

Product information

ANCAMINE[®] 2904

Curing Agent

DESCRIPTION

Ancamine 2904 curing agent is a cycloaliphatic amine designed to cure liquid epoxy resins at elevated ~125°C temperatures; lower than typical cycloaliphatic amines. Ancamine 2904 curative exhibits moderate pot life with rapid cure ability at elevated temperatures, and can provide excellent chemical resistance, high mechanical strength, and high temperature tolerance.

TYPICAL PROPERTIES

Property	Value	Unit	Method
Appearance	Clear		
Colour	1	Gardner	
Viscosity @ 77°F / 25°C	40–50	cPs	Brookfield LV Spindle #21
Specific Gravity @ 77°F / 25°C	0.99		
Use Level	23	phr	

ADVANTAGES

- Excellent physical properties
- High heat deflection temperature
- Good pot life
- Excellent chemical resistance

APPLICATIONS

- Laminates and Composites
- Filament Wound Pipe / Tanks / Fittings

SHELF LIFE

At least 36 months from the date of manufacture in the original sealed container at ambient temperature. Store away from excessive heat and humidity in tightly closed containers.

STORAGE AND HANDLING

Refer to the Safety Data Sheet for Ancamine 2904 curing agent.

TYPICAL CURE SCHEDULE

4 hours at 204°F
Post cure can be done at 150°C (300°F) for 2 h to achieve higher thermal and mechanical properties.

TYPICAL HANDLING PROPERTIES *

Property	Value	Unit	Method
Mixed Viscosity @ 104°F/ 40°C	800–1100	cPs	RV Spindle #27
Gel Time (150g mix @ 77°F/ 25°C)	140	min	
Time to 10,000 cPs @ 104°F/ 40°C	90	min	RV Spindle #27

THERMAL PERFORMANCE *

Property			
Glass Transition Temperature	150/ 165°C	302/ 330°F	

(DSC second scan; Iso thermal cure 60°C for 1 h + 150°C for 2 h)

MECHANICAL PERFORMANCE - CAST PANEL *

Property			
Tensile Strength	81 MPa	11.7 ksi	ASTM D638
Tensile Modulus	2.1 GPa	0.30 Msi	
Tensile Elongation at Break	6.0 %	6.0 %	
Flexural Strength	150 MPa	21.7 ksi	ASTM D790
Flexural Modulus	3.0 GPa	0.46 Msi	
Compressive Strength	111 MPa	16.1 KSI	ASTM D695
Compressive Modulus	2.0 GPa	0.29 Msi	

MECHANICAL PERFORMANCE - COMPOSITE PANEL *

Property			
ILSS 0° Longitude / 90° Transverse	65 MPa	9.4 ksi	ASTM D2344
Flexural Strength - 0° Longitude	1150 MPa	170 ksi	ASTM D790
Flexural Modulus - 0° Longitude	45 GPa	6.65 Msi	
Compressive Strength (tabs) - 0° Longitude	391 MPa	56 ksi	
Compressive Modulus (w/o tabs) - 0° Longitude	15 GPa	2.1 Msi	

Composite Panel Fabrication:

Method: Vacuum Assisted Resin Transfer Molding

Fiber Type: E-glass (275g / m²) Unidirectional

Fiber Volume: 60 ± 3%

Cure Schedule: 4 h @ 100°C

* Ancamine 2904 curing agent formulated with standard Bisphenol-A based (DGEBA, EEW=180) epoxy resin

Ancamine® is a registered trademark of Evonik Industries AG or one of its subsidiaries.

Disclaimer

This information and any recommendations, technical or otherwise, are presented in good faith and believed to be correct as of the date prepared. Recipients of this information and recommendations must make their own determination as to its suitability for their purposes. In no event shall Evonik assume liability for damages or losses of any kind or nature that result from the use of or reliance upon this information and recommendations. EVONIK EXPRESSLY DISCLAIMS ANY REPRESENTATIONS AND WARRANTIES OF ANY KIND, WHETHER EXPRESS OR IMPLIED, AS TO THE ACCURACY, COMPLETENESS, NON-INFRINGEMENT, MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE (EVEN IF EVONIK IS AWARE OF SUCH PURPOSE) WITH RESPECT TO ANY INFORMATION AND RECOMMENDATIONS PROVIDED. Reference to any trade names used by other companies is neither a recommendation nor an endorsement of the corresponding product, and does not imply that similar products could not be used. Evonik reserves the right to make any changes to the information and/or recommendations at any time, without prior or subsequent notice.

EVONIK OPERATIONS GMBH

Business Line Crosslinkers
Paul-Baumann-Str. 1
45764 Marl
Germany

www.evonik.com/crosslinkers

Product Information: APCSE@evonik.com

Sample Request: APCSE@evonik.com

EVONIK CORPORATION

Business Line Crosslinkers
7001 Hamilton Boulevard
Trexlerstown, PA 18087
USA

CrosslinkersProinfo@evonik.com

Crosslinkers-Samples@evonik.com

EVONIK SPECIALTY CHEMICALS (SHANGHAI) CO., LTD.

Business Line Crosslinkers
55, Chungong Road
Xinzhuang Industry Park
Shanghai, 201108
China

CL-Asiainfo@evonik.com

CL-Asiainfo@evonik.com

