

Araldite® CY 221/ HY 2966

Flexible, Room Temperature Curing, Epoxy Encapsulating System

Araldite® CY 221 with Hardener HY2966 is a low-viscosity, room temperature curing encapsulation system which produces tough, flexible castings. This system is designed as an excellent general-purpose casting system, particularly where pressure-sensitive components are to be encapsulated or where thermal shock or crack resistance is required. Araldite CY221/HY 2966 has been used for both impregnating and casting electrical components. Its very low viscosity allows the user to impregnate coils or fill tightly spaced components and makes it much easier to achieve a bubble free casting. This system is resistant to heat and environmental aging and has outstanding thermal cycling and fracture resistance. Its chemistry also allows for the best reparability available in an epoxy encapsulation system.

Alternate hardeners are available to achieve faster or slower cures than the standard Araldite CY 221/HY 2966 system. Custom colored and mineral filled versions are also available on request. Please contact us to discuss your application if you think a modified version might be needed for your application.

TYPICAL APPLICATIONS

- General potting of electronic devices
- Encapsulation of stress-sensitive components
- Low-voltage encapsulation

HANDLING PROPERTIES

	<u>VALUE</u>	<u>TEST METHOD</u>
Density CY 221, g/cm ³	1.15	ASTM E-201
Density HY 2966, g/cm ³	0.97	ASTM E-201
Viscosity CY 221 @ 25°C, cps	350	ASTM D-2393
Viscosity HY 2966 @ 25°C, cps	500	ASTM D-2393
Viscosity Mixed @ 25°C / @ 40°C, cps	450 / 205	ASTM D-2393
Mix Ratio By Weight	100A:25B	Calculated
Mix Ratio By Volume	100A:30B	Calculated
Time to increase viscosity	@ 25°C / @ 40°C	ASTM D-2393
Increase to 1000 cP	33 min. / 13 min.	
Increase to 3000 cP	68 min. / 37 min.	
Increase to 15000 cP	117 min. / 54 min.	
Gel Time @ 25°C, 100g mass	3-4 hours	ASTM D-2471
Recommended Cure Schedules:	24 – 48 hrs. @ 25°C or allow to gel (3-4 hrs @ 25°C) then cure for 4 hrs @ 65°C	

PHYSICAL PROPERTIES

	<u>VALUE</u>	<u>TEST METHOD</u>
Color	Light yellow	Visual
Density, g/cm ³	1.11	ASTM E-201
Shore Hardness	28D	ASTM D-2240

Tensile Strength, psi	725	ASTM D-638
Tensile Elongation at break	55%	ASTM D-638
Water Absorption, % by weight		
After 10 days @ 25°C	1.8%	ISO 62
30 minutes @ 100°C	1.2%	ISO 62
HDT, RT Cure, °F (°C)	140 (60)	ASTM D-648
HDT, Post Cured, °F (°C)	162 (72)	ASTM D-648
Izod Impact, Notched, ft-lb/in	0.58	ASTM D-256
Shrinkage, in/in	<0.0002	ASTM D-2566

ELECTRICAL PROPERTIES				
	VALUE			TEST METHOD
Electrolytic Corrosion	AN/1			DIN 53489
Dielectric Strength, kV/mm	≥ 21			ASTM D-149
	@23°C	@40°C	@50°C	
Volume Resistivity, ohm-cm	4x10 ¹³	6x10 ¹¹	9x10 ¹⁰	ASTM D-257
Dielectric Constant, 50 Hz	6.0	7.9	8.4	ASTM D-150

NOTE : Typical Properties determined using ARALDITE CY 221/HY 2966 cured for 48 hours @ 25°C. Values are based on laboratory or average production results – not for specification purposes.

SUGGESTED PROCESSING GUIDELINES:

ARALDITE CY 221/HY 2966 can be applied by pouring, brushing, roller, squeegee, knife, spatula, or by spraying or dipping. It is also suitable for meter-mix dispensing and can be supplied in premixed and frozen syringes for small volume applications.

Weigh Part A and Part B in the recommended ratio as accurately as possible into a clean mixing container. Always use weighing equipment having accuracy in proportion to the amounts being weighed – ideally the accuracy of the scale should be less than 1% of the mass being weighed. Blend by using a spatula or stirring stick for 2-3 minutes using a kneading motion. Scrape the bottom and sides of the mixing container carefully and frequently to produce a uniform mixture.

For best adhesion apply to clean, dry surfaces. Allow to cure at room temperature for 24-48 hours or allow to set at 25°C for 3-4 hours then heat cure at 65°C cure for 4 hours. For small volume application immediate heat cures may be possible and more rapid cures may be possible at higher temperatures. If you would like recommendation on alternate cures please contact us. Always evaluate a suggested cure schedule in your application prior to implementing it for full scale production as each application unique conditions can effect the results.

STORAGE GUIDELINES:

Store this material in a clean, cool and dry environment in its tightly closed original container. Products may settle during storage and should be thoroughly re-mixed prior to use. Avoid extended exposure to high humidity. Tightly re-seal after use. If the recommended storage conditions are observed the products will have a minimum shelf-life of 12 months from the date of shipment.

HANDLING PRECAUTIONS:

Mandatory and recommended industrial hygiene procedures should be followed whenever these products are being handled and processed. For additional information please consult the corresponding material safety data sheets.

PERSONAL HYGIENE:

ARALDITE CY 221

CAUTION! May cause eye irritation. Prolonged or repeated skin contact may cause irritation, may cause allergic skin reaction. Avoid contact with eyes, skin, or clothing. Wear eye protection and impervious gloves when handling. Wash thoroughly after handling. Avoid breathing vapor or mist. Keep containers closed when not in use. Use only with adequate ventilation. Do not take internally.

ARALDITE HY 2966

WARNING! Causes skin and eye irritation. May cause allergic skin and respiratory reactions. Harmful if inhaled or swallowed. Do NOT get in eyes, on skin, or clothing. Wear chemical splash goggles and impervious gloves when handling. Wash skin and clothing thoroughly after handling. Avoid breathing vapor or mist. Use only with adequate ventilation. Keep containers closed when not in use. Do NOT take internally.

FIRST AID

In case of contact:

Skin – Immediately wash skin thoroughly with mild soap and water. Remove contaminated clothing and wash before reuse. Destroy contaminated shoes and other articles made of leather.

Eyes – Immediately flush eyes with plenty of water for 15 minutes and get prompt medical attention.

Inhalation - Remove person to fresh air. Administer oxygen or artificial respiration if necessary. Call a physician.

Ingestion - Do not induce vomiting. Dilute with plenty of water and contact physician immediately. Never give anything by mouth to an unconscious person.

DISCLAIMER:

IMPORTANT: The following supercedes Buyer's documents. **SELLER / MANUFACTURER MAKES NO REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** No statements herein are to be construed as inducements to infringe any relevant patent. Under no circumstances shall Seller / Manufacturer be liable for incidental, consequential or indirect damages for alleged negligence, breach of warranty, strict liability, tort or contract arising in connection with the product(s). Buyer's sole remedy and Seller's sole liability for any claims shall be Buyer's purchase price. Data and results presented are based on controlled or laboratory work and must be confirmed by Buyer by testing for its intended conditions of use. The product(s) has not been tested for, and is therefore not recommended for, uses for which prolonged contact with mucous membranes, abraded skin, or blood is intended; or for uses for which implantation within the human body is intended.

Note: Araldite® is a registered tradename of Huntsman Advanced Materials which produces the Cy 221 and Hy 2966 products. SP&S is a distributor for Huntsman and is responsible for the contents of this technical datasheet

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