



Thermosets

Our range of materials and technologies cover a wide variety of industrial applications, such as flooring, coatings, adhesives, grouts, sealants, civil engineering, construction and many others. With a long history of problem solving, we have created more than just innovative products: we have created winning results for our customers.

Cost-effective solutions

- Through the combination of agricultural-based chemical knowledge, technical expertise and global coverage, Cargill creates specific, innovative and cost-effective solutions for our customers.
- Our global supply chain and logistics expertise provides consistent, reliable and long-term solutions.

Commitment to sustainability

- Cargill collaborates to protect natural resources and address environmental challenges.
- We drive impact across our shared focus areas in climate change, land use and water resources.

Delivering performance

- With our comprehensive and reliable portfolio of solutions, we can deliver innovative solutions for challenging applications:
 - Polyaspartics for fast return to service
 - Mannich Bases for low temperature curing applications
 - Reactive Diluents - complete and reliable portfolio
 - Polyamides / Amidoamines / Aliphatic and Cycloaliphatic Amines / Epoxy resin blends

Customer driven approach

- Our fundamental belief is that mutual bottom-line business success is made possible by strong customer collaboration and partnership.
- We create solutions by involving our customers in the development process and embracing entrepreneurial thinking.

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POLYAMIDES

Polyamide curing agents are synthesized from vegetable dimer acid and ethyleneamines. When mixed with epoxy resin, results in coatings with excellent adhesion properties, flexibility, impact resistance, insulation properties, and good curing at room temperature. Enhanced corrosion and water resistance resulting from surface wetting and adhesion properties. The structural nature of polyamides results in coatings with low resistance to chemicals, solvents and acids.

Product Name	Description	Viscosity cP @ 25°C	Amine H ⁺ Eq. Weight	PHR	Typical Gel Time (minutes)	Density	Color Typical Gardner
ChemCure® 115	Semi-solid, slow reacting polyamide	50,000 - 75,000 (40°C)	200	108	>240	8.1	6
ChemCure® 125	Mid-range polyamide for speed and viscosity	8,000 - 12,000 (40°C)	108	54	130	8.1	7
ChemCure® 140	2:1 polyamide when used with ChemRes™ 628	8,000 - 16,000	95	50	120	8.1	5

MANNICH BASES

Mannich bases are highly reactive curing agents as a result of the built-in accelerator. Suitable for low temperature, challenging environments, and chemical resistance. This chemistry is broadly used in highly demanding civil engineering applications.

Product Name	Description	Viscosity cP @ 25°C	Amine H ⁺ Eq. Weight	PHR	Typical Gel Time (minutes)	Density	Color Typical Gardner
ChemCure® 254	Flexible, high performance for harsh and acidic environments, such as sewers	700 - 1,200	152	80	50	7.8	3
ChemCure® 265	Economical, fast curing, all-purpose Mannich Base	400 - 700	48	25	15	8.8	4
ChemCure® 350	Direct to wet / damp, poorly prepared metal	2,000 - 3,500	73	40	12	9.4	2
ChemCure® 352	Low viscosity, light color, fast curing, low sensitivity to water, excellent blush resistance	125 - 500	76	40	16	8.6	2

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AMIDOAMINES

Amidoamines are formed when an aliphatic polyamine is reacted with a fatty acid. Good for ambient temperature applications. Exhibit low viscosity and very good adhesion – especially to concrete. Able to cure under humid conditions, and good chemical resistance.

