

RESINS

VERSACURE™ EPOXY CURING AGENTS



GABRIEL

PRODUCT REFERENCE GUIDE

Gabriel Versacure™ : ALIPHATIC AMINE CURING AGENT

Product	Amine Hydrogen Equivalent Weight (AHEW)	Amine Value (mg KOH/g)	Viscosity @ 25C (cps)	Key Attribute
VERSACURE RAC 9089	75	380 - 410	80 - 150	Faster curing amine hardner, also available as nonyl phenol free version
VERSACURE RAC 9092	92	325 - 355	80 - 150	Lower viscosity, fast curing agent
VERSACURE RAC 9093	84	345 - 375	550 - 700	
VERSACURE RAC 9836	66	465 - 490	1700 - 2200	Nonyl Phenol and Benzyl Alcohol free curing agent
VERSACURE RAC 9837	68	395 - 415	2900 - 3600	Excellent chemical resistance curing agent
VERSACURE RAC 9930	50	570 - 620	5 - 50	
VERSACURE RAC 9935	50	570 - 620	5 - 50	
VERSACURE RAC 9938	90	310 - 320	30 - 80	
VERSACURE RAC 9939 WA	80	360 - 390	20 - 120	Curing agent for NSF applications
VERSACURE RAC 9940	43	670 - 720	10 - 50	
VERSACURE RAC 9946	76	340 - 380	400 - 700	Phenol free curing agent
VERSACURE RAC 9947	90	420 - 480	1200 - 3500	Lower temperature, faster curing curing agent
VERSACURE RAC 9948	34	950 - 1050	120 - 200	
VERSACURE RAC 9949	76	350 - 390	400 - 700	
VERSACURE RAC 9953	160	300 - 320	8000 - 10500	Faster curing amine hardner, also available as nonyl phenol free version
VERSACURE RAC 9954 FC	72	305 - 325	40 - 100	Faster curing amine hardner
VERSACURE RAC 9955	30	1,000 - 1,100	85 - 130	Excellent chemical resistance curing agent
VERSACURE RAC 9957	38	763 - 797	3400 - 5000	Faster curing amine hardner
VERSACURE RAC 9959	36	825 - 925	1100 - 2000	
VERSACURE RAC 9963	85	325 - 350	30 - 80	
VERSACURE RAC 9966	50	681 - 882	1000 - 2000	Lower viscosity curing agent
VERSACURE RAC 9969	95	570 - 620	2000 - 4000	Faster curing amine hardner, also available as nonyl phenol free version

Gabriel Versacure™ : PHENALKAMINE CURING AGENT

Product	Amine Hydrogen Equivalent Weight (AHEW)	Amine Value (mg KOH/g)	Viscosity @ 25C (cps)	Key Attribute
VERSACURE RAC 946	120	305 - 335	2000 - 5000	Higher chemical resistance
VERSACURE RAC 950	81	490 - 550	2000 - 4000	Marine applications
VERSACURE RAC 951 LV	125	320 - 345	1000 - 5000	Lower viscosity curing agent
VERSACURE RAC 952	125	292 - 325	10000 - 35000	
VERSACURE RAC 981	133	260 - 310	700 - 1200	Concrete coatings
VERSACURE RAC 9059 LC	95	320 - 360	500 - 1500	Industrial primers and floor coatings
VERSACURE RAC 9082	174	159 - 211	300 - 2300	Industrial maintenance coatings, solvent version

**GET IN TOUCH
WITH GABRIEL**

For further information and sample materials,
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Gabriel Versacure™ : CYCLOALIPHATIC AMINE CURING AGENT

