (wt. %)	Functionality	Hydroxyl Value (mg KOH/g)	Hydroxyl Equivalent Weight	Viscosity @ 25°C (cps)	Density supplied (g/cm <sup>3</sup> )	Descriptions and Applications
Sovermol 100	branched polyether	–	100	3.0	880	64	6,000	1.1	A polyol used in combination with other Sovermol types for solvent-free, UV-stable coatings for floorings, adhesives, and casting materials with high chemical resistance and hardness; increases Tg temperature and crosslinking density.
Sovermol 750	branched polyether/polyester	65 - 80	100	3.0	315	178	1,100 @ 20°C	1.0	A polyol used in combination with isocyanates as a reactive component for 2-pack polyurethane coatings, floorings, and casting materials; excellent UV, weathering, and chemical resistance with HDI isocyanates.
Sovermol 1080	branched polyether/polyester	65 - 80	100	3.5	170	330	3,400	1.0	A polyol used in combination with isocyanates as a reactive component for 2-component urethane systems; less sensitivity to moisture while curing.
Sovermol 1092	branched polyether/polyester	65 - 80	100	2.8	283	198	800	1.0	A high performance polyol used in combination with isocyanates as a reactive component for ductile - hard polyurethane coating and casting materials; excellent pigment wetting, very low viscosity, less sensitivity to moisture while curing, and extremely hydrophobic.

# Laropal® Aldehyde Resins

for solventborne pigment dispersions

Product	Type of Resin	Physical Form	Solids (wt. %)	Softening Range (°C)	Density @ 20°C (g/cm <sup>3</sup> )	Iodine Color (max)	OH Value calculated (mg KOH/g)	Saponification Value (mg KOH/g)	Tg (°C)	Solubility	Compatibility	Descriptions and Applications
Laropal A 81	aldehyde	pale colored pellets	98 +	80 - 95	1.11	3	40	65	57	alcohols, esters, ketones, aromatic hydrocarbons, (aliphatic hydrocarbons restricted)	nitrocellulose, alkyds, acrylates, chlorinated rubber, VC co-polymers	Light stable, low viscosity, and very compatible aldehyde resins with excellent pigment wetting. Ideal for solventborne pigments and pigment pastes; can be used as co-binders for improving solids content.
Laropal A 101			98 +	95 - 110	1.1	5	35	62	73			

# Lutonal® Polyvinylether Resins

for solventborne systems

Product	Type of Ether	Physical Form	Solids (wt. %)	Viscosity @ 23°C (cps)	Density @ 20°C (g/cm <sup>3</sup> )	Iodine Color (max)	Flash Point (°C)	K Value	Tg (°C)	Solubility	Compatibility	Descriptions and Applications
Lutonal A 25	polyvinyl ethyl	liquid	> 90	2,500 - 6,000	0.96	15	≥ 55	10 - 17	- 43	alcohols, esters, ketones; aliphatic, aromatic and chlorinated hydrocarbons	nitrocellulose, natural resins	Largely a saponification-resistant soft resin for increasing the adhesion and flexibility of coatings and printing inks. Excellent co-binder in anti-fouling paints.
Lutonal A 50		solution in ethanol	50	5,000 - 20,000	0.87	4	9	55 - 65	- 30			
Lutonal I 60 ca.80% in hydrotreated light naphtha	polyvinyl isobutyl	solution in mineral spirit	80	53 - 68	0.90	7	11	53 - 68	- 27	higher alcohols, esters, ketones; aliphatic and aromatic hydrocarbons	natural resins, Laropal® aldehyde resins, Palatinol® and Palamoll® plasticizers	Saponification-resistant soft resin for increasing adhesion and flexibility
Lutonal M 40 ca.70% in Ethanol	polyvinyl methyl	solution in ethanol	70	50,000 - 250,000	0.95	15	11	45 - 55	- 49	water, alcohols, glycols, esters, glycol esters, aromatic and chlorinated hydrocarbons	nitrocellulose, natural resins, Laropal® aldehyde resins, Acronal® acrylic resins, Palatinol® plasticizers	Largely a saponification-resistant soft resin for increasing the adhesion and flexibility of coatings and printing inks. Ideal co-binder in anti-fouling paints and heat sensitive blends with polymer dispersions.
Lutonal M 40		soft Resin	≥ 95	NA	1.03	15	230					
Lutonal M 40 ca.50% in Water		solution in water	approx. 50	25,000 - 200,000	0.95	15	11					

# Laroflex® Vinyl Chloride Binders

for solventborne systems

Product	Type of Binder	Physical Form	Softening Range (°C)	Density @ 20°C (g/cm <sup>3</sup> )	Chlorine Mass Fraction (%)	K Value	Solubility	Compatibility	Descriptions and Applications
Laroflex MP 15	co-polymer of vinyl chloride and vinyl isobutyl ether	fine white powder	46 - 48	1.25	40	30	aromatic hydrocarbons, esters, ketones, glycol ethers, acetates	alkyd-acrylic resins, hydrocarbon resins, cyclohexanone aldehyde resins	Low viscosity, non-hydrolyzable, chlorinated binders for physically drying paints. Ideal for anti-corrosion paints, road marking paints, and printing inks.
Laroflex MP 25			48 - 52	1.24	44	35			
Laroflex MP 35			48 - 52	1.24	44	35			
Laroflex MP 45			48 - 52	1.24	44	35			

# Joncryl® Acrylic Resins

for powder coatings

Product	Functionality	Acid/ Hydroxyl Number	Equivalent Weight	Molecular Weight	Softening Point (°C)	Tg (°C)	Chemistry	Appearance	Chemical Resistance	Corrosion Resistance	Flexibility	Flow	Hardness	Descriptions
<b>Hydroxyl acrylic</b>														
Joncryl 587	hydroxyl	92	610	18,000	110	57	urethane		✓			✓	✓	Acrylic polyol designed for UV resistant powder coatings.
Joncryl 804	carboxyl/hydroxyl	15/45	1,250	12,500	105	70	urethane					✓	✓	Acrylic polyol designed for UV resistant powder coatings.
<b>Carboxyl acrylic</b>														
Joncryl 682	carboxyl	238	236	1,700	105	56	hybrid	✓	✓	✓				Acrylic resin for semi-gloss acrylic hybrid powder coatings.
Joncryl 817	carboxyl	55	1,020	14,000	120	68	hybrid		✓				✓	Acrylic resin for 60/40 acrylic hybrid powder coatings.
Joncryl 819/820	carboxyl	75	748	15,000	115	57	hybrid		✓		✓		✓	Acrylic resin for 50/50 acrylic hybrid powder coatings.
Joncryl 821/822	carboxyl	70	800	10,500	112	62	hybrid	✓	✓		✓		✓	Acrylic resin for 50/50 acrylic hybrid powder coatings.
Joncryl 848	carboxyl	215	261	4,500	127	67	hybrid			✓	✓			Acrylic resin for gloss control in acrylic hybrid powder coatings; also used as a sole acrylic for ultra low gloss.

# Crosslinkers

BASF has a crosslinker for your high performance coating system. Whether you are looking for a hardener for formaldehyde technology for wood, foil or coil coating application, or the latest Hexamethylene-based isocyanate crosslinkers for exterior polyurethane coating system, BASF has a product that fits your needs.

