HUNTSMAN

Enriching lives through innovation

Advanced Materials

Araldite® 2012

Structural Adhesives

TECHNICAL DATA SHEET

Araldite® 2012
Two component epoxy paste adhesive

Key properties

- **Fast curing**
- **General purpose**
- **Low shrinkage**
- **Bonds a wide variety of materials**
- **Tough and resilient**

Description

Araldite 2012 is a rapid cure, multipurpose, two component, room temperature curing, high viscosity liquid adhesive of high strength and toughness.
It is suitable for bonding a wide variety of metals, ceramics, glass, rubbers, rigid plastics, and most other materials in common use. It is a versatile adhesive for the craftsman as well as most industrial applications.

Product data

Property	2012/A	2012/B	2012 (mixed)
Colour (visual)	opaque	pale yellow	pale yellow
Specific gravity	1.16-1.18	1.15-1.18	ca 1.18
Viscosity at 25°C (Pas)	25-45	20-40	typically 25-35
Pot Life (100 gm at 25°C)	-	-	5 - 8 minutes
Shelf life (2 - 40°C)	3 years	3 years	-

Processing

Pretreatment

The strength and durability of a bonded joint are dependant on proper pretreatment of the surfaces to be bonded.
At the very least, joint surfaces should be cleaned with a good degreasing agent such as acetone or other proprietary degreasing agents 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 2012/A	100	100
Araldite 2012/B	100	100

Araldite 2012 is available in cartridges incorporating mixers and can be applied as ready to use adhesive with the aid of the tool recommended by Huntsman Advanced Materials.

Application of adhesive

The resin/hardener mix may be applied manually or robotically to the pretreated and dry joint surfaces. Huntsman's technical support group can assist the user in the selection of an suitable application method as well as suggest a variety of reputable companies that manufacture and service adhesive dispensing equipment.
A layer of adhesive 0.05 to 0.10 mm thick will normally impart the greatest lap shear strength to the joint. Huntsman stresses that proper adhesive joint design is also critical for a durable bond. The joint components should be assembled and secured in a fixed position as soon as the adhesive has been applied.
For more detailed explanations regarding surface preparation and pretreatment, adhesive joint design, and the dual syringe dispensing system, visit www.araldite2000plus.com.

Equipment maintenance

All tools should be cleaned with hot water and soap before adhesives residues have had time to cure. The removal of cured residues is a difficult and time-consuming operation.
If solvents such as acetone are used for cleaning, operatives should take the appropriate precautions and, in addition, avoid skin and eye contact.

Times to minimum shear strength

Temperature	°C	10	15	23	40	60	100
Cure time to reach	hours	-	-	-	-	-	-
LSS > 1MPa	minutes	35	20	20	5	2	<1
Cure time to reach	hours	2	-	-	-	-	-
LSS > 10MPa	minutes	-	70	60	25	10	2

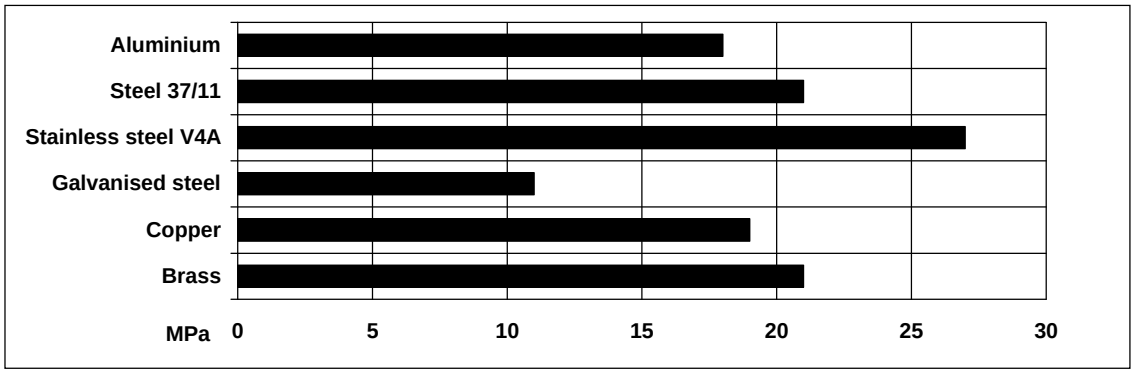
LSS = Lap shear strength.

Typical cured properties

Unless otherwise stated, the figures given below were all determined by testing standard specimens made by lap-jointing 114 x 25 x 1.6 mm strips of aluminium alloy. The joint area was 12.5 x 25 mm in each case.
The figures were determined with typical production batches using standard testing methods. They are provided solely as technical information and do not constitute a product specification.

