

Curatives

Solutions Portfolio

**Ethacure[®] 100 plus, 100-LC, 100-ULC,
270, 300, 520, 534 and E 420**

Ethacure® 100 Plus

Product Market Segmentation

Ethacure curatives are low-viscosity, pourable liquids that are easy to mix, meter and dispense.

- High purity
- 100% active
- Simple to blend & handle without heating

Value in Polyurea Applications

Ethacure 100 is the workhorse curative for polyurea and polyurethane applications particularly, spray applications. It is a high quality, liquid product that delivers exceptional product benefits such as:

- Adjustable reaction times
- Outstanding mechanical performance
- Ease of processing
- Zero dust exposure

Integrating E100 in polyurea coating engineering equips formulators and end-users with increased versatility, adjustability, and dynamic performance advantages.

Spray Polyurea Formulations

MDI prepolymer 15.5% NCO (has a high 2,4'-isomer content)	100
B-Side Components, %wt.	
ETHACURE 100	18.69
ETHACURE 420	9.35
Polyether amine D-2000	60.75
Polyether amine T-5000	4.67
Pigment	4.67
UV absorber	1.87
Gel time, sec.	12
Physical Properties	
Tensile Strength, psi (Mpa)	2420 (16.7)
Elongation, %	455
Tear Strength, pli (N/mm)	382 (67)

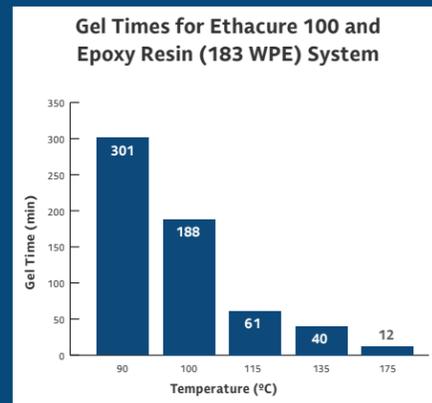
Value in Epoxy Applications

Ethacure 100 is a viable curative for use in epoxy applications, and as an MDA replacement in the production of filament wound pipe. Cured parts display high-grade benefits such as:

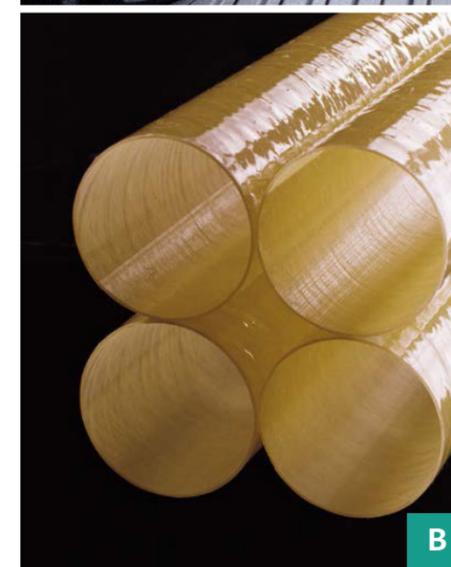
- Good “wetting” characteristics
- Low moisture accumulation
- High glass transition temperatures (Tgs)
- Exceptional chemical resistance

Epoxy Formulation

Epoxy Resin (WPE = 183 g/eq)	100
ETHACURE 100, phr.	25.5
Cure Cycle	1.5 hrs. at 175 °C
Physical Properties	
Tensile Strength, Mpsi	11.3
Tensile Modulus, Mpsi.	390
Elongation, %	6.3
Flexural Modulus, Mpsi.	390
Tg, °C	154
Post Cure	30 min. 250°C
Tg, after post, °C	188



Gel times have been determined at different temperatures as guidance for our potential customers.



Ethacure® 100 Plus Applications

A. Spray Polyurea Coatings

- Truck Bed Liners
 - OEM
 - After Market
- Water Proofing Membrane
- Amusement park tanks
- Bridges
- Pipe coating
- High speed rail
- Concrete
- Secondary Containment
- Oil and Gas

B. Epoxy Composites

- Filament wound epoxy pipe
- Syntactic foam
- Grinding wheel
- Electrical laminates

C. Polyurethane Cast Elastomer

- Wheels
- Belts
- Tools
- Rollers

D. PU Foam

- Building Insulation
- Roofing

E. RIM

- Vehicle parts



Ethacure® 270

Value in Epoxy Applications:

Albemarle's Ethacure 270 curing agent is strategically formulated to provide longer and adjustable reaction times when cured with epoxy resins.