## Products at a glance

- [Basonat® and DDI Aliphatic Crosslinkers](#)
- [Luwipal® and Plastopal® Amino Resins](#)





# Basonat® and DDI

## aliphatic crosslinkers

Product	Type	Solids (wt. %)	Solvent	NCO (%)	Equivalent Weight	Viscosity @ 23°C (cps)	Density @ 20°C (g/cm <sup>3</sup> )	Descriptions and Applications
<b>HDI biuret</b>								
Basonat HB 100	polyisocyanate	100	–	22 - 23	187	2,500 - 4,500	1.12	Offers superior weather and chemical resistance with excellent gloss retention and light stability. Compatible with a wide range of resins. Recommended for wood, furniture, plastic, and industrial finishes.
Basonat HB 175 MP/X	polyisocyanate	75	methoxypropyl acetate/xylene	16 - 17	255	130 - 300	1.07	
Basonat HB 275 B	polyisocyanate	75	n-butyl acetate	16 - 17	255	130 - 300	1.06	
Basonat HB 475 B/X	polyisocyanate	75	n-butyl acetate/xylene	16 - 17	255	100 - 250	1.06	
<b>HDI isocyanurate</b>								
Basonat HI 100	polyisocyanate	100	–	21.5 - 22.5	191	2,500 - 4,000	1.17	Excellent gloss retention and light stability with outstanding weather, chemical, and abrasion resistance. Recommended for automotive, plastic, and industrial applications. Basonat HI 2000 is a low viscosity version of Basonat HI 100.
Basonat HI 190 B/S	polyisocyanate	90	n-butyl acetate/Solvesso* 100 (1:1)	19.3 - 20.3	212	450 - 650	1.13	
Basonat HI 290 B	polyisocyanate	90	n-butyl acetate	19.3 - 20.3	212	400 - 600	1.13	
Basonat HI 2000	polyisocyanate	100	–	22.5 - 23.5	182	900 - 1,500	1.17	
<b>Water-emulsifiable HDI isocyanurate</b>								
Basonat HW 1000	polyisocyanate	100	–	16.5 - 17.5	247	2,000 - 6,000	1.17	Excellent gloss retention and light stability with outstanding weather and chemical resistance. Emulsifiable in water with good stability, long pot life, and broad formulation latitude. Suitable for automotive, plastic, and industrial applications.
Basonat HW 1180 PC	polyisocyanate	80	propylene carbonate (Solvenon® PC)	13 - 14	312	450 - 850	1.18	
Basonat HW 2000	polyisocyanate	100	–	17.5 - 18.5	233	1,500 - 3,000	1.16	
<b>HDI allophanate</b>								
Basonat HA 1000	polyisocyanate	100	–	21 - 23	191	900 - 1,500	1.1	Offers superior lightfast and weather resistance for high solids coatings. Homogeneous incorporation into polyester emulsions, alkyd resin emulsions, and secondary dispersions. Compatible with a broad range of solvents permitting adjustments in dry time. Suitable for automotive, wood/furniture, plastic, and industrial finishes.
Basonat HA 2000	polyisocyanate	100	–	18.5 - 21.5	210	500 - 900	1.1	
Basonat HA 3000	polyisocyanate	100	–	19 - 20	215	200 - 400	1.1	
<b>Diisocyanate</b>								
DDI 1410	diisocyanate	100	–	13.6 - 14.4	300	130 @ 25°C	0.924 @ 25°C	A low viscosity, aliphatic diisocyanate designed to react with compounds containing hydrogen to form low molecular weight derivatives or specialty polymers. Non-yellowing in outdoor exposure, low order of toxicity, flexibility and extensibility, low water sensitivity; solubility in a wide range of solvents.

\* Solvesso is a registered trademark of ExxonMobile Corporation.

# Luwipal® and Plastopal®

## amino resins

Product	Type of Resin	Etherifying Alcohol	Solvent	Solids (wt. %)	Free Formaldehyde (max %)	Viscosity (cps)	Shear Rate (s <sup>-1</sup> )	Acid Value (mg KOH/g)	Density (g/cm <sup>3</sup> )	Hazen Color Number	Baking Reactivity	Reactivity w/Acids	Descriptions and Applications
Luwipal 044 ULF	melamine formaldehyde amino resins	n-butanol	-	94 - 97	0.1	2,000 - 5,000	41.4	< 1	1.0	< 50	high	high	Melamine formaldehyde amino resin suitable for coatings with solvents. Excellent for can/coil and wood applications.
Luwipal 066 LF				93 - 96	0.3	2,000 - 6,000	41.3	< 1	1.2	< 50	high	high	Melamine formaldehyde amino resin suitable for coatings with solvents and/or water. Used in automotive, industrial and can/coil applications.
Luwipal 072		methanol	isobutanol	73 - 77	1.0	4,000 - 7,000	20.6	< 1	1.2	< 50	high	low	Melamine formaldehyde amino resin suitable for coatings with solvents and/or water. Used in automotive and industrial applications.
Plastopal EBS 400 B	urea formaldehyde resin	n-butanol	n-butanol	59 - 62	0.8	1,400 - 1,700	82.6	<3	1.0	<50	high	high	
Plastopal EBS 400 I	urea formaldehyde amino resins	isobutanol	isobutanol	59 - 62	1.0	1,400 - 1,700	82.6	< 3	1.0	< 50	high	high	
Plastopal H 73 IB				59 - 62	0.4	4,000 - 7,000	20.6	< 3	1.0	< 100	high	high	
Plastopal H 85 EB LF		n-butanol	ethanol/ n-butanol 2:1	85 - 90	0.3	3,000 - 6,000	20.6	< 1	1.0	< 100	low	medium	Urea formaldehyde amino resins suitable for solvent-based coatings. Excellent for wood applications.

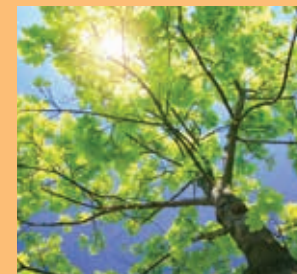
# Energy Curable Systems

UV energy or electron-beam technology is used in various applications and industries such as printing and packaging, adhesives, transportation and industrial coatings, furniture and flooring, electronics, and special applications. Advantages of this technology include:

- Faster curing rates over conventional drying techniques
- Low thermal stressing on substrates
- Good adhesion to a wide range of substrates
- Low energy consumption
- High scratch and chemical resistance
- Reduces the use of volatile organic solvents

## Products at a glance

- Laromer® Oligomers
- Laromer Reactive Diluents
- Irgacure® Photoinitiators



# Laromer® Oligomers

product technology

Laromer*	Type of Resin	Diluent (content)	Functionality (calculated)	Relative Molar Mass (calculated, g/mol)	Viscosity @ 23°C (cps)	Hydroxyl Value (approx. mg KOH/g)	Hardness	Elasticity	Reactivity	Abrasion Resistance	Chemical Resistance	Scratch Resistance	Weathering	Descriptions
<b>Epoxy acrylate</b>														
LR 8765 R	aliphatic		2.0	330	600 - 1,200	330	■	■ ■	■ ■		■			Partially water-soluble, flexible, and highly reactive.
LR 8986	aromatic		2.4	510	3,000 - 6,000	170	■ ■	■ ■	■ ■		■ ■			Low viscosity, free of diluents, and resistant to chemicals.
LR 9019	aromatic		2.4	580	15,000 - 25,000	175	■ ■	■ ■	■ ■		■ ■			Very highly reactive and resistant to chemicals.
LR 9023	aromatic	DPGDA (15%)	2.4	480	2,000 - 5,000	150	■ ■	■ ■	■ ■		■ ■			Diluted version of Laromer LR 9019.
<b>Polyester acrylate</b>														
LR 8800			3.0	900	4,000 - 8,000	80	■ ■	■ ■	■ ■		■ ■			Hard, resistant to chemicals, and low odor.
LR 8981			3.0	1,300	4,000 - 14,000	80	■	■ ■	■ ■		■ ■			Very highly reactive, flexible, with good sanding properties.
PE 44 F			3.0	940	2,000 - 5,000	80	■	■ ■	■ ■		■ ■			Free of diluents, low viscosity, low odor, and flexible.
PE 55 F			3.1	750	25,000 - 45,000	70	■ ■	■ ■	■ ■	■ ■	■ ■			Well balanced properties, leads to a tough film.
PE 56 F			3.1	750	20,000 - 40,000	70	■ ■	■ ■	■ ■	■ ■	■ ■			Better compatibility with reactive diluents compared to Laromer PE 55 F.
PE 9024			2.6	1,100	10,000 - 30,000	70	■ ■	■ ■	■ ■		■ ■			Compatible with nitrocellulose.
PE 9079			3.4		2,000 - 4,000 @ 60°C	50	■ ■	■ ■	■ ■		■ ■			Highly viscous, pronounced elasticity and toughness.
PE 9105			4.0		150 - 400	60	■ ■	■ ■	■ ■		■ ■			Good substrate wetting, low viscosity.