Product	Amine Hydrogen Equivalent Weight (AHEW)	Amine Value (mg KOH/g)	Viscosity @ 25C (cps)	Key Attribute
VERSACURE RAC 3387	92	290 - 320	225 - 325	Good UV resistant curing agent
VERSACURE RAC 9090	75	360 - 390	125 - 300	Nonyl Phenol and Benzyl Alcohol free curing agent
VERSACURE RAC 9311	43	970 - 990	5 - 25	
VERSACURE RAC 9893	96	300 - 320	80 - 120	
VERSACURE RAC 9950	104	290 - 320	300 - 600	
VERSACURE RAC 9961	204	210 - 235	1500 - 3000	
VERSACURE RAC 9964	92	320 - 340	40 - 80	
VERSACURE RAC 9967	92	290 - 325	200 - 400	Faster cure amine hardner with low color and good UV resistance for floor coatings
VERSACURE RAC 9974	115	255 - 285	450 - 550	
VERSACURE RAC 9976	114	255 - 285	250 - 500	
VERSACURE RAC 9978	93	300 - 340	40 - 100	
VERSACURE RAC 9979	95	280 - 320	30 - 100	Also, available as nonyl phenol free version
VERSACURE RAC 9981	75	390 - 420	3000 - 4000	
VERSACURE RAC 9982	102	340 - 370	175 - 325	Phenol free curing agent
VERSACURE RAC 9983	110	235 - 275	350 - 700	Good chemical resistant curing agent with lower color, also available in different curing speeds
VERSACURE RAC 9985 PF	70	520 - 560	800 - 1200	Phenol free curing agent
VERSACURE RAC 9987	110	260 - 285	400 - 800	
VERSACURE RAC 9989	54	500 - 550	800 - 1500	Medium viscosity curing agent with high Tg capability if cured at elevated temperature
VERSACURE RAC 9990	72	384 - 407	85 - 145	Lower viscosity curing agent
VERSACURE RAC 9994	104	280 - 320	250 - 350	
VERSACURE RAC 9996 LV	92	290 - 325	20 - 100	Lower viscosity curing agent
VERSACURE RAC 9998	101	330 - 370	100 - 250	

Gabriel Versacure™ : AROMATIC AMINE CURING AGENT

Product	Amine Hydrogen Equivalent Weight (AHEW)	Amine Value (mg KOH/g)	Viscosity @ 25C (cps)	Key Attribute
VERSACURE RAC 9968	73	400 - 480	2000 - 3500	Concrete coating with good chemical resistance
VERSACURE RAC 9984	49	600 - 650	1000 - 3000	Tank linings and chemical resistance coatings
VERSACURE RAC 9986	88	345 - 385	200 - 450	Lower temperature curing and chemical resistance coatings

Gabriel Versacure™ : OTHER CURING AGENTS

Product	Amine Hydrogen Equivalent Weight (AHEW)	Amine Value (mg KOH/g)	Viscosity @ 25C (cps)	Key Attribute
VERSACURE RAA 3399	145	575 - 675	1000 - 1750	Accelerator for epoxy and polyether amine systems
VERSACURE RAC 9508 SC	112	295 - 355	350 - 700	Amidoamine curing agent

VERSACURE™ HIGH PERFORMANCE EPOXY CURING AGENTS

Gabriel's Versacure epoxy curing agents provide formulators with a versatile array of properties when used in a two-part system with epoxy resin. Just prior to use, the Versacure epoxy hardener is mixed with an epoxy resin, causing a non-reversible chemical reaction. The result of that reaction is a solid, crosslinked, high molecular-weight polymer.

Cured epoxies are very tough, have very good adhesion to a variety of substrates and have excellent chemical resistance. Because of this unique combination of properties, Versacure cured epoxy systems are used in a number of different industries, such as protective coatings, adhesives and bondings, composites, electrical insulation, and tooling.



VERSACURE PRODUCT CATEGORIES

- Modified amines:
 - Aliphatic amines
 - Cycloaliphatic amines
- Phenalkamines
- Aromatic amines

VERSACURE MODIFIED AMINES

Versacure Modified Amines are based on aliphatic and cycloaliphatic amines, but modified to improve performance in the curing of epoxy resins and to increase their compatibility. To help provide the most effective amine for your needs, Versacure products include many amine adducts, amine salts, and accelerated adducts, so the parent amine has been customized to achieve the end results you desire. These modifications can provide better epoxy resin compatibility and allow wider mix ratios in the cured film than the parent amine.

ADVANTAGES

- Reduction or elimination of blush
- Significantly faster cure times
- Lower reaction temperatures

VERSACURE PHENALKAMINES

Versacure Phenalkamines contain amine, phenol, aromatic, and aliphatic structures, differentiating them from other polyamides and polyamine curing agents. They provide unique properties that give formulators a wide window to operate. To meet the most demanding needs, Versacure Phenalkamines include products with a wide range of viscosities and reactivities.

ADVANTAGES

- Low temperature cure/year-round use
- Excellent water and chemical resistance
- Excellent adhesion
- Flexibility
- High solids formulations - VOC compliance

VERSACURE AROMATIC AMINES

Versacure Aromatic Amines were developed to achieve greater heat and chemical resistance than other amines used to cure epoxy resins. Aromatic amines cure slowly at room temperature and typically require heat, sometimes increasing in stages, to reduce the exotherm produced. Aromatic Amines find use in high end applications, such as composites and syntactic foams.

ADVANTAGES

- Excellent heat resistance, typically HDT/Tg >150° C
- Excellent mechanical properties
- Good electrical properties
- Excellent chemical resistance
- Long pot life