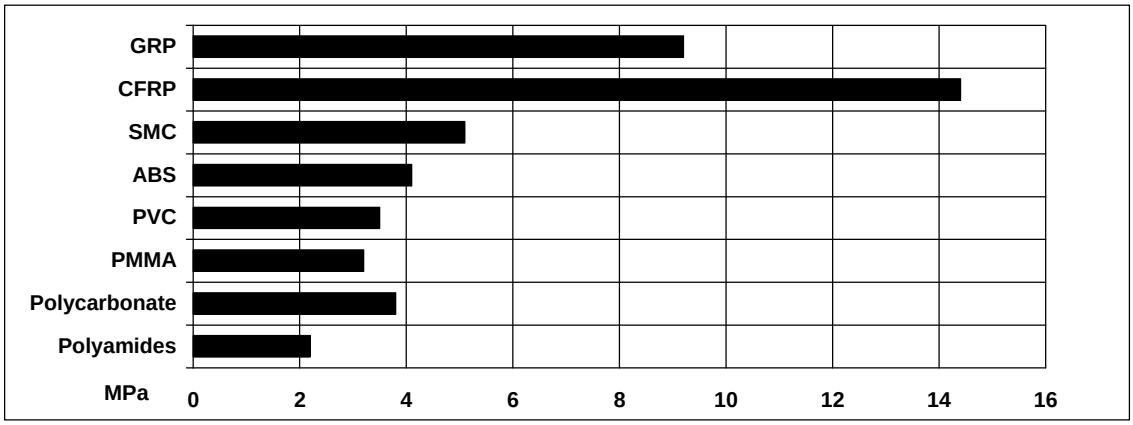
Average lap shear strengths of typical metal-to-metal joints (ISO 4587)

Cured for 16 hours at 40 °C and tested at 23°C
Pretreatment - Sand blasting



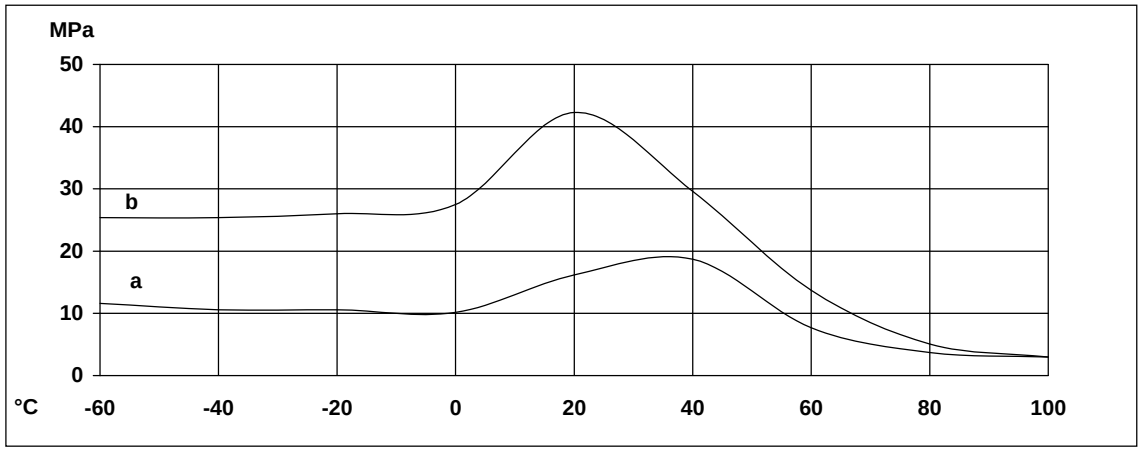
Average lap shear strengths of typical plastic-to-plastic joints (ISO 4587)

Cured for 16 hours at 40°C and tested at 23°C. Pretreatment - Lightly abrade and alcohol degrease.



Lap shear strength versus temperature (ISO 4587) (typical average values)

