

ARA[®] XTREME PY 2100 US

Product Description

ARA[®] XTREME PY 2100 US is a very low viscosity, high functionality amine based, high purity resin with relatively good storage stability. It cures very rapidly to produce products having exceptionally high heat deflection temperatures.

ARA[®] XTREME PY 2100 US is a particularly effective resin in a wide variety of formulating applications including adhesives, laminating systems, etc. It can be used as a viscosity modifier and, also with slow reactivity resins to boost their rate of cure; however, caution must be exercised in the selection of hardener and cure conditions because of its rapid cure characteristics. Even moderate amounts, when cured with aliphatic amines, can develop sufficient exotherm to cause charring and smoke evolution. This can also occur if aromatic amine hardened systems are gelled at excessively high temperatures or if catalysts, such as boron trifluoride monoethylamine are used alone or in conjunction with aromatic hardeners. ARA[®] XTREME PY 2100 US is a triglycidyl of para-aminophenol, the chemical structure of which shown below.



Features

- Low viscosity
- Fast reacting
- Excellent chemical resistance
- Good mechanical strength
- Excellent thermal properties
- Outstanding corrosion resistance

Typical Properties*

Property	Value		
Appearance	Clear, no contamination		
Water content, max, %	0.2		
Epoxy equivalent weight, g/eq	95 - 106		
Viscosity at 25°C, cP	550 - 850		
Density at 25 °C, g/cm ³	1.21 - 1.22		
Flash point, °C (°F)	>93 (>200)		

*Typical properties are based on Huntsman's test methods. Copies are available upon request.

Processing

Mix Ratio

Product	Formulation I (pbw)	Formulation II (pbw)
ARA [®] XTREME PY 2100	100	100
Aradur [®] 976-1	49	
Aradur [®] 5200		45

Processing Data

Property	Formulation I	Formulation II
Gel time	42.2 minutes at 160°C 18.9 minutes at 180°C 8.2 minutes at 200°C	94.3 minutes at 120°C 24.8 minutes at 150°C 8.4 minutes at 180°C
Typical cure cycle	0.5 hours at 80°C + 0.5 hours at 100°C + 1.5 hours at 120°C + 2.0 hours at 177°C	2 hours at 150°C + 2 hours at 200°C

Typical Physical Properties

Unless otherwise stated, the data were determined with typical production batches using standard test methods. They are typical values only, and do not constitute a product specification.

Property		Formulation I	Formulation II
Glass transition temperature, T _g , DMA (Dry) DMA (Wet) ¹	°C	270 184	252 183
Water absorption, ² % wt.		4.8	2.8
Flexural strength at 25°C, ksi (M	Pa)	20 (137)	16.5 (113)
Flexural modulus at 25°C, ksi (G	Pa)	501 (3.4)	467 (3.2)
Tensile strength, ksi (MPa)	at 25°C at 100°C	10.4 (71.1) 7.4 (50.5)	10.8 (73.8) 5.7 (39)
Tensile modulus, ksi (GPa)	at 25°C at 100°C	515 (3.5) 336 (2.3)	455 (3.1) 266 (1.8)
Tensile elongation, %	at 25°C at 100°C	2.7 2.5	3.6 2.4

 1 Wet conditioning is done in water at 160°F for 48 hours.

²Water absorption is measured in boiling water for 48 hours.

Storage

ARA[®] **XTREME PY 2100 US** is supplied a 55 gallon, non-returnable, closed-head, black iron drum (DOT 17E) containing 500 pounds. This product should be stored in a dry place, in the sealed original container, at temperatures between 2°C and 8°C (35.6°F and 46.4°F). Under these storage conditions, the shelf life is **3 years** (from date of manufacture). The product should not be exposed to direct sunlight.

Never store ARA[®] XTREME PY 2100 US in warm areas, particularly near heat sources or hot equipment, or even in direct sunlight, because violent exothermic reaction or explosion may result. Storage at higher temperatures may adversely affect properties. Maximum temperature this product should be subjected to while thawing for use should not exceed 37.8°C (100°F).

To facilitate handling of ARA[®] XTREME PY 2100 US as a workable liquid, warm the container gradually by letting it stand in an area at room temperature (approximately 24°C (75°F) prior to use. Never accelerate warming by using hot ovens, band heaters, hot plates, open flames, or any means, which could cause a "hot spot". Such practices may initiate violent exothermic reaction or explosion. Contamination, especially by acidic or basic substances, may also start a violent exothermic reaction and must be avoided.



Precautionary Statement

Huntsman Advanced Materials Americas LLC maintains up-to-date Safety Data Sheets (SDS) on all of its products. These sheets contain pertinent information that you may need to protect your employees and customers against any known health or safety hazards associated with our products. Users should review the latest MSDS to determine possible health hazards and appropriate precautions to implement prior to using this material.

First Aid!

Refer to SDS as mentioned above.

KEEP OUT OF REACH OF CHILDREN

FOR PROFESSIONAL AND INDUSTRIAL USE ONLY

Advanced Materials Technical Datasheet

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