

Advanced Materials

Araldite® AV 1580 with Hardener HV 1580

Structural Adhesives

Araldite® AV 1580 with Hardener HV 1580 Epoxy Resin Putty

Key properties

- Gap filling putty
- High strength
- Low co-efficient expansion
- Colour coded for easy mixing

Applications

Araldite® AV/HV 1580 GB is an easily worked cold setting two part epoxy resin putty. On curing, the putty provides a tough durable material which is dimensionally stable and resistant to chemical attack. It also forms strong bonds with most structural materials (metals, glass, Plastics, wood, dry concrete, rubber, etc.)

Araldite® AV/HV 1580 GB putty is employed as a general-purpose gap filling material. Besides modeling and gap-joint bonding, the uses of the putty include cable-jointing, the repair of cold/hot water pipes and tanks, the infilling, contouring or balancing of parts subject to high levels of vibration, the encapsulation of small electrical units-and resin tooling, such as in the construction of frame works for Araldite® laminated jigs and fixtures.

Araldite® AV/HV 1580 GB putty has co-efficient of expansion similar to the values for copper and steel. This suits the putty for use in electrical equipment operating down to cryogenic temperatures.

The filled putty can be filed sanded and machined.

Typical product data

Property	AV 1580	HV 1580	Mixed
Appearance	Yellow	Blue	Green
Specific gravity	-	-	ca 2.0
Pot life	-	-	15 mins
Shelf life (2-40°C)	6 years	3 years	-

Note The two parts are supplied as extruded sticks. Satisfactory mixing of the two parts to produce the ready-for-use putty is indicated by a uniform pale green colour.

Processing

Pretreatment

The strength and durability of a bonded joint are dependent on proper treatment of the surfaces to be bonded. At the very least, joint surfaces should be cleaned with a good degreasing agent such as acetone, or a proprietary degreasing agent in order to remove all traces of oil, grease and dirt.

Low grade alcohol, gasoline (petrol) or paint thinners should never be used.

The strongest and most durable joints are obtained by either mechanically abrading or chemically etching ("pickling") the degreased surfaces. Abrading should be followed by a second degreasing treatment.

Mix ratio	Parts by weight	Parts by volume
Araldite® AV 1580	100	100
Araldite® HV 1580	100	100

For all but the most critical applications, equal parts by volume, obtained by rolling resin and hardener up into two balls of equal diameter, will give completely satisfactory results.

Mixing

Mix resin and hardener by rolling or kneading until the mixture is a pale uniform green. Mechanical mixing is recommended when preparing quantities greater than 500 grams.

Note Suitable polythene mitts are supplied with the putty. If contact with the skin is likely, it is essential to apply a barrier cream.

Usable life

The usable life of the mixed putty at 25°C is 12 - 25 minutes, depending on the bulk.

Note If the putty is allowed to stand in bulk, i.e. in one compact mass, its useable life will be short (ca 12 - 15 minutes). Usable life is prolonged by spreading out the putty into a thin layer- or by rolling it out into a cord-like length.

Application

Apply the putty with the fingers or with a roller or stiff knife. Smooth off while still tacky. A simple method to produce a gloss finish is to press a polythene sheet into the tacky surface, allow the putty to cure, and then to peel off the sheet.

Curing

Cure the putty for at least: 2 hours at 25°C
or 20 mins at 60°C
or 5 mins at 100°C

Curing schedule: 7 days at 25°C

Property	Average values
Density	2.0 Mg/m ³
Tensile strength (ISO527 Type 2)	19 MPa
Tensile modulus	13.5 GPa
Flexural strength (ISO178)	56 MPa
Flexural Modulus	12 GPa
Glass transition temperature	49°C
Shore D hardness	95
Coefficient of expansion ASTM D 69670	
from 0°C to + 30°C	18 x 10 ⁻⁶ linear/°C
from -196°C to + 18°C	12 x 10 ⁻⁶ linear/°C
from 4.2 K to 18°C	10 x 10 ⁻⁶ linear/°C

Cleaning

Knives, mixers etc, must be cleaned before the putty has hardened. Acetone, cellulose thinners and 2 - methoxypropanol are suitable cleaning agents. Supplier's literature should be consulted.

Note These solvents and their vapours are flammable-due precautions must be taken against possible fire risks. The use of 2 methoxypropanol as an alternative to acetone and cellulose thinners significantly reduces the flammability hazard. Adequate ventilation is essential where solvents of the type listed here are in use-in order to ensure that vapour levels are kept below the relevant threshold limit values. Furthermore, such solvents should not be allowed to come in contact with the skin. Measures to prevent contact are given under caution (see below).

Storage

The extruded sticks of Araldite® AV 1580 and Hardener HV 1580 should be stored in a dry place at 18 – 40°C. In these conditions the resin and hardener have an assigned shelf life of 3 years

Handling precautions**Caution**

Our products are generally quite harmless to handle provided that certain precautions normally taken when handling chemicals are observed. The uncured materials must not, for instance, be allowed to come into contact with foodstuffs or food utensils, and measures should be taken to prevent the uncured materials from coming in contact with the skin, since people with particularly sensitive skin may be affected. The wearing of impervious rubber or plastic gloves will normally be necessary; likewise the use of eye protection. The skin should be thoroughly cleansed at the end of each working period by washing with soap and warm water. The use of solvents is to be avoided. Disposable paper - not cloth towels - should be used to dry the skin. Adequate ventilation of the working area is recommended. These precautions are described in greater detail in the Material Safety Data sheets for the individual products and should be referred to for fuller information.

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