Polymers cured with Ethacure 270 deliver exceptional properties such as high temperature performance, substantial mechanical strength and good chemical resistance. These characteristics make it an excellent curative for fiber reinforced pipe and composites.

Concentration & Performance Optimization

Optimum level for maximum temperature performance is 24.7 phr for resins with WPE's of 187g/eq.

Ethacure® 100-LC



Value in Low Color Applications

Ethacure 100-LC is the lowest-colored aromatic diamine commonly available. Specialized production techniques and a proprietary, patented stabilizer system produce a curative with extremely low initial color and increased color stability.

Specifying Ethacure 100-LC in formulations results in:

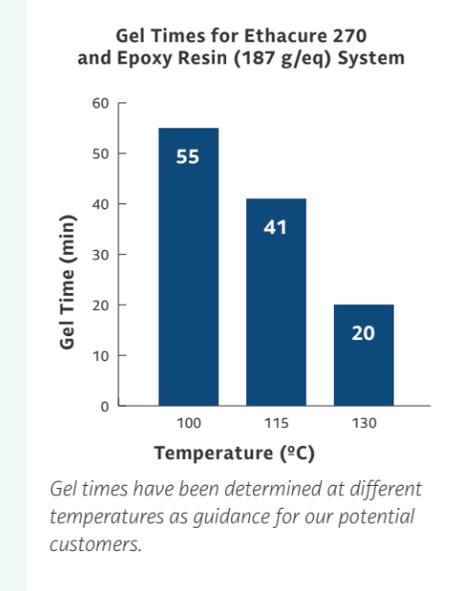
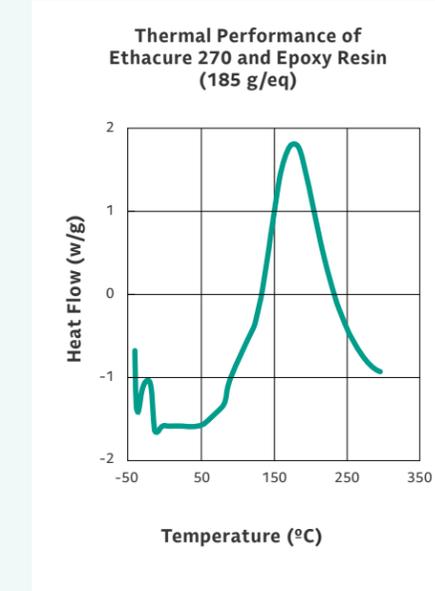
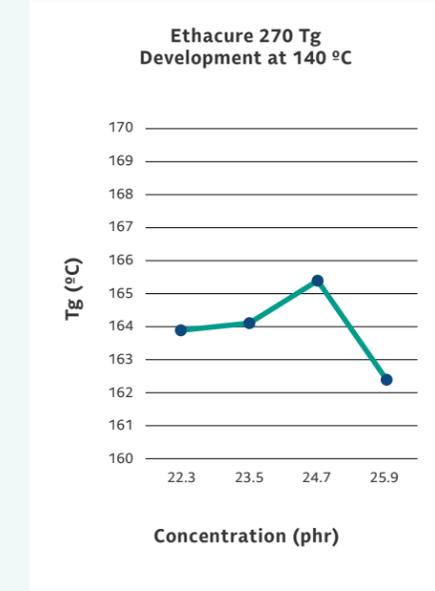
- Lower color in final parts
- Reduced pigment loading
- Easier color matching



Ethacure 100-LC Applications

Polyurea Cast Elastomer

- Optically clear wheels
- Bullet proof applications
- Eye glass lenses
- Golf ball covers



Gel times have been determined at different temperatures as guidance for our potential customers.

Ethacure 270 Applications

Epoxy Composites

- Filament wound epoxy pipe
- Advanced composites for aerospace applications





Ethacure® 300

Value in Cast Elastomer Applications

Albemarle's Ethacure 300 puts users in control. Incorporating this versatile, easy-to-handle liquid into operations results in immediate benefits:

