

**ANCAMINE® 2903** Curing Agent**DESCRIPTION**

Ancamine 2903 curing agent is a cycloaliphatic amine curing agent modified with diethyltoluenediamine. The product is free of methylenedianiline (MDA) and designed to cure liquid epoxy resin at elevated temperatures. Ancamine 2903 curing agent exhibits improved pot-life versus conventional cycloaliphatic amines. Ancamine 2903 curing agent provides excellent chemical resistance, high mechanical strength, and good properties at high temperatures.

**ADVANTAGES**

- Low exotherm temperature
- Long pot-life
- Excellent mechanical properties
- Excellent hydrolysis resistance

**APPLICATIONS**

- Laminates and composites
- Filament winding
- Resin transfer moulding
- Fiber impregnation

**SHELF LIFE**

At least 24 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.

**PACKAGING AND HANDLING**

Refer to the Safety Data Sheet for Ancamine 2903 curing agent.

**TYPICAL CURE SCHEDULE**

- 2 h @ 60°C followed by 3 h @ 120°C
- Optional post-cure for 2 h @ 150 °C for higher thermal and mechanical properties

**TYPICAL PROPERTIES**

<b>Appearance</b>	Light yellow liquid
<b>Colour<sup>1</sup> (Gardner)</b>	≤9
<b>Viscosity<sup>2</sup> @ 25°C, [mPa.s]</b>	80-150
<b>Amine Value<sup>3</sup> (mg KOH/g)</b>	535-610
<b>Specific Gravity @ 21°C</b>	1.02
<b>Equivalent Wt/{H}</b>	44
<b>Recommended use Level<sup>4</sup> [PHR]</b>	24

**TYPICAL HANDLING PROPERTIES<sup>4</sup>**

<b>Mixed Viscosity<sup>2</sup> @ 40°C [mPa.s]</b>	700-1500
<b>Gel Time<sup>5</sup> @ 25°C (min)</b>	160-220
<b>Time to 10,000 mPa.s<sup>6</sup> @ 40°C [min]</b>	45-60

**TYPICAL PERFORMANCE PROPERTIES<sup>4</sup>**

<b>Glass Transition Temperature<sup>7</sup> [°C]</b>	157
<b>Flexural Strength<sup>8</sup> [MPa]</b>	134
<b>Flexural Modulus<sup>8</sup> [GPa]</b>	2.3
<b>Tensile Strength<sup>9</sup> [MPa]</b>	65
<b>Tensile Modulus<sup>9</sup> [GPa]</b>	2.1
<b>Tensile Elongation @ Break<sup>9</sup> [%]</b>	5.5
<b>Compressive Strength<sup>10</sup> [MPa]</b>	112
<b>Compressive Modulus<sup>10</sup> [GPa]</b>	2.2

**COMPOSITE PANEL<sup>4,11</sup>**

<b>Interlaminar Shear Strength<sup>12</sup> [MPa]</b>	71
<b>Flexural Strength<sup>13</sup> [MPa]</b>	1120
<b>Flexural Modulus<sup>13</sup> [GPa]</b>	47

**Footnotes:**

- (1) ASTM D 1544-80
- (2) Brookfield LV, Spindle 21 or RV, Spindle 27 (mix)
- (3) Perchloric Acid Titration
- (4) With bisphenol-A based epoxy resin (EEW=180)
- (5) Techne GT-3 Gelation Timer, 150 g mix
- (6) Rheometer with CP 50-1 @ 16 rpm
- (7) DSC @ 10°C/min second heating scan
- (8) ASTM D 790
- (9) ASTM D 638
- (10) ASTM D 695
- (11) Composite panel fabrication method: VARTM  
Fiber type: E-glass (275 g/m<sup>2</sup>) unidirectional; Fiber volume: 60 ± 3 %
- (12) ASTM D 2344 (composite 0° longitude)
- (13) ASTM D 790 (composite 0° longitude)

Epoxy Curing Agents and Modifiers

# ANCAMINE® 2903 Curing Agent

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