\* All products registered with REACH and TSCA. All other countries, please contact your BASF representative.

superior ■■■■ excellent ■■■ very good ■■ good ■

# Laromer® Oligomers

product technology

Laromer*	Type of Resin	Diluent (content)	Functionality (calculated)	Relative Molar Mass (calculated, g/mol)	Viscosity @ 23°C (cps)	Hydroxyl Value (approx. mg KOH/g)	Hardness	Elasticity	Reactivity	Abrasion Resistance	Chemical Resistance	Scratch Resistance	Weathering	Descriptions
<b>Urethane acrylate</b>														
LR 8987	aliphatic	HDDA (30%)	2.3	580	4,000 - 6,000	11	■ ■ ■	■ ■	■ ■		■ ■ ■	■ ■	■ ■	Scratch and weather resistant for outdoor applications.
UA 19 T	aliphatic	TPGDA (35%)	2.0	950	14,000 - 32,000	10	■ ■	■ ■ ■	■		■		■ ■ ■	Low yellowing and flexible at room temperature and temperatures below 0°C.
UA 9033	aliphatic	LR 8887 (30%)	1.7	1,230	15,000 - 25,000	6	■	■ ■ ■ ■	■ ■ ■	■ ■ ■	■ ■		■ ■ ■	Highly flexible, highly reactive, and good adhesion.
UA 9047	aliphatic	n-butyl acetate (20%)	> 6.0		2,000 - 7,000	10	■ ■ ■	■ ■	■		■ ■ ■ ■			Physical drying, best performance when UV cured at high temperature.
UA 9072	aliphatic	TBCH (30%)	1.7		2,000 - 15,000 @ 60°C	6	■	■ ■ ■ ■	■		■ ■			Extremely flexible, best strain-stress behavior.
<b>Polyether acrylate</b>														
LR 8863	ethoxylated TMP-triacrylate		3.0	450	50 - 100	10	■ ■ ■	■	■		■ ■ ■			Low viscosity, low yellowing, and low odor diluent.
LR 8967			2.6	380	120 - 190	50	■ ■ ■	■ ■	■ ■		■ ■ ■			Low viscosity version of Laromer PO 43 F, good surface cure.
LR 8982			2.7	600	150 - 300	70	■ ■ ■	■ ■	■ ■		■ ■			Partially water-soluble, spray viscosity adjustable.
PO 43 F			2.4	430	200 - 400	100	■ ■ ■	■ ■	■ ■		■ ■ ■			All-purpose resin, resistant to chemicals.
PO 9102	propoxylated (2.0) neopentyl glycol diacrylate		2.0		10 - 20	1	■ ■	■ ■	■		■ ■			Good substrate and pigment wetting, low viscosity.
<b>Polyether acrylate (amine-modified, free of monomers)</b>														
LR 8996			2.9	480	50 - 90	30	■ ■	■ ■	■ ■ ■		■ ■ ■			High reactivity, very low in color and viscosity.
PO 77 F			2.9	690	1,000 - 3,000	120	■	■ ■ ■	■ ■ ■		■ ■ ■			Very highly reactive, versatile resin, good sanding properties.
PO 94 F			3.5	750	300 - 600	55	■ ■	■ ■ ■	■ ■ ■ ■		■ ■ ■ ■			Very high reactivity and good pigment wetting.

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# Laromer® Oligomers

product technology

Laromer*	Type of Resin	Diluent (content)	Functionality (calculated)	Relative Molar Mass (calculated, g/mol)	Viscosity @ 23°C (cps)	Hydroxyl Value (approx. mg KOH/g)	Hardness	Elasticity	Reactivity	Abrasion Resistance	Chemical Resistance	Scratch Resistance	Weathering	Descriptions
<b>Water based</b>														
LR 8983	aromatic urethane acrylate dispersion	water (60%)	0.7	10,000	50 - 300		■ ■	■ ■	■ ■		■ ■			Excellent physical drying properties, easy to formulate.
PE 22 WN	polyester acrylate	water (50%)	2.2	700	150 - 500		■ ■	■ ■	■ ■		■ ■			Hard, resistant to chemicals, with good sanding properties.
PE 55 WN	polyester acrylate	water (50%)	2.2	700	250 - 650		■ ■	■ ■	■ ■		■ ■			Flexible, easy to matte, well balanced properties.
UA 9059	aliphatic urethane acrylate	water (30%)	1.8		6,000 - 11,000		■	■ ■	■ ■		■			Excellent adhesion on wood, very flexible, excellent "coin-test" results.
UA 9064	urethane acrylate dispersion	water (62%)			20 - 250		■ ■	■ ■	■ ■		■ ■			Low yellowing version of Laromer UA 9060.
UA 9095	urethane acrylate dispersion	water (60%)	2.2		50 - 500		■ ■	■ ■	■ ■		■ ■			Good grain enhancement on wood, excellent adhesion on PVC.
WA 9057	acrylated acrylic emulsion	water (60%)			10 - 200		■ ■	■ ■	■ ■		■ ■			Good chemical and scratch resistance, excellent block resistance.
<b>Special energy curable</b>														
PO 9026 N	nano-modified polyether acrylate		1.5	450	600 - 1,500		■ ■	■	■ ■		■ ■	■ ■		Contains 50% non-crystalline nano-silica, very scratch resistant.
LR 9013	modified polyether acrylate		1.5	1,700	45,000 - 70,000	25	■ ■	■	■		■ ■			Excellent pigment wetting properties, low in shrinkage.
UP 35 D	unsaturated polyester	DPGDA (45%)	3.5	950	3,000 - 6,000		■ ■	■ ■	■ ■		■ ■			Low yellowing, good chemical resistance and sanding properties.
PR 9052	polyester resin	TMPTA (60%)	3.7	800	4,000 - 8,000		■ ■	■	■ ■	■ ■	■ ■			Best Taber** Abrader (S33/S42) resistance in combination with aluminum oxide.
<b>Dual cure</b>														
LR 9000	isocyanato acrylate		2 + 2 NCO		1,000 - 1,400		■ ■	■	■		■ ■			Contains NCO- and UV-reactive groups within one molecule.

\* All products registered with REACH and TSCA. All other countries, please contact your BASF representative.

superior ■■■■ excellent ■■■ very good ■■ good ■

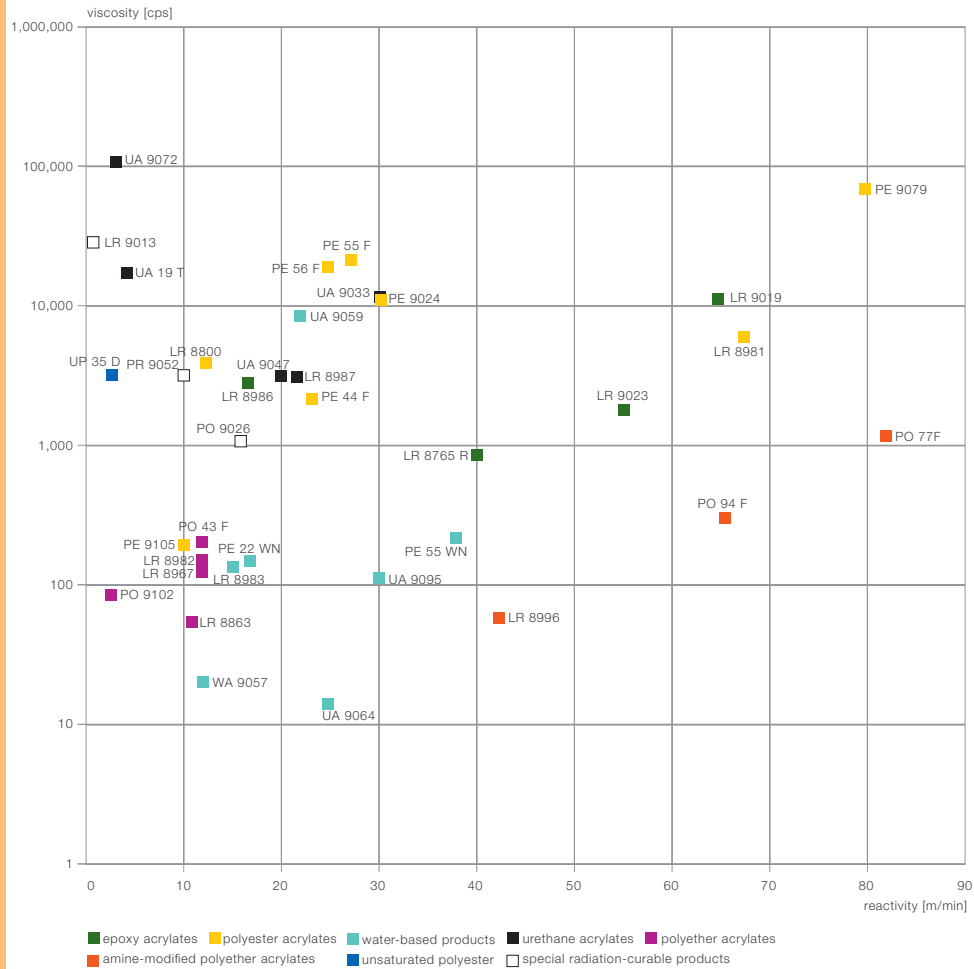
\*\*Taber is a registered trademark of Taber Industries.