Product Name	Description	Viscosity cP @ 25°C	Amine H ⁺ Eq. Weight	PHR	Typical Gel Time (minutes)	Density	Color Typical Gardner
ChemCure® 100	Rapid cure rate and good water resistance	1,000 - 2,500	82	43	37	8.2	5
ChemCure® 147	Low viscosity polyamidoamine with superior chemical resistance. Concrete primer, grouts and adhesives	400 - 700	89	48	90	7.9	5
ChemCure® 149	Modified amidoamine for grouts and adhesives. Can produce coatings with higher compressive strength	200 - 300	65	35	52	8.2	6
ChemCure® 151	Use for general purpose adhesives	300 - 600	93	50	120	8.0	4
ChemCure® 152	Longer pot life version of ChemCure® 151	250 - 500	93	50	165	7.9	5
ChemCure® 153LVZ	Low viscosity direct to metal (DTM). Can be applied over poorly prepared surfaces	300 - 500	115	62	50	8.5	4
ChemCure® 183	Good flexibility and high gloss, no induction	2,500 - 5,000	178	95	70	8.4	4
ChemCure® 184	Good adhesion and flexibility	500 - 2,000	160	80	95	8.3	3
ChemCure® 190	Very high imidazoline content amidoamine. Very long pot life	100 - 500	93	50	450	7.8	4
ChemCure® 191	Adhesion to concrete and chemical resistance. Cures under humid conditions	500 - 900	65	35	45	8.1	4
ChemCure® 192	Use for primers and under layments	250 - 400	90	50	125	7.9	6
ChemCure® 193	Shorter pot life version of ChemCure® 151 and ChemCure® 152	200 - 700	93	50	85	8.0	5
ChemCure® 243	Low viscosity amidoamine	20 - 80	86	46	185	8.1	5
ChemCure® 396	Chemical resistance and improved film appearance	500 - 1,100	96	52	65	8.2	5

Note: Due to the nature of the chemistry, amidoamines do not yield discrete Amine Hydrogen Equivalent Weights. In all cases this number would be represented as a range. The values provided in the table above represent a theoretical calculation from the PHR provided. The PHR would also be best represented by a range and should be determined by the customer based on their formulation and desired properties. The PHR values above are utilized by Cargill for the determination of the gel times reported in the table and on actual product specifications.

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CYCLOALIPHATIC AMINES

Modified cycloaliphatic amines are commonly used curing agents due to their low viscosity and fast cure rate. Industry standard curing agents for high gloss flooring, also delivering chemical, amine blush, and water spot resistance.

Product Name	Description	Viscosity cP @ 25°C	Amine H ⁺ Eq. Weight	PHR	Typical Gel Time (minutes)	Density	Color Typical Gardner
ChemCure® 286	Low viscosity. Good for self-leveling floors, decoupage, and primer coats	35 - 60	90	48	30	8.4	<1
ChemCure® 310	High gloss and blush resistance flooring. Fast curing and low yellowing	300 - 600	111	60	30	8.6	1
ChemCure® 310M	Industry standard for high gloss and blush resistance flooring. Low yellowing	400 - 600	111	60	50	8.6	1
ChemCure® 319	Very good aesthetics, fast curing and superior yellowing resistance	250 - 350	100	56	20	8.5	1
ChemCure® 337	Low color curative for chemical resistant floors	90 - 150	71	38	25	8.7	1
ChemCure® 365	Fast curing, good aesthetics	100 - 300	94	51	20	8.7	1
ChemCure® 390	Fast cure 3:1 with ChemRes™ 618	250 - 550	74	37	30	8.4	2

MODIFIED ALIPHATIC AMINES

Modified aliphatic amines are typically higher molecular weight polyamines specifically engineered for applications requiring a combination of chemical / blush / water spot resistance, adhesion, high gloss and low color.

Product Name	Description	Viscosity cP @ 25°C	Amine H ⁺ Eq. Weight	PHR	Typical Gel Time (minutes)	Density	Color Typical Gardner
ChemCure® 206	All-purpose curing agent	290 - 500	47	25	27	8.3	1
ChemCure® 211	Rapid cure amine	5,500 - 8,000	180	97	8	8.1	<1
ChemCure® 230	Extended pot life aliphatic	200 - 460	86	46	40	8.2	1
ChemCure® 239	Good adhesion and high flexibility	1,000 - 2,000	204	110	25	8.5	1
ChemCure® 250F	Chemical resistance, low temperature curing. Can be used as accelerator	80 - 150	72	39	15	8.3	1
ChemCure® 258	Fast curing amine. Can be used as accelerator	80 - 120	34	18	13	8.6	2
ChemCure® 272	Low viscosity, long pot life, blush resistance for high gloss coatings	40 - 100	86	40	103	7.9	1
ChemCure® 280	Excellent chemical and water spot resistance. Ambient cure with good amine blushing resistance	200 - 500	112	60	30 - 60	8.5 - 9.0	10 Max



PRODUCT DETAILS

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REACTIVE DILUENTS

Comprehensive portfolio of mono- and multi-functional reactive diluents, used for viscosity reduction and performance enhancement of epoxy resin systems.

