

Araldite[®] CY 8043 Resin

Product Description

Araldite[®] CY 8043 is a brominated epoxy resin that can produce a flame-retardant casting for electrical and electronic engineering applications.

Applications

- Filament winding
- Casting/encapsulation
- Wet lay-up laminate
- Adhesives

Features

- Low viscosity
- High bromine
- Flame retardant
- Good mechanical and electrical properties
- High filler loading

Typical Properties*

Property	Value
Appearance	Yellow to light brown
Color, Gardner, max	5
Viscosity @ 25°C, cP	3000 - 4000
Bromine content, eq./100g, %	23.0 – 26.0
Epoxy content, eq./100g, %	0.42 – 0.46
Flash point, closed cup, °C (°F)	>185 (366)
Epoxy equivalent weight, g/eq.	222 - 239

*Properties are based on Huntsman test methods. Copies are available upon request

Processing

In working with Araldite® CY 8043, the use of aliphatic polyamine hardeners (e.g. HY 956) would be avoided, due to high exothermic reaction which can liberate poisonous and corrosive gases.

Araldite® CY 8043 tends to crystallize. In order to work with the resin in a satisfactory manner, it should first be heated to 60°C and any crystals present should be dissolved by stirring. Work may commence directly after this operation or also after cooling to room temperature.

In working with Araldite® CY 8043, the use of aliphatic polyamine hardeners is not recommended, since even in relatively small amounts an unusual heat of reaction is liberated which causes poisonous and corrosive gases. The most commonly used hardeners for Araldite® CY 8043 are amines and anhydrides but other hardeners are suitable.

In order to obtain the optimum mechanical and electrical properties, a short cure period at 50 - 60°C is recommended.

The addition of fillers can limit the exothermic heat of reaction, even with large moldings. Small quantities can be processed at 50 - 60°C, respectively, poured into pre-heated molds and gelled. This method results in more efficient mold utilization.

When working with Araldite® CY 8043 and Hardener HY 905, it is necessary, for most applications, to add the Accelerator DY 062 (0.5 - 2.0 pbw). It is possible to achieve hardening at lower temperatures with less shrinkage. The amount of accelerator depends on the desired pot life, processing requirements and conditions, such as available mold time.

First, mix thoroughly Araldite® CY 8043 and Accelerator DY 062. Subsequently, the hardener as well as other possible components, such as fillers, are added and mixed thoroughly. This sequence must be adhered to in order to avoid failures.

The addition of mineral fillers such as quartz powder, microdol, powdered chalk, etc., have proven advantageous. The following are the advantages of using fillers:

- Less shrinkage and less exothermic reaction during hardening
- Low thermal coefficient of expansion
- High thermal conductivity
- High modulus of elasticity but lower breaking tension
- Lowest casting compounds

Mix Ratio

Product	System 1, pbw	System 2, pbw
Araldite® CY 8043	100	100
Hardener Lancast A	35	-
Hardener HY 905	-	80
Accelerator DY 062	-	1

Processing Data

Parameter	System 1	System 2
Typical cure cycle		
@ 25°C	24 - 36 h	-
@ 40°C	10 - 12 h	-
@ 60°C	2 - 6 h	-
@ 80°C	-	4 h
@ 120°C	-	10 h
Starting Viscosity, cP,		
@ 25°C	1000 - 2000	600 - 900
@ 40°C	400 - 600	-
@ 60°C	-	50 - 100
@ 80°C	-	30 - 60
Pot life, min		
@ 25°C	127	-
@ 40°C	61	1
@ 60°C	-	3.5 - 4.5
@ 80°C	-	0.75 - 1.25
Maximum exotherm of 100 g mixture from 25°C	50°C	-

NOTE: The minimum or optimum conditions for curing are best determined by running tests with the actual object, whereby the heat-up time for each batch of compound must be noted. In order to avoid internal stresses (dependent upon the accelerator amount), first reach 100°C, then cure completely at higher temperatures.