# Laromer® Oligomers

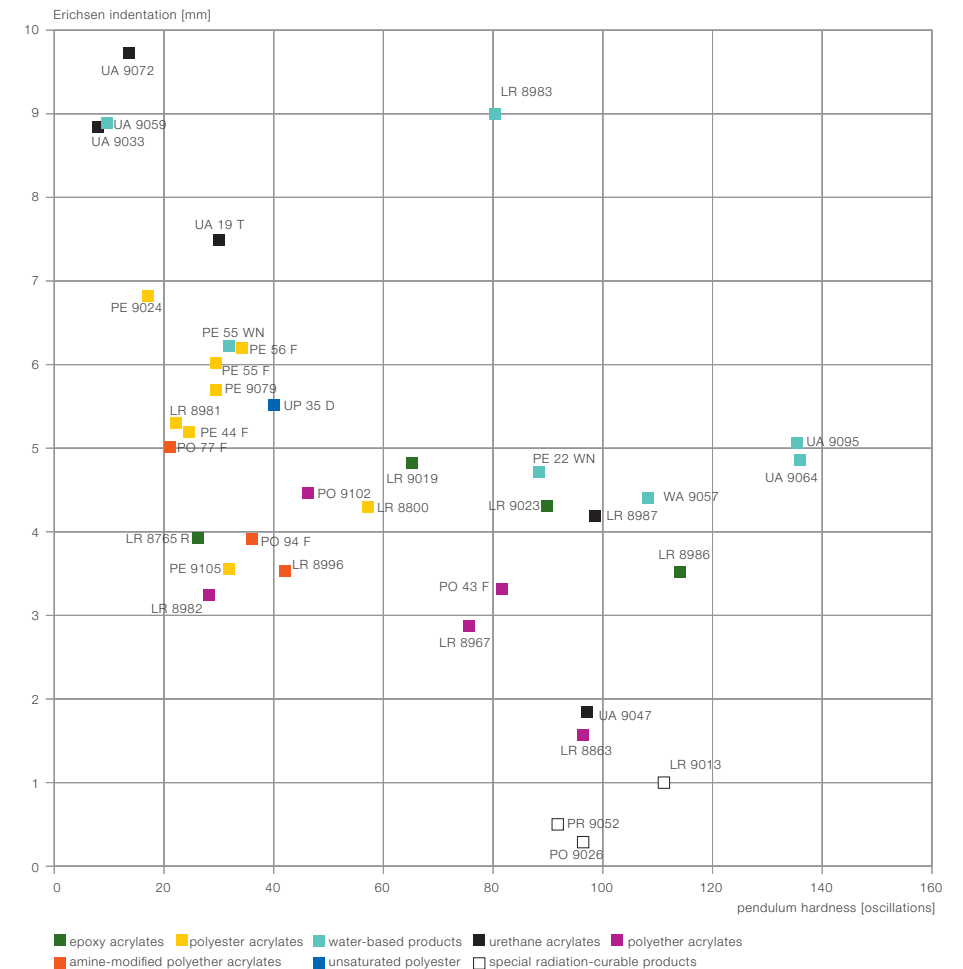
viscosity - reactivity and hardness - flexibility

These relative comparisons provide a first indication in selecting the right oligomer for your requirements. Contact your BASF representative for formulation assistance.

Viscosity – reactivity / all products were cured with 1 UV lamp 120 W/cm.  
Photoinitiator: 4% Irgacure® 500



Hardness – flexibility / all products were cured 5 x 5 m/min. with 1 UV lamp 120 W/cm.  
Photoinitiator: 4% Irgacure® 500



# Laromer<sup>®</sup> Oligomers

## product applications

Laromer	Coatings					Adhesion				Clear		Pigmented	
	Furniture	Flooring	Building Products	General Industrial	Transportation	Glass	Metal	Plastic	Wood	Primer/Sealer	Topcoat	Primer	Topcoat
<b>Epoxy acrylate</b>													
LR 8765 R	✓	✓	✓						■■■	■■■		■■■	
LR 8986	✓	✓	✓	✓			■■■		■■	■■■	■■	■■	■
LR 9019	✓	✓	✓	✓			■■■		■■	■■■	■■	■■■	■
LR 9023	✓	✓	✓	✓			■■■		■■	■■■	■■	■■■	■
<b>Polyester acrylate</b>													
LR 8800	✓	✓	✓	✓			■■■	■■	■■■	■■	■■■	■■	■■
LR 8981	✓	✓	✓					■■	■■■	■■	■■■	■■	■■
PE 44 F	✓	✓	✓						■■	■■	■■	■■	■■
PE 55 F	✓	✓	✓		✓		■■	■■	■■■	■■■	■■■	■■■	■■■
PE 56 F	✓	✓	✓		✓		■■	■■	■■■	■■■	■■■	■■■	■■■
PE 9024	✓	✓	✓						■■■	■■■	■■■	■■■	■■■
PE 9079	✓	✓	✓					■■	■■■	■■■	■■■	■■■	■■■
PE 9105				✓									
<b>Urethane acrylate (aliphatic)</b>													
LR 8987		✓	✓	✓	✓		■■	■■■	■■		■■		■■
UA 19 T	✓	✓	✓	✓	✓		■■■	■■■	■■■	■■	■■	■■	■■
UA 9033	✓	✓	✓	✓			■■	■■	■■	■■	■■	■■	■■
UA 9047				✓	✓		■■	■■■			■■■		■■■
UA 9072				✓		■■	■■	■■			■■		■■
<b>Polyether acrylate</b>													
LR 8863	✓	✓	✓	✓					■■	■■	■■	■■	■■
LR 8967	✓			✓			■■	■	■■■	■■■	■	■■■	■

applies ✓  
 superior ■■■■ excellent ■■■ very good ■■ good ■



# Laromer® Oligomers

## product applications

Laromer	Coatings					Adhesion				Clear		Pigmented	
	Furniture	Flooring	Building Products	General Industrial	Transportation	Glass	Metal	Plastic	Wood	Primer/ Sealer	Topcoat	Primer	Topcoat
LR 8982	✓	✓							■■■	■■■	■	■■■	■
PO 43 F	✓			✓			■■	■	■■■	■■■	■	■■■	■
PO 9102	✓			✓									
<b>Polyether acrylate (amine-modified, free of monomers)</b>													
LR 8996	✓		✓						■■■	■■■	■■■	■■■	■■■
PO 77 F	✓		✓				■■	■■	■■■			■■■	■■■
PO 94 F	✓		✓			■■■		■■	■■■			■■■	■■■
<b>Water based</b>													
LR 8983	✓	✓	✓	✓				■■	■■■			■■■	■■■
PE 22 WN	✓	✓	✓	✓			■■■	■■	■■■			■■■	■■■
PE 55 WN	✓	✓	✓					■■	■■■			■■■	■■■
UA 9059	✓	✓	✓						■■■	■■■		■■■	■
UA 9064	✓	✓						■	■■■		■■■		■■■
UA 9095	✓	✓		✓	✓			■■■	■■■	■■■	■■■	■■■	■■■
WA 9057	✓	✓	✓		✓			■■	■■■			■■■	■■■
<b>Special energy curable</b>													
LR 9013	✓		✓	✓			■	■	■				
PO 9026 N		✓			✓				■■■	■■■	■■■		■■■
PR 9052		✓							■■■			■■■	
UP 35 D	✓	✓	✓	✓				■	■■■			■■■	
<b>Dual cure</b>													
LR 9000			✓	✓	✓	■	■■	■■■	■■			■■■	■■