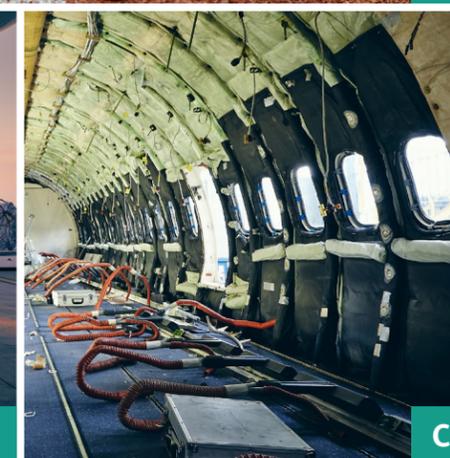
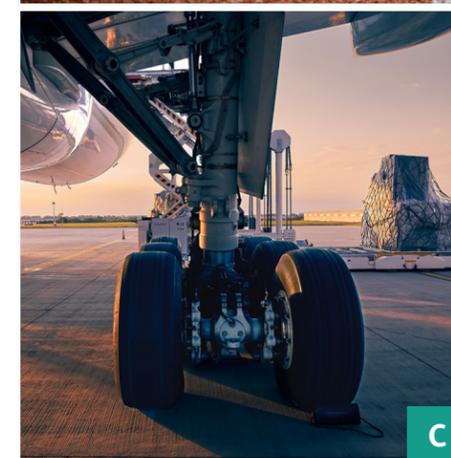
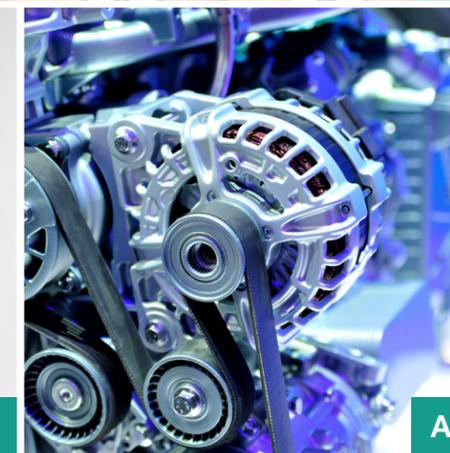
- A safer solution
- High quality product with reduced odor
- Ability to mix and match prepolymers to fit needs
- Adjustable reaction times
- Eliminated dust exposure and melting
- Reduced costly, inconvenient heating
- Simplified handling and blending
- Reduced exposure to hazardous materials

Exhibiting outstanding physical performance, Ethacure 300 cured cast elastomers compete favorably with competitive alternatives, making it the leading alternative for MOCA replacement. Cured cast elastomers display excellent strength, hardness, modulus and elongation at break point.

E300 is a liquid curative which allows formulators to fine-tune processing conditions and reaction times. Utilizing Ethacure 300 in cast elastomer applications gives users reassurance that they will be able to meet application specification requirements when formulating.

Formulation Examples & Performance in Cast Elastomer Applications

Prepolymers Type	PTMEG	PTMEG	PPG
Prepolymer	Adiprene L-100	Adiprene L-100	Vibrathane B-627
Curative	E300	E300	E300
Processing Data			
Prepolymer, % NCO	4.12	9.46	6.20
Prepolymer, temp., °C	80	80	50
Curative, phr.	10.0	22.9	15
Pour time, min	5.0	0.9	7.0
Gel time, min.	6.0	1.3	11
Post-cure, (hrs./100 °C)	18	3	18
Curative	E300	E300	E300
Polymer Properties			
Hardness, Shore A	88	--	94
Hardness, Shore D	--	73	--
Tensile, psi	5760	7560	4910
M-100 %, psi	1070	4600	1770
M-300 %, psi	2140	--	3240
Elongation	410	260	350
Die-C tear, pli	260	--	260
Split tear, pli	80	100	60
Compression set, %	31	--	34
Resilience, %	45	51	50



Ethacure® 300

Applications

A. Polyurethane Cast Elastomers (hot)

- Rollers: Computer printers, Copy machines, Boat trailers
- Belts: Drive belts, Conveyor belts
- Tires
- Wheels
- CMP polishing pads
- Golf balls

B. Polyurethane Cast Elastomers (cold)

- Athletic surfaces
- Tire fill
- Thermal break

C. Epoxy Composites (cold)

- Carbon reinforced composite for aerospace applications



Ethacure[®] 420

Value in Polyurea Applications

Ethacure 420 increases versatility for polyurea applicators. It is a liquid curative that boosts polymer performance, particularly elasticity, surface finish and adherence capabilities.

Formulators can easily produce the soft elastomers needed in caulks and sealants and appreciate the way Ethacure 420 improves pot-life. Property performance is enhanced while tailored reaction times maintained.