Cure: (a) = 7 days /23°C; (b) = 24 hours/23°C + 30 minutes/80°C

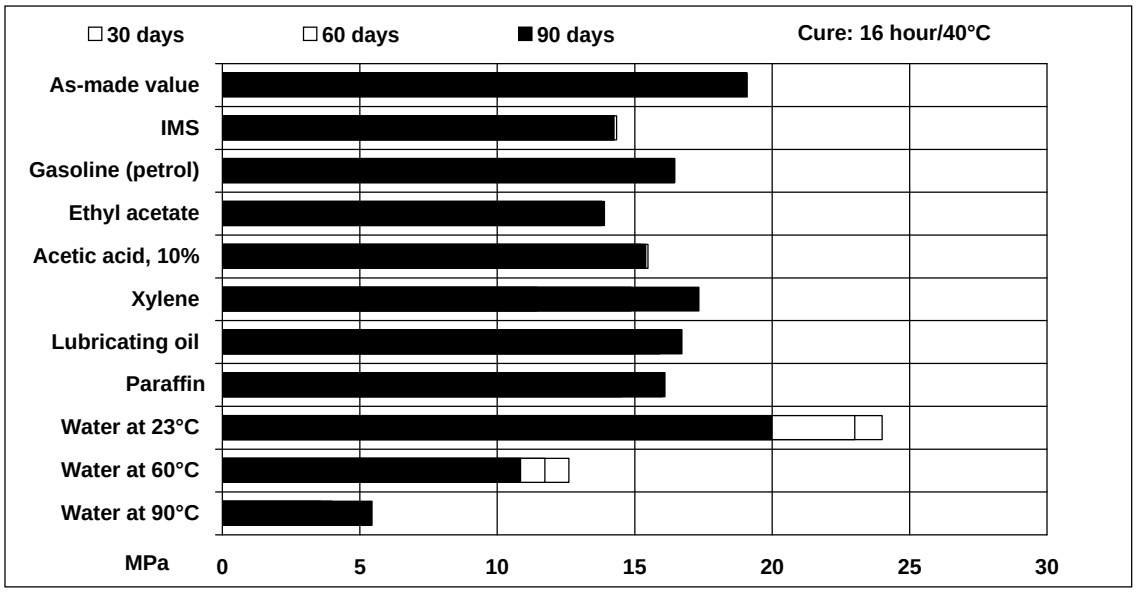


Roller peel test (ISO 4578)

Cure: 48 hours /20°C	3.5 N/mm
Cure: 16 hours /40°C	5.5 N/mm
Cure: 2 hours /80°C	5.5 N/mm

Flexural Properties (ISO 178) Cure 16 hours/ 40ºC tested at 23ºC	
Flexural Strength	46.0 MPa
Flexural Modulus	1654.4 MPa

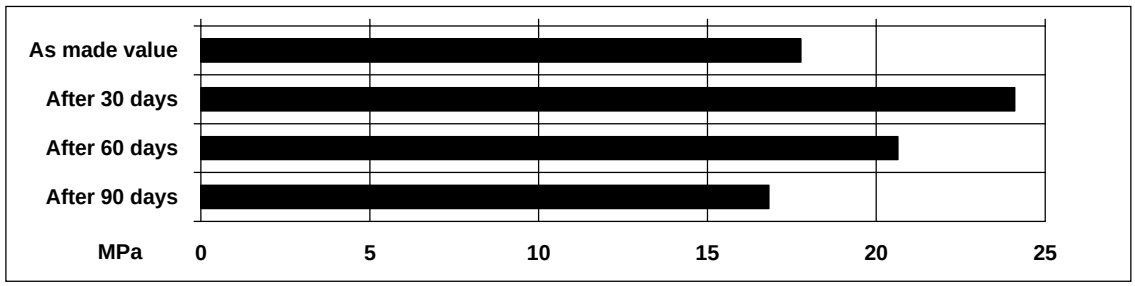
Lap shear strength versus immersion in various media (typical average values)



Lap shear strength versus tropical weathering

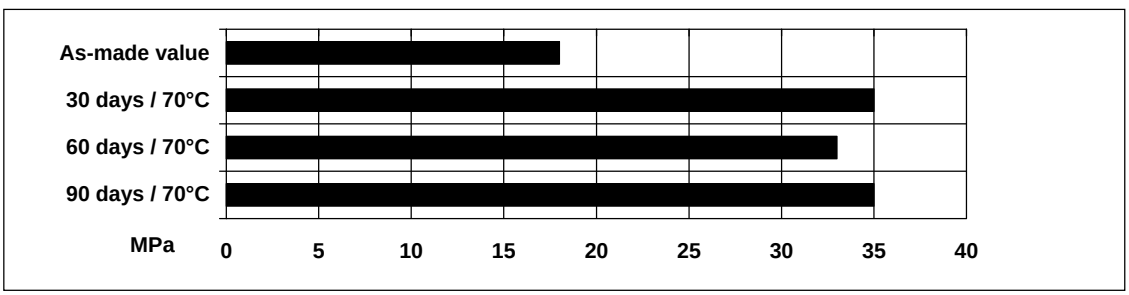
(40/92, DIN 50015; typical average values)

Cure: 16 hours/40°C; Test: at 23°C



Lap shear strength versus heat ageing

Cure:16 hours/40°C



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Storage

Araldite 2012/A and Araldite 2012/B may be stored for up to 3 years at room temperature provided the components are stored in sealed containers. The expiry date is indicated on the label.

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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All recommendations for the use of our products, whether given by us in writing, verbally, or to be implied from the results of tests carried out by us, are based on the current state of our knowledge. Notwithstanding any such recommendations the Buyer shall remain responsible for satisfying himself that the products as supplied by us are suitable for his intended process or purpose. Since we cannot control the application, use or processing of the products, we cannot accept responsibility therefor. The Buyer shall ensure that the intended use of the products will not infringe any third party's intellectual property rights. We warrant that our products are free from defects in accordance with and subject to our general conditions of supply.

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