Product Name	Description	Functionality	Viscosity cP @ 25°C	Epoxide Equivalent Weight	Color Typical Gardner	Density
ChemMod® 8	C ₁₂ -C ₁₄ aliphatic glycidyl ether	Mono	7 - 12	285 - 310	1 Max.	7.7
ChemMod® 32	Polypropylene glycol diglycidyl ether	Di	55 - 75	310 - 330	2 Max.	8.9
ChemMod® 36	Dipropylene glycol diglycidyl ether	Di	30 - 60	175 - 205	1 Max.	9.4
ChemMod® 48	Trimethylol propane triglycidyl ether	Tri	100 - 250	125 - 150	3 Max.	9.6
ChemMod® 61	Butyl glycidyl ether	Mono	1 - 2	140 - 155	1 Max.	7.7
ChemMod® 67	1,4-Butanediol diglycidyl ether	Di	25 Max.	125 - 145	75 Max. (APHA)	9.3
ChemMod® 68	Neopentylglycol diglycidyl ether	Di	10 - 25	130 - 149	1 Max.	8.9
ChemMod® 107	Cyclohexanedimethanol diglycidyl ether	Di	45 - 75	145 - 165	2 Max.	9.2
ChemMod® 116	2-Ethylhexanol glycidyl ether	Mono	1 - 4	202 - 235	100 Max. (APHA)	7.6

TERTIARY AMINES

Tertiary amines can be used to accelerate cure times in epoxy systems through catalytically induced anionic polymerization.

Product Name	Description	Viscosity cP @ 25°C	Density	Color Typical Gardner
ChemCure® A-39	Provides good acceleration at low use levels	900 - 1,100	11.0	2
ChemCure® 240	Tertiary amine accelerator	120 - 250	8.2	2

EPOXY RESINS

Focus on modifications of various types of resins to improve handling and performance, delivering custom-made solutions.

Product Name	Description	Viscosity cP @ 25°C	WPE	Color Typical Gardner	Density
ChemRes™ 612	Acrylate modified resin	80 - 120	140 -160*	2 Max.	9.3
ChemRes™ 618	ChemRes™ 628 modified with ChemMod® 8	500 - 700	195 - 215	1 Max.	9.3
ChemRes™ 619	ChemRes™ 628 modified with ChemMod® 8	1,600 - 2,500	190 - 205	3 Max.	9.5
ChemRes™ 628	Bisphenol-A epoxy resin (standard grade)	11,000 - 15,000	180 - 192	1 Max.	9.7
ChemRes™ 635	High chemical resistance. Very good flowability and leveling properties. Excellent system when combined with ChemCure® 319	450 - 650	200 - 300	Hazy	9.4
ChemRes™ 640	Bisphenol-F epoxy resin (standard grade)	3,000 - 7,000	160 - 175	1 Max.	9.8
ChemRes™ 664	Designed to deliver superior flexibility on epoxy systems	1,500 - 2,500	180 - 200*	2 Max.	9.3

*Note: Due to the nature of the chemistry, WPE is calculated based on additional acrylate reactivity.



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POLYASPARTIC ESTER RESINS

Polyaspartic ester resin products are amine-functional reactive materials for polyisocyanates, delivering outstanding abrasion resistance, UV stability and fast return to service. High gloss and great aesthetic coatings. Materials can be combined to achieve desired working and curing times.

Product Name	Description	Viscosity cP @ 25°C	APHA Color	Moisture %	Typical Gel Time (minutes)	Density
Altor® 200	Extremely fast polyaspartic, with short gel time	50 - 200	250 Max.	0.05 Max.	<2	8.8
Altor® 201	Medium speed polyaspartic	800 - 2,000	100 Max.	0.10 Max.	25	9.0
Altor® 202	Slow speed polyaspartic	700 - 2,000	250 Max.	0.05 Max.	>240	8.8
Altor® 205LV	Low viscosity, medium speed with extended working time polyaspartic	200 - 500	100 Max.	0.10 Max.	55	8.8



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