Spray Polyurea Coatings

- Truck bed liners
- Water proofing membrane
- Secondary containment
- Flooring coatings



Polyurea/Polyurethane

- Sealants and Caulks

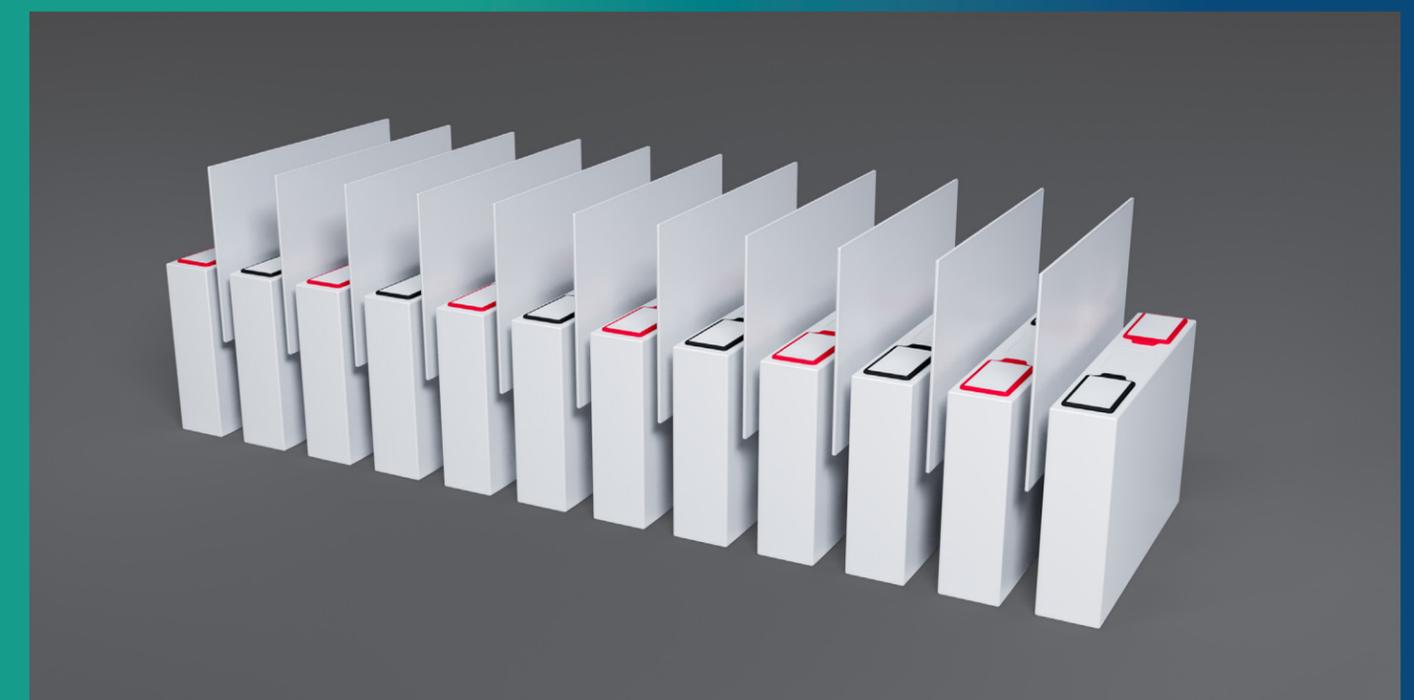
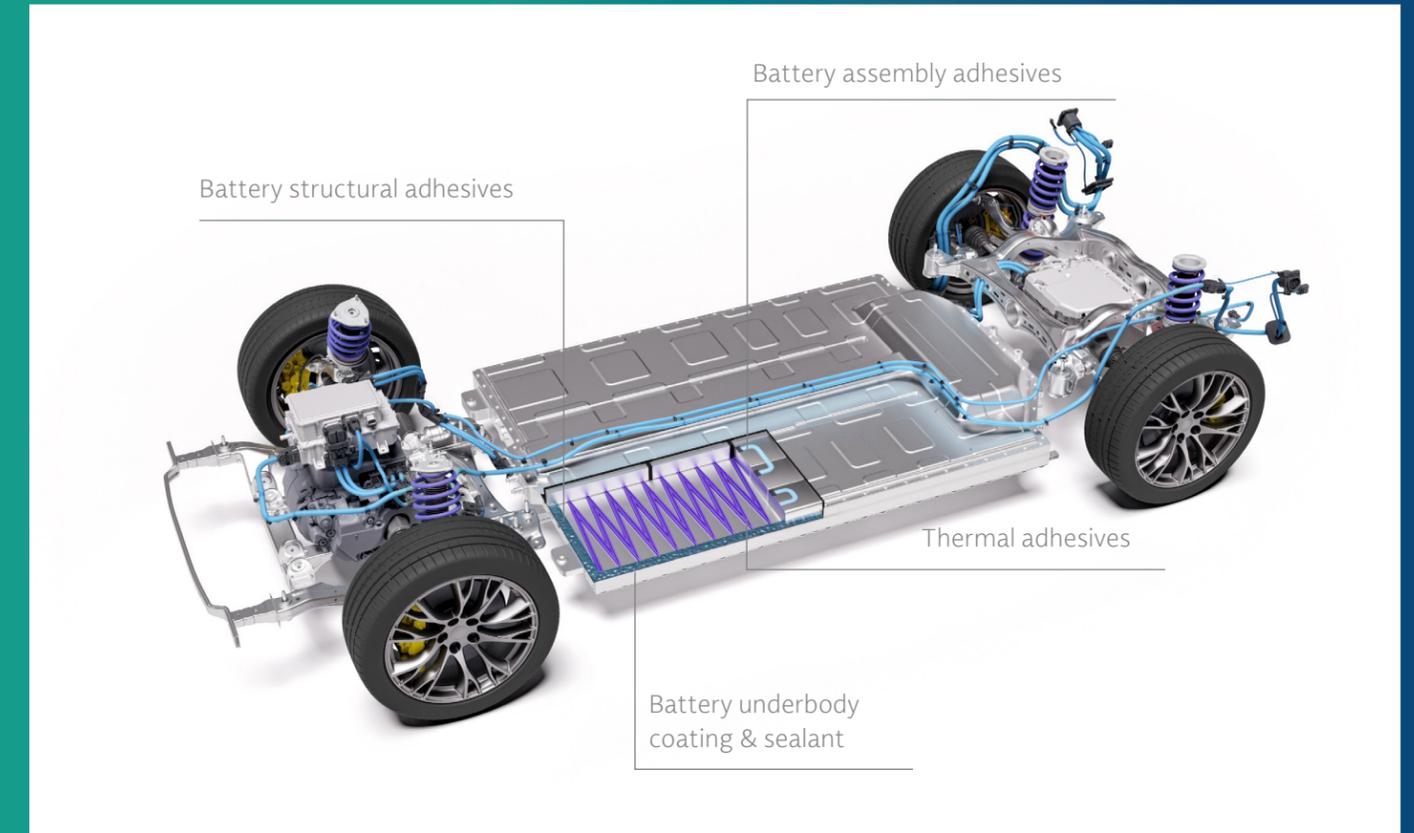