applies ✓

superior ■■■■ excellent ■■■ very good ■■ good ■

# Laromer® Reactive Diluents

product technology and applications

Product*	CAS Number	Molar Mass (approx. g/mol)	Density @ 25°C (g/cm <sup>3</sup> )	Viscosity @ 23°C (cps)	Level of Stabilizer (ppm MeHQ)	APHA Color (max)	Abrasion Resistance	Scratch Resistance	Adhesion	Corrosion Protection	Coatings			
											Furniture & Flooring	Building Products	General Industrial	Transportation
Laromer DPGDA Dipropylene glycol Diacrylate	57472-68-1	240	1.05	8	350 ± 50	150	✓				✓	✓	✓	
Laromer HDDA Hexanediol Diacrylate	13048-33-4	230	1.02	6	200 ± 50	150					✓	✓	✓	✓
Laromer LR 8887 Trimethylpropaneformal Mono-acrylate	66492-51-1	200	1.09	40	1,000 ± 100	200	✓		✓	✓	✓	✓	✓	
Laromer POEA Phenoxyethyl Acrylate	48145-04-6	190	1.10	8	200 ± 50	70			✓	✓			✓	
Laromer PPTTA Ethoxylated (5.0) Pentaerythritol Tetra-acrylate	51728-26-8	530	1.14	< 190	900 ± 100	100					✓		✓	
Laromer TBCH 4-t-Butylcyclohexyl Acrylate	84100-23-2 282-104-8	210	0.94	9	200 ± 50	100			✓	✓		✓	✓	✓
Laromer TMPTA Trimethylolpropane Triacrylate	15625-89-5	300	1.10	130	200 ± 50	70	✓	✓			✓	✓	✓	
Laromer TPGDA Tripropylene glycol Diacrylate	42978-66-5	300	1.04	11	350 ± 50	70					✓	✓	✓	

\* All products registered with REACH and TSCA. All other countries, please contact your BASF representative.

applies ✓

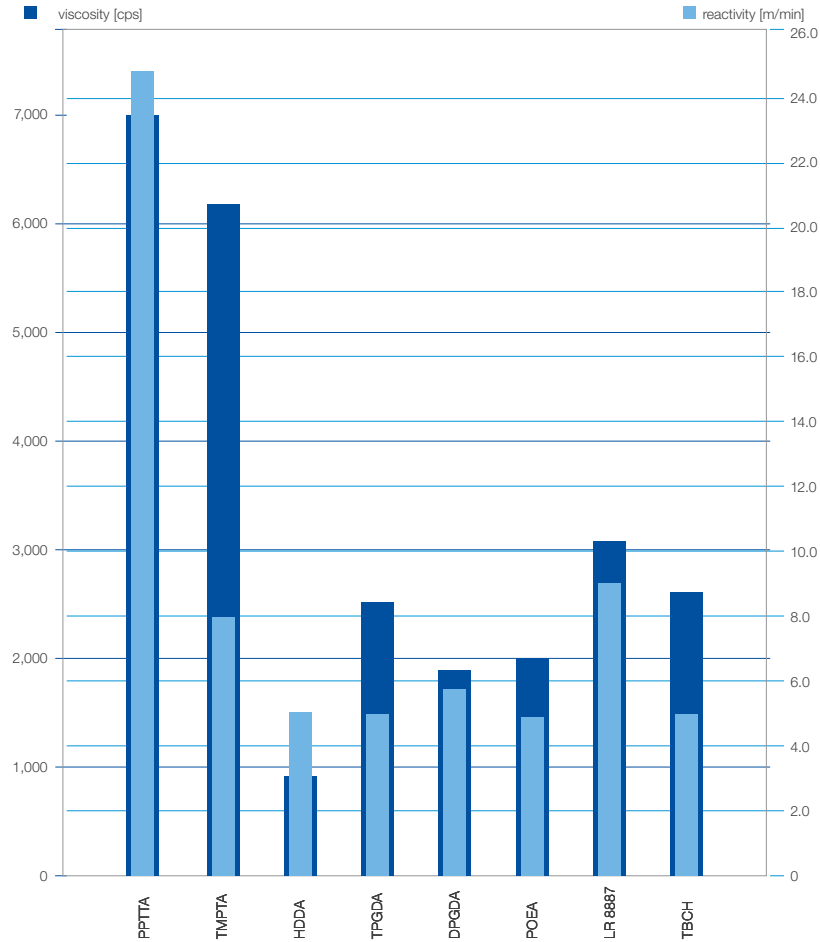
superior ■■■■ excellent ■■■ very good ■■ good ■

# Laromer® Reactive Diluents

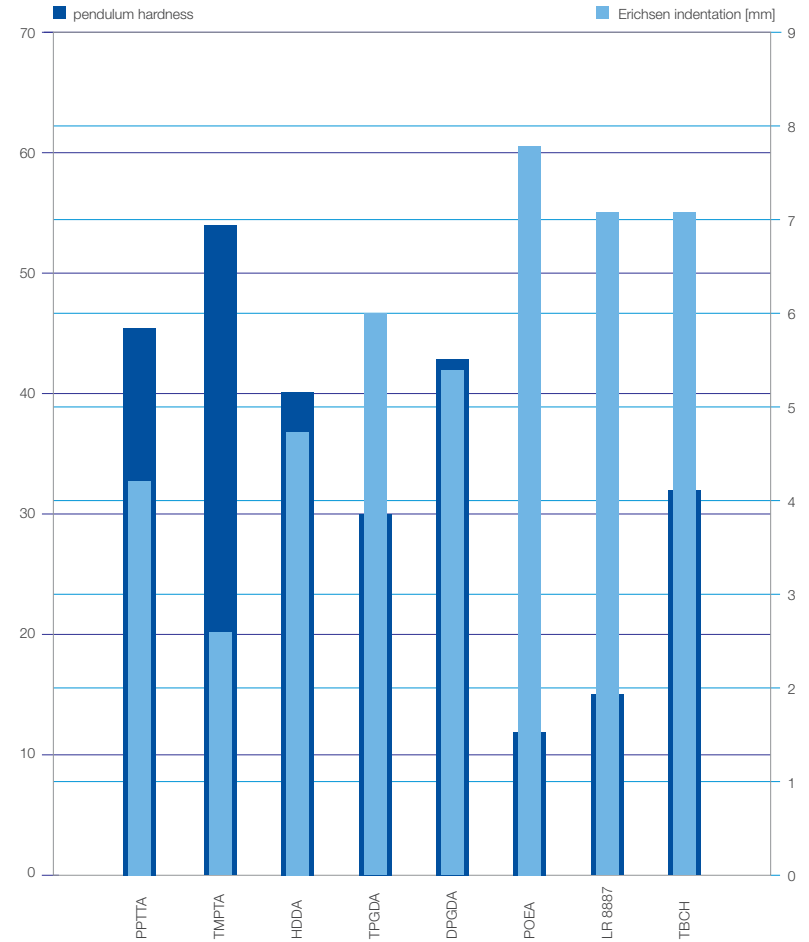
viscosity - reactivity and hardness - flexibility

These relative comparisons provide a first indication in selecting the right reactive diluent for your requirements. Contact your BASF representative for formulation assistance.

Viscosity – reactivity / formulation: 70 parts Laromer® PE 56 F, 30 parts monomer, 4 parts Irgacure® 500



Hardness – flexibility / formulation: 70 parts Laromer® PE 56 F, 30 parts monomer, 4 parts Irgacure® 500



# Additives

As world leader in the global chemicals industry, BASF offers an outstanding range of high performance additives that support a wide spectrum of applications across many different industry sectors. The key to creating high value, high performance coatings is protection against a variety of degrading influences, including light, weather, and chemicals. We understand the full technical possibilities of protecting polymers and resins against environmental and other adverse influences and can also work with you to meet the needs of any specific requirements in your industry or region.

## Products at a glance

- Chimassorb<sup>®</sup>, Irgastab<sup>®</sup>, Lignostab<sup>®</sup>, and Tinuvin<sup>®</sup>  
Light Stabilizers and UV Absorbers
- Irganox<sup>®</sup> and Irgafos<sup>®</sup> Antioxidants
- Irgaguard<sup>®</sup> and Irgarol<sup>®</sup> Biocides
- Tinopal<sup>®</sup> Optical Brighteners



# Chimassorb<sup>®</sup>, Irgastab<sup>®</sup>, Lignostab<sup>®</sup>, and Tinuvin<sup>®</sup>

stabilizers and UV absorbers

Product	Physical Form	Melting Range (°C)	Solubility/Miscibility @ 20°C (g/100g)							Water	Coatings				Specialty		Descriptions	
			Mineral Spirit / Toluene	Xylene / Methyl Isobutyl Ketone	Methyl Amyl Ketone / Methyl Ethyl Ketone	n-Butyl Acetate / Ethyl Acetate	Ethyl Cellosolve* Acetate / Butyl Cellosolve* Acetate	Butyl Carbitol* / Texanol**	Furniture and Flooring		Cementitious Substrates	General Industrial	Transportation	Adhesives	Sealants			
<b>Hindered amine light stabilizers</b>																		
Tinuvin 123	liquid	–	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	–	–	< 0.01	✓		✓	✓				Amino-ether HALS that minimizes defects such as cracking and gloss reduction in clear coats and chalking in pigmented paints. Especially useful for acid catalyzed coatings.	
Tinuvin 144	solid	146 - 150	–	10 na	na 9	10 na	–	1.5 na	< 0.01			✓	✓				A multifunctional additive that provides protection against thermal and light induced degradation.	
Tinuvin 152	solid	83 - 90	–	> 70 na	> 75 na	> 70 na	–	–	< 0.01			✓	✓				A high performance HALS that significantly improves coating durability.	
Tinuvin 249	liquid	–	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	–	–	< 0.01	✓		✓	✓	✓			A liquid non-basic HALS designed to meet the high performance and durability requirements of all solvent-based automotive, industrial and decorative coatings where other HALS fail either related to their basicity or for compatibility reasons	
Tinuvin 292	liquid	–	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	–	> 50 > 50	< 0.01	✓	✓	✓	✓			✓	HALS that provides significantly extended lifetime to systems by minimizing defects such as cracking and gloss reduction.	
Tinuvin 292 HP	liquid	–	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	–	> 50 > 50	< 0.01	✓	✓	✓	✓			✓	A liquid hindered amine light stabilizer especially developed for color sensitive coating applications	
Tinuvin 622 SF	solid	50 - 70	na 15	–	–	na 3.0	–	–	1.6 mg/l							✓	✓	HALS that is an effective antioxidant that contributes to the long term heat stability of polyolefins and tackifier resins.
Tinuvin 770 DF	Solid	81 - 85	–	–	–	20	–	–	< 0.01			✓				✓	✓	A low molecular weight hindered amine light stabilizer (HALS) for applications demanding particularly high light stability
Tinuvin 5100	liquid	–	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	–	–	< 0.01			✓						HALS developed to provide durability to exterior industrial coating applications.
Chimassorb 944 FDL	solid	100 - 135	na > 50	–	–	na > 50	–	–	< 0.01							✓	✓	High molecular weight HALS with excellent compatibility, good resistance to extraction, and low volatility.

applies ✓

Note: For EB cure applications, use light stabilizer packages as needed.

For UV cure applications, please contact your BASF representative to assist with photoinitiator and light stabilizer package optimization.

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\*\*Texanol is a trademark of the Eastman Chemical Company.

# Chimassorb<sup>®</sup>, Irgastab<sup>®</sup>, Lignostab<sup>®</sup>, and Tinuvin<sup>®</sup>

stabilizers and UV absorbers

Product	Physical Form	Melting Range (°C)	Solubility/Miscibility @ 20°C (g/100g)							Water	Coatings				Specialty		Descriptions
			Mineral Spirit / Toluene	Xylene / Methyl Isobutyl Ketone	Methyl Amyl Ketone / Methyl Ethyl Ketone	n-Butyl Acetate / Ethyl Acetate	Ethyl Cellosolve* Acetate / Butyl Cellosolve* Acetate	Butyl Carbitol* / Texanol**	Furniture and Flooring		Cementitious Substrates	General Industrial	Transportation	Adhesives	Sealants		
<b>(2-hydroxyphenyl)-Benzotriazole</b>																	
Tinuvin 99	liquid	–	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	< 0.01	✓		✓					A UV absorber that provides excellent spectral coverage and good photopermanence.
Tinuvin 99-2	liquid	–	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	< 0.01	✓	✓	✓			✓		UV absorber that allows efficient protection of light sensitive substrates.
Tinuvin 328	solid	80 - 88	14 33	34 27	25 14	13 16	14 25	3.5 10	< 0.01	✓		✓	✓				UV absorber that improves exterior durability of ambient and low temperature cured coatings.
Tinuvin 384-2	liquid	–	> 50 > 50	> 50 > 50	> 50 > 50	> 30 > 50	na > 50	> 50 > 30	< 0.01	✓		✓	✓		✓		UV absorber with a very high thermal stability and environmental permanence for coatings exposed to high bake cycles or extreme environmental conditions.
Tinuvin 900	solid	137 - 141	< 0.1 24	10 3	4 5.5	4.5 4	< 0.1 2	na < 0.1	< 0.01			✓	✓				A UV absorber for coatings exposed to high temperatures or extreme environmental stresses.
Tinuvin 928	solid	109 - 113	–	> 50 na	30 na	> 30 30	10 9.5	–	< 0.01			✓	✓				UV absorber that provides efficient protection to high performance coating applications and light sensitive substrates.
Tinuvin 1130	liquid	–	na > 50	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	< 0.01	✓	✓	✓	✓		✓		A versatile UV absorber with excellent spectral coverage in the UVB and UVA range.
Tinuvin CarboProtect <sup>®</sup>	solid	132 - 136	na > 50	–	na 30	28 na	–	–	< 0.01				✓				UV absorber specifically designed for long term performance of carbon fiber coatings.

applies ✓

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stabilizers and UV absorbers

Product	Physical Form	Melting Range (°C)	Solubility/Miscibility @ 20°C (g/100g)							Coatings				Specialty		Descriptions
			Mineral Spirit / Toluene	Xylene / Methyl Isobutyl Ketone	Methyl Amyl Ketone / Methyl Ethyl Ketone	n-Butyl Acetate / Ethyl Acetate	Ethyl Cellosolve* Acetate / Butyl Cellosolve* Acetate	Butyl Carbitol* / Texanol**	Water	Furniture and Flooring	Cementitious Substrates	General Industrial	Transportation	Adhesives	Sealants	
<b>2-Hydroxyphenyl-s-triazine</b>																
Tinuvin 171	Liquid	–	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	–	< 0.01	✓		✓	✓			Liquid UV light absorber of the hydroxyphenyl-benzotriazole class that is ideal for those systems where initial yellowing must be kept to a minimum.
Tinuvin 326	Solid	138 - 141	5 9	9 2	2 2	2 2	–	–	< 0.01					✓	✓	A red-shifted ultraviolet light absorber of the hydroxyphenyl benzotriazole class, which imparts outstanding light stability to adhesives and other organic substrates.
Tinuvin 329	Solid	103 - 105	– 30	30 15	15 15	15 15	–	–	< 0.01	✓				✓	✓	An ultraviolet light absorber of the hydroxyphenyl benzotriazole class, which is used as a light stabilizer for adhesives and other organic substrates.
Tinuvin 400	liquid	–	na > 50	> 50 > 50	> 50 > 50	–	> 50 > 50	> 50 > 50	< 0.01			✓	✓			UV absorber for high performance and durability needs of solventborne and 100% solids applications.
Tinuvin 405	solid	74 - 77	–	20 na	–	25 na	–	–	< 0.01			✓	✓			UV absorber that provides superior protection to coatings and light sensitive substrates that are subject to extreme processing conditions and light exposure.
Tinuvin 460	solid	93 - 102	–	–	na 5.7	4.3 3.2	–	–	< 0.01	✓		✓		✓		UV absorber that provides outstanding protection to systems and light sensitive substrates and materials in ultra thin coating applications.
Tinuvin 477	liquid	–	na > 50	> 50 > 50	> 50 > 50	–	> 50 > 50	> 50 > 50	< 0.01	✓		✓				UV absorber for solventborne and liquid UV curable coatings.
Tinuvin 479	solid	60 - 70	–	–	–	17 na	–	–	< 0.01			✓	✓			UV absorber that provides excellent performance in thin film applications and very high photostability.
Tinuvin P	solid	128 - 132	– 4	4 3	3 3	3 3.5	3 3	–	< 0.01					✓	✓	An ultraviolet light absorber (UVA) of the hydroxyphenyl benzotriazole class, imparting good light stability to a wide variety of adhesive resins.

applies ✓

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# Chimassorb<sup>®</sup>, Irgastab<sup>®</sup>, Lignostab<sup>®</sup>, and Tinuvin<sup>®</sup>

stabilizers and UV absorbers

Product	Physical Form	Melting Range (°C)	Solubility/Miscibility @ 20°C (g/100g)							Coatings				Specialty		Descriptions
			Mineral Spirit / Toluene	Xylene / Methyl Isobutyl Ketone	Methyl Amyl Ketone / Methyl Ethyl Ketone	n-Butyl Acetate / Ethyl Acetate	Ethyl Cellosolve* Acetate / Butyl Cellosolve* Acetate	Butyl Carbitol* / Texanol**	Water	Furniture and Flooring	Cementitious Substrates	General Industrial	Transportation	Adhesives	Sealants	
<b>2-Hydroxy-benzophenone</b>																
Chimassorb 81	solid	48 - 49	na > 50	-	-	na 44	-	-	< 0.01	✓		✓		✓		UV absorber with good absorption in the UVB regions.
<b>NEAT (Novel Encapsulated Additive Technology)</b>																
Tinuvin 99-DW	liquid	-	-	-	-	-	-	-	Miscible	✓		✓	✓			Solvent-free, UV absorber that permits formulation of low/zero VOC coatings.
Tinuvin 123-DW (N)	liquid	-	-	-	-	-	-	-	Miscible	✓		✓	✓			Solvent-free, non-basic amino-ether HALS that permits formulation of low/zero VOC coatings.
Tinuvin 400-DW (N)	liquid	-	-	-	-	-	-	-	Miscible	✓		✓	✓			Encapsulated UV absorber with high extinction in the UVB range for high performance applications and/or low/zero VOC water-based formulations.
Tinuvin 477-DW (N)	liquid	-	-	-	-	-	-	-	Miscible	✓		✓				UV absorber that permits formulating low/zero VOC coatings with excellent photopermanence.
Tinuvin 479-DW	liquid	-	-	-	-	-	-	-	Miscible			✓	✓	✓	✓	UV absorber that provides excellent photopermanence in thin film applications and very high thermal stability.
Tinuvin 5333-DW (N)	liquid	-	-	-	-	-	-	-	Miscible	✓	✓	✓				Aqueous UVA/HALS blend with high active content for waterborne and waterborne UV coatings.

applies ✓

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stabilizers and UV absorbers

Product	Physical Form	Melting Range (°C)	Solubility/Miscibility @ 20°C (g/100g)							Water	Coatings				Specialty		Descriptions
			Mineral Spirit / Toluene	Xylene / Methyl Isobutyl Ketone	Methyl Amyl Ketone / Methyl Ethyl Ketone	n-Butyl Acetate / Ethyl Acetate	Ethyl Cellosolve* Acetate / Butyl Cellosolve* Acetate	Butyl Carbitol* / Texanol**	Furniture and Flooring		Cementitious Substrates	General Industrial	Transportation	Adhesives	Sealants		
<b>Blends</b>																	
Tinuvin 5050	liquid	–	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	< 0.01	✓		✓					A versatile liquid UVA/HALS blend with high thermal stability suitable for water-based or solvent-based coatings exposed to high bake temperatures or extreme environmental temperatures.
Tinuvin 5060	liquid	–	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	< 0.01	✓		✓		✓			UVA/HALS blend that provides excellent photoprotection and enables formulating with acidic materials.
Tinuvin 5151	liquid	–	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	< 0.01			✓	✓				A liquid blend of a hydrophilic 2-(2-hydroxyphenyl)-benzotriazole UV absorber (UVA) and a basic hindered amine light stabilizer (HALS) designed to fulfill performance and durability requirements of exterior waterborne and solventborne industrial and decorative coatings
Tinuvin 5248	liquid	–	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	< 0.01	✓	✓	✓	✓				A high performance UVA/HALS blend.
Tinuvin 5350	liquid	–	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	> 50 > 50	< 0.01	✓		✓	✓				Solvent-free UVA/HALS blend for high performance, non-acid catalyzed systems.
<b>Wood photostabilizer</b>																	
Lignostab 1198	solid	69 - 71	–	–	> 20 na	> 20 na	> 20 na	> 20 na	22	✓		✓					Wood photostabilizing additive for natural and tinted or stained wood.
<b>In-can stabilizers</b>																	
Irgastab UV 22	liquid	–	–	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓		An in-can stabilizer that inhibits early polymerization in UV curable ink and coating formulations.
Lignostab 1198	solid	69 - 71	–	–	> 20 na	> 20 na	> 20 na	> 20 na	22	✓		✓					Used as an in-can stabilizer that inhibits early polymerization in UV curable ink and coating formulations.

applies ✓

Note: For EB cure applications, use light stabilizer packages as needed.

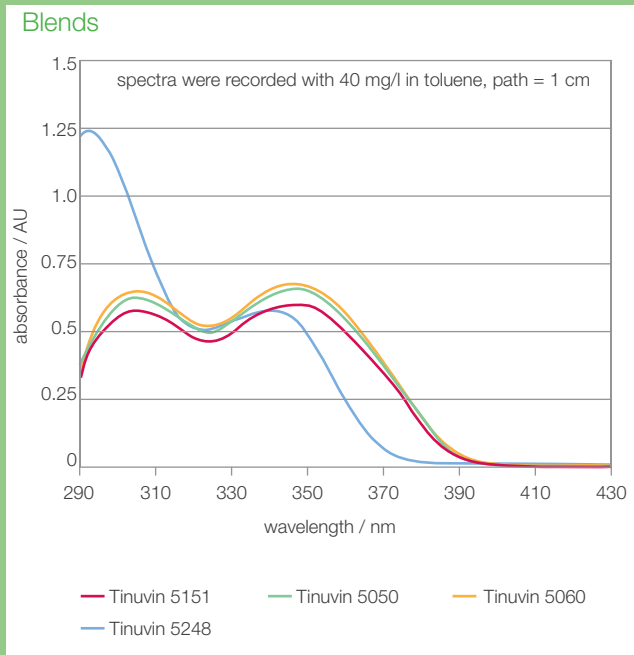
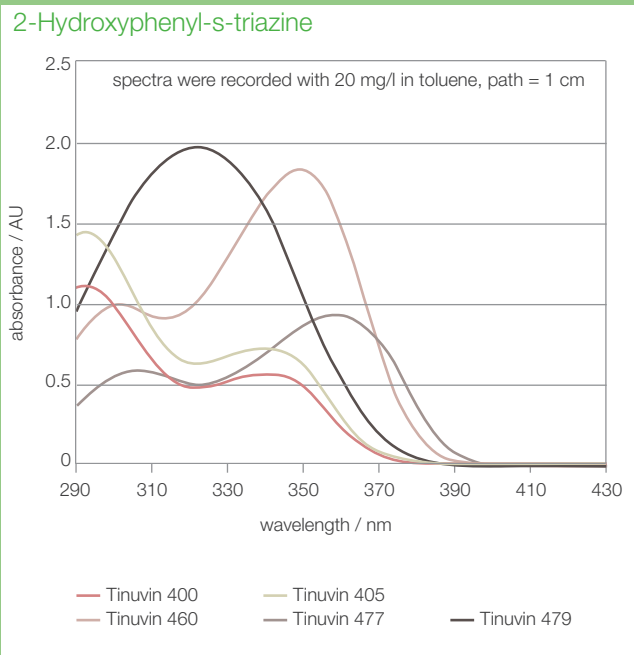
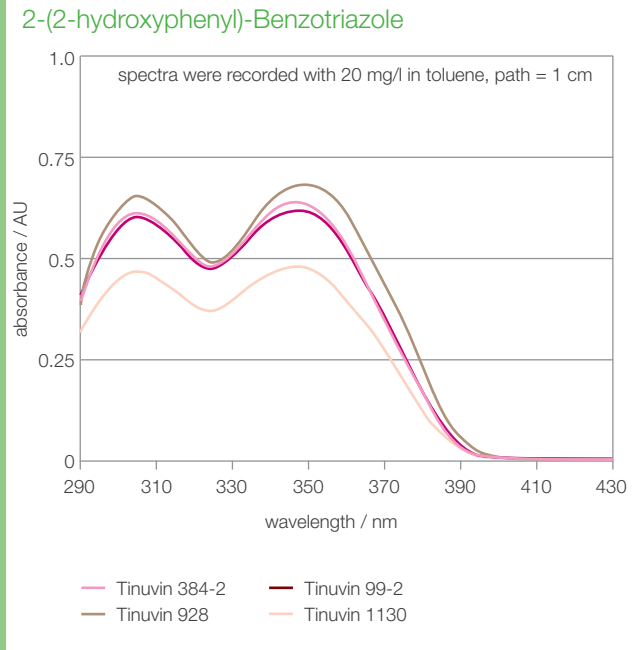
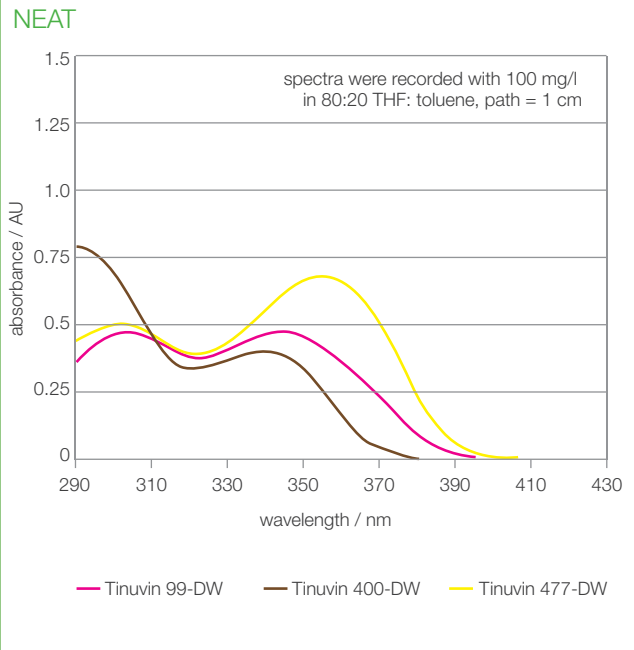
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# Tinuvin® Stabilizers and UV Absorbers

## UV-VIS absorbance spectra



# Irganox<sup>®</sup> and Irgafos<sup>®</sup>

## antioxidants

Product	CAS Number	Chemistry	Physical Form	Molecular Weight (g/mol)	Melting Range (°C)	General Industrial	Transportation	Adhesives	Sealants	Descriptions
<b>Hindered phenol</b>										
Irganox 245	36443-68-2	phenol	solid	586.8	76 - 79	✓	✓	✓	✓	Primary antioxidants for hot-melt, sealants, solvent-based coating applications.
Irganox 1010	6683-19-8	phenol	solid	1,178	110 - 125	✓	✓	✓	✓	Primary antioxidants for hot-melt, tackifiers and solvent-based coating applications.
Irganox 1035	41484-35-9	phenol	solid	643	63 - 78	✓		✓	✓	Primary antioxidants for hot-melt and solvent-based coating applications.
Irganox 1035 FF (W&C)	41484-35-9	phenol	solid	643	63 - 78	✓		✓	✓	Primary antioxidants for hot-melt and solvent-based coating applications.
Irganox 1076	2082-79-3	phenol	solid	531	50 - 55	✓	✓	✓	✓	Primary antioxidants for hot-melt, tackifiers and solvent-based coating applications.
Irganox 1076 FD	2082-79-3	phenol	solid	531	50 - 55	✓	✓	✓	✓	Primary antioxidants for hot-melt, tackifiers and solvent-based coating applications.
Irganox 1726	110675-26-8	phenol	solid	536.96	~ 28			✓	✓	A multifunctional phenolic antioxidant that effectively protects the substrate against thermo-oxidative degradation; non-staining, non-discoloring, low volatility, and stable to light and heat.
Irganox MD 1024	32687-78-8	metal deactivator	solid	553	221 - 232	✓		✓	✓	Primary antioxidants with metal deactivating properties.
<b>Phosphite</b>										
Irgafos 126	26741-53-7	phosphite	solid	604	160 - 175	✓	✓	✓	✓	Secondary antioxidants for hot-melts, solvent-based and powder coatings.
Irgafos 168	31570-04-4	phosphite	solid	646.9	183 - 186	✓	✓	✓	✓	Secondary antioxidants for hot-melts, solvent-based and powder coatings.
<b>Blends</b>										
Irganox B 225	preparation	phenol/ phosphite	solid	mixture	> 100	✓		✓	✓	Antioxidants blend for adhesives and sealants applications.

# Irgaguard<sup>®</sup> and Irgarol<sup>®</sup>

## biocides

Product	CAS Number	Chemistry	Physical Form	Molecular Weight (g/mol)	Melting Point (°C)	Furniture and Flooring	General Industrial	Adhesives	Sealants	Descriptions
Irgaguard D 1071	28159-98-0	organic algicide	solid	253.4	133	✓				Triazine-based algicide for architectural and construction coatings.
Irgarol 1051	28159-98-0	organic algicide	solid	253.4	133		✓			Triazine-based algicide for antifouling in marine and protective coatings.

applies ✓

# Tinopal<sup>®</sup>

## optical brighteners

Product	CAS Number	Chemistry	Physical Form	Molecular Weight (g/mol)	Melting Range (°C)	General Industrial	Adhesives	Sealants	Descriptions
Tinopal NFW LIQ	27344-41-8	biphenyl-stilbene	liquid	562.5	–	✓	✓	✓	Liquid optical brightener for water-based white and pastel-tone paints, clear coats, overprint varnishes and adhesives and sealants.
Tinopal OB CO	7128-64-5	benzoxazole	solid	430.6	196 - 203	✓	✓	✓	Solid optical brightener for solvent based white and pastel-tone paints, clear coats, overprint varnishes and adhesives and sealants.
Tinopal SFP	41098-56-0	triazine-stilbene	solid	1,305	–	✓	✓	✓	Water-soluble optical brightener for photographic color developer baths or as fluorescent tracers.

applies ✓







## About BASF

BASF Corporation, headquartered in Florham Park, New Jersey, is the North American affiliate of BASF SE, Ludwigshafen, Germany. BASF has nearly 17,500 employees in North America, and had sales of \$17.4 billion in 2015. For more information about BASF's North American operations, visit [www.basf.us](http://www.basf.us).

At BASF, we create chemistry for a sustainable future. We combine economic success with environmental protection and social responsibility. The approximately 112,000 employees in the BASF Group work on contributing to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio is organized into five segments: Chemicals, Performance Products, Functional Materials & Solutions, Agricultural Solutions and Oil & Gas. BASF generated sales of more than €70 billion in 2015. BASF shares are traded on the stock exchanges in Frankfurt (BAS), London (BFA) and Zurich (AN). Further information at [www.basf.com](http://www.basf.com).

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BF-9683 rev 09/16

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