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Advanced Materials

Araldite® 2022

Structural Adhesives

TECHNICAL DATA SHEET

Araldite® 2022
Two component toughened methacrylate adhesive system

Key properties

- **Good sanding properties**
- **Ideal for bonding thermoplastics**
- **Excellent resistance to petrol and oils**
- **Tolerant to "less than ideal" pretreatment**
- **Gap filling to 4mm**

Description

Araldite 2022 is a two component, room temperature curing, methacrylate adhesive for fast assembly operations on a wide range of substrates including those which can be "difficult to bond".

Product data

Properties	2022/A	2022/B	2022 (mixed)
Colour (visual)	Off white	Yellow	Beige
Specific gravity	1.03	0.97	1.00
Viscosity at 25°C (Pas)	ca. 70	ca. 45	ca. 60
Pot Life (100 gm at 25°C)	-	-	ca. 10 minutes
Flash point (°C)	10	10	-

Processing

Pretreatment

The strength and durability of a bonded joint are dependant on proper pretreatment of the surfaces to be bonded, however the methacrylate adhesives can be used effectively with little surface preparation.

Ideally joint surfaces should be cleaned with a good degreasing agent such as acetone, iso-propanol (for plastics) 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.

Mix ratio	Parts by weight	Parts by volume
Araldite 2022/A	100	100
Araldite 2022/B	94	100

Araldite 2022 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

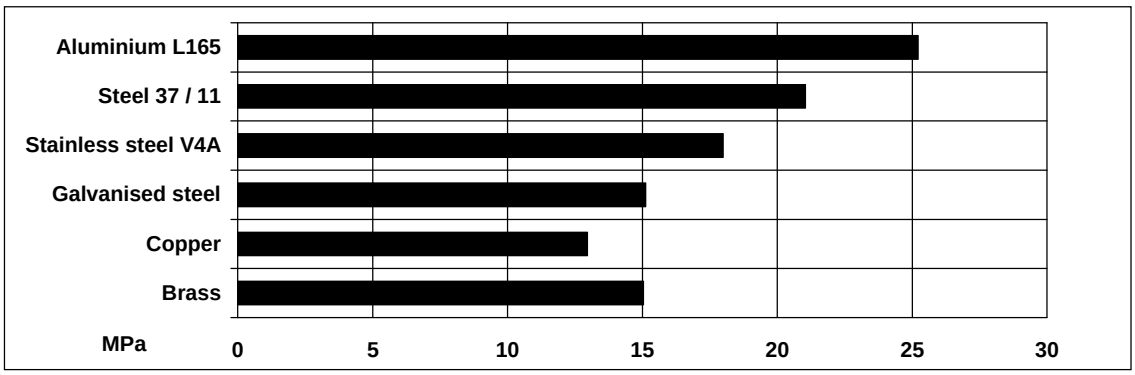
Temperature	°C	10	15	23	40
Cure time to reach	hours	-	-	-	-
LSS > 1MPa	minutes	60	25	18	15
Cure time to reach	hours	-	-	-	-
LSS > 10MPa	Minutes	90	45	30	20

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.

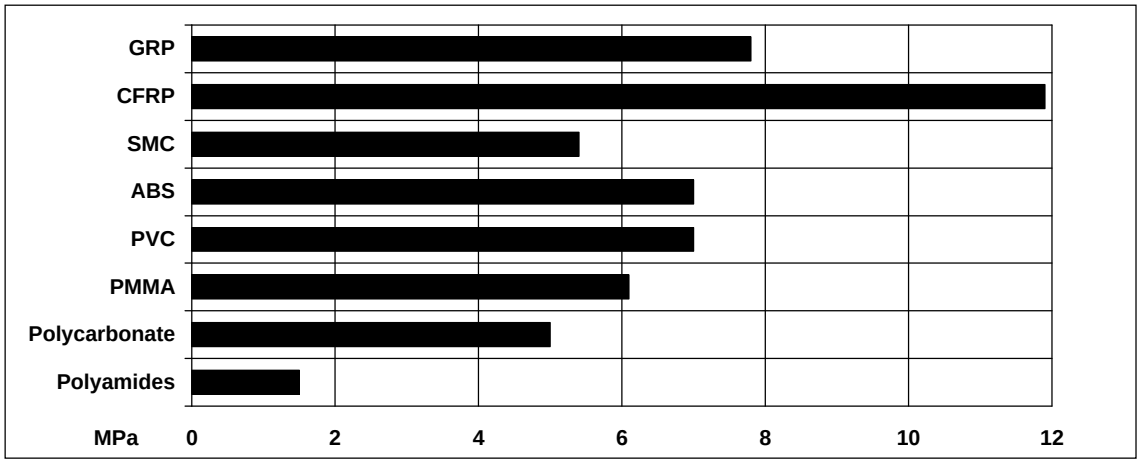
Average lap shear strengths of typical metal-to-metal joints (ISO 4587)

Cured for 7days at 23°C and tested at 23°C
Pretreatment - Sand blasting



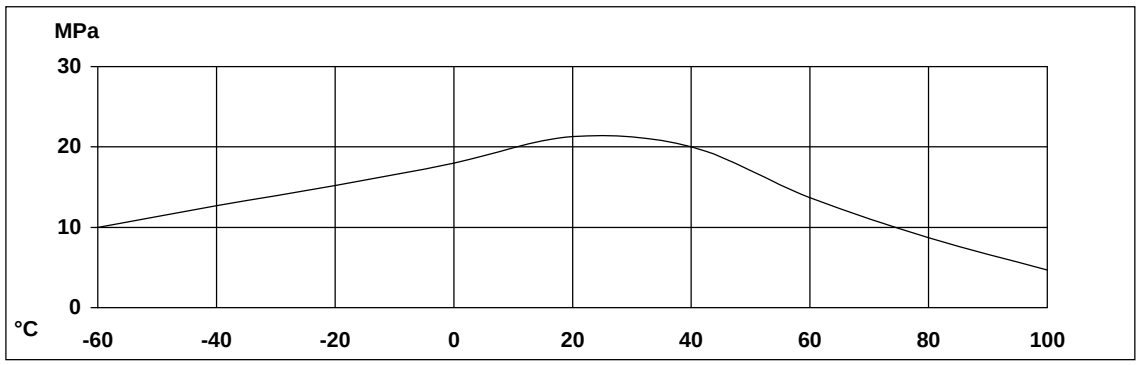
Average lap shear strengths of typical plastic-to-plastic joints (ISO 4587)

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: = 7 days at 23°C



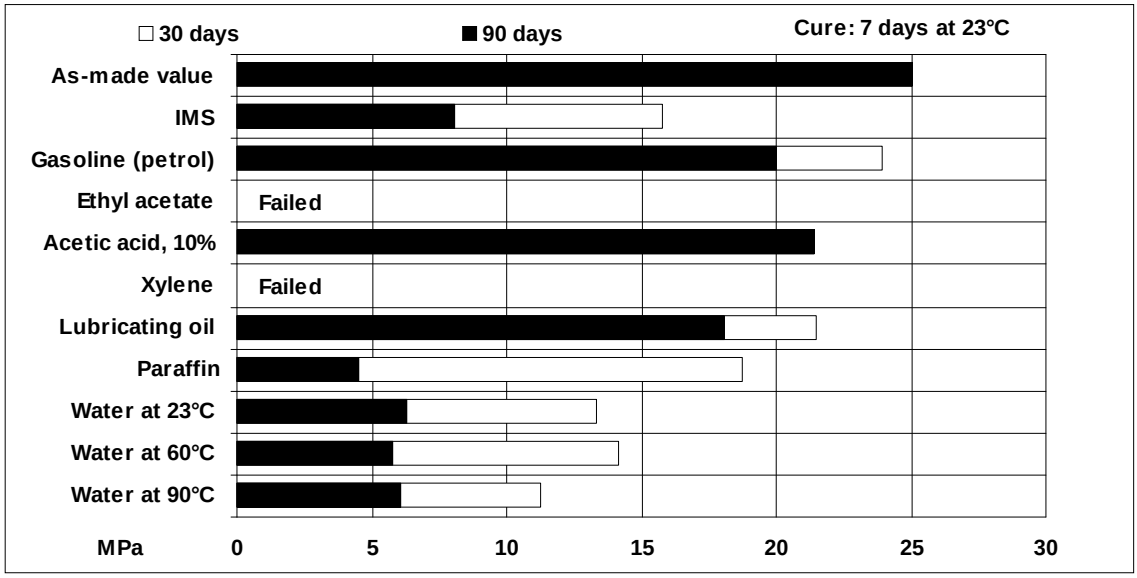
Roller peel test (ISO 4578)	4N/mm
Shore hardness:	D75
Elongation at break:	50 - 75%

Flexural Properties (ISO 178) Cure 1 day/ 23ºC tested at 23ºC

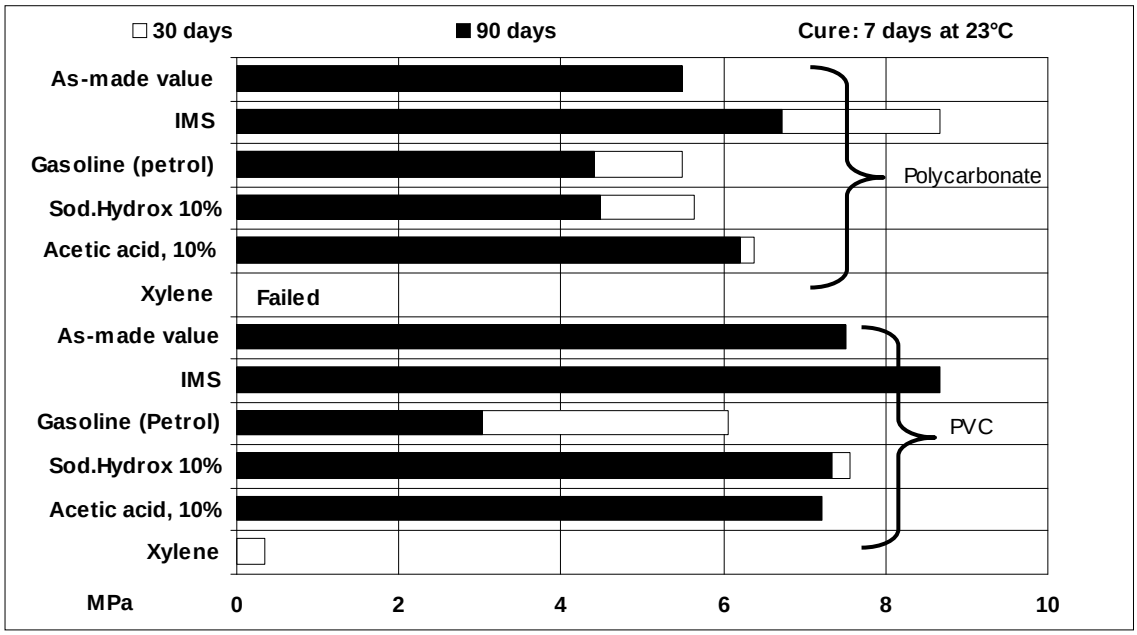
Flexural Strength	43 MPa
Flexural Modulus	1692 MPa

Lap shear strength versus immersion in various media at 23°C (typical average values).

Substrate – aluminium