PU Foam

- Building insulation and Roofing

New Applications

- Thermally conductive structural adhesives
- PU insulation foam for thermal runaway mitigation





Capabilities



Largest Ethacure® 100 (DETDA) Global Capacity

Albemarle's Ethacure curatives are produced in world-class manufacturing facilities, supported by dedicated and experienced teams who are committed to producing material of the highest quality.

Our global capacity of the Ethacure 100 (DETDA) curative and robust production capabilities across our entire product portfolio are unmatched, allowing us to be the reliable and sustainable supplier that our customers deserve.

Together, with our customer networks, we are dedicated to supporting continuous innovation and unparalleled growth in the polyurethanes industry.



Technical Service *and Support*

Our Technical Service team is committed to offering best-in-class support to our customer networks throughout the development process. We make it a priority to add value for our customers by diligently identifying performance optimization strategies that best suit their individual needs.

Our qualified team of professionals share decades of knowledge and experience to support a results-focused approach, ensuring our customers have what they need to create value-added solutions and overcome their most challenging issues.

Core Capabilities and Instrumentation

Polyurethane Formulation & Testing

- Starter formulations
- Optimization strategies utilizing Design of Experiment (DOE)

Mechanical Testing

- Tensile, tear, elongation, hardness, compression set, resilience

Thermal Testing

- DSC, TGA, R-Value

Cone Calorimetry

Polyurea Spraying

UV Weatherometer



Albemarle is a specialty chemicals company that leads the world in transforming essential resources into critical ingredients for mobility, energy, connectivity and health. With over 50 years of science-driven expertise, we are a trusted global provider of advanced curatives and organometallics solutions that empower our customers worldwide.

As one of the world's largest suppliers of bromine and lithium products, Albemarle is vertically integrated — from resource extraction to tailored product development. This integration provides supply chain transparency and reinforces our mission to make a meaningful impact on people and the planet.

Contact Us:

PCSales@albemarle.com

[Albemarle.com/pcs](https://www.albemarle.com/pcs)

