

Technical Datasheet

Araldite[®] Epoxy Adhesive B 1

Resin B 1 (AY 103): Art.-No. **2530.1**



Warning H315-H319-H317-H410-EUH205 P280-P273-P302+P352-P305+P351+P338-P337+P313

Hardener H 2 (HY 951): Art.-No. **2551.1**



Danger H302+H312-H314-H317-H412 P280-P273-P303+P361+P353-P305+P351+P338-P310

Description

Araldite[®] epoxy resin with hardener HY 951 produces a medium-viscosity adhesive that is ideal for bonding metals, ceramics, glass, rubber and plastics and provides chemical-resistant, electrically insulating joints with good mechanical strength.

Processing

REFER TO MATERIAL SAFETY DATA SHEETS PRIOR TO USING THIS MATERIAL!

Mix Ratio (by weight):	100 parts resin to 8-10 parts hardener
Mix Ratio (by volume):	100 parts resin to 9,5-12 parts hardener

Measure (by weight or volume) the Araldite resin and the hardener. Add the hardener to the Araldite resin; making sure that the required amount of hardener is transferred to the resin. Stir thoroughly until mixing is complete.

Air entrainment during mixing results in pores in the cured resin. Mixing under vacuum or in a metering-mixing machine is the most effective way to prevent air entrainment. Alternatively the static resin hardener mixture may be deaerated in a vacuum chamber allowing the foam to expand.

Since the resin system has a limited usable life, it is good practice to prepare only the quantity of adhesive needed for immediate use.

Pot life of 50 g mass is about 1,5-2 h @ 25 °C.

Because of heat generated by the exothermic reaction between resin and hardener, the application time of the mixed epoxy adhesive will be noticeably shortened if more than 250 grams of mixture is allowed to stand in a compact mass, as in a mixing container.

The resin/hardener mix may be applied manually or directly to the pretreated dry and oil-free joint surfaces. A layer of adhesive 0.05 to 0.10 mm thick will normally impart the greatest lap shear strength to the joint. The joint components should be assembled and secured in a fixed position as soon as the adhesive has been applied.

Minimum curing times

Curing can be carried out @ room temperature or in a drying cabinet, curing time depends from the temperature:

Temperature	Curing time
25 °C	24 h
40 °C	8 h
60 °C	3 h
100 °C	20 min

Typical properties

Initial Viscosity at 25°C	0.5-1.0 Pas
Shear Strength* at -60 °C After 1 hr. @ 120 °C	14.5 MPa
Shear Strength* at 20 °C After 24 hrs. @ 20 °C After 12 hrs. @ 40 °C After 20 min. @ 100 °C	17.5 MPa 17.5 MPa 19.5 MPa
Shear Strength* at 90 °C After 20 min. @ 100 °C After 1 hr. @ 120 °C	2.0 MPa 2.8 MPa
Deflection temperature, BS 2782, Method 121A	45 – 60 °C
Coefficient of thermal expansion, ASTM D-696-70	$90 - 95 \times 10^{-6} \text{ K}^{-1}$
Modulus of elasticity, BS 2782, Method 335A	2.7 – 3.0 GPa

* Average shear strength of a 0.91 mm BS L152 aluminum alloy lap joint (joint area was 12.5 mm x 2.5 cm in each case)

Storage Conditions

Store the components in a dry place at room temperature, in tightly sealed original containers. Partly emptied containers should be tightly closed immediately after use. For information on waste disposal and hazardous products of decomposition in the event of a fire, refer to the Material Safety Data Sheets (MSDS) for the particular products.