Typical Physical and Electrical 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	System 1	System 2
Tensile strength @ 25°C (max) N/mm ²	35 - 45	40 - 80
Tensile strength @ 25°C (fail) N/mm ²	70 - 75	85 - 90
Dissipation factor, tan, 50 Hz		
@ 23°C	1.5 - 1.7%	0.3 - 0.5%
@ 40°C	6 - 7%	0.3 - 0.5%
@ 50°C	11 - 13%	0.3 - 0.5%
@ 60°C	-	-
@ 80°C	-	1.0 - 1.2%
@ 100°C	-	6 - 8%
Dielectric constant, 50 Hz		
@ 23°C	3.6 - 3.8	3.3 - 3.5
@ 40°C	4.2 - 4.4	3.3 - 3.5
@ 50°C	5.0 - 5.2	3.4 - 3.6
@ 60°C	5.9 - 6.1	-
@ 80°C	-	3.5 - 3.7
@ 100°C	-	3.8 - 4.0

Storage

Araldite® CY 8043 is supplied in 55 pound steel drums, and should be stored in a dry place in its original sealed container at room temperature. Under these storage conditions, the product has a shelf life of **1 year** (from date of manufacture). The product should not be exposed to direct sunlight.

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

Important Legal Notice

Sales of the product described herein ("Product") are subject to the general terms and conditions of sale of either Huntsman Advanced Materials LLC, or its appropriate affiliate including without limitation Huntsman Advanced Materials (Europe) BVBA, Huntsman Advanced Materials Americas Inc., or Huntsman Advanced Materials (Hong Kong) Ltd. ("Huntsman"). The following supercedes Buyer's documents.

Huntsman warrants that at the time and place of delivery all Products sold to Buyer shall conform to the specifications provided to Buyer by Huntsman.

While the information and recommendations included in this publication are, to the best of Huntsman's knowledge, accurate as of the date of publication, NOTHING CONTAINED HEREIN (EXCEPT AS SET FORTH ABOVE REGARDING CONFORMANCE WITH SPECIFICATIONS PROVIDED TO BUYER BY HUNTSMAN) IS TO BE CONSTRUED AS A REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, NONINFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHTS, OR WARRANTIES AS TO QUALITY OR CORRESPONDENCE WITH PRIOR DESCRIPTION OR SAMPLE, AND THE BUYER ASSUMES ALL RISK AND LIABILITY WHATSOEVER RESULTING FROM THE USE OF SUCH PRODUCT, WHETHER USED SINGLY OR IN COMBINATION WITH OTHER SUBSTANCES.

No statements or recommendations made herein are to be construed as a representation about the suitability of any Product for the particular application of Buyer or user or as an inducement to infringe any patent or other intellectual property right. Buyer is responsible to determine the applicability of such information and recommendations and the suitability of any Product for its own particular purpose, and to ensure that its intended use of the Product does not infringe any intellectual property rights.

The Product may be or become hazardous. The Buyer should obtain Material Safety Data Sheets and Technical Data Sheets from Huntsman containing detailed information on Product hazards and toxicity, together with proper shipping, handling and storage procedures for the Product, and should comply with all applicable governmental laws, regulations and standards relating to the handling, use, storage, distribution and disposal of, and exposure to the Product. Buyer shall also take all steps necessary to adequately inform, warn and familiarize its employees, agents, direct and indirect customers and contractors who may handle or be exposed to the Product of all hazards pertaining to and proper procedures for safe handling, use, storage, transportation and disposal of and exposure to the Product, and the containers or equipment in which the Product may be handled, shipped or stored.

[Product Brand] is a registered trademark of Huntsman LLC or an affiliate thereof in one or more, but not all countries.

© 2015 Huntsman Advanced Materials Inc.

Main Offices:

Huntsman Corporation
10003 Woodloch Forest Dr
The Woodlands, TX 77380
888-564-9318

Huntsman Advanced Technology Center
8600 Gosling Rd.
The Woodlands, TX 77381
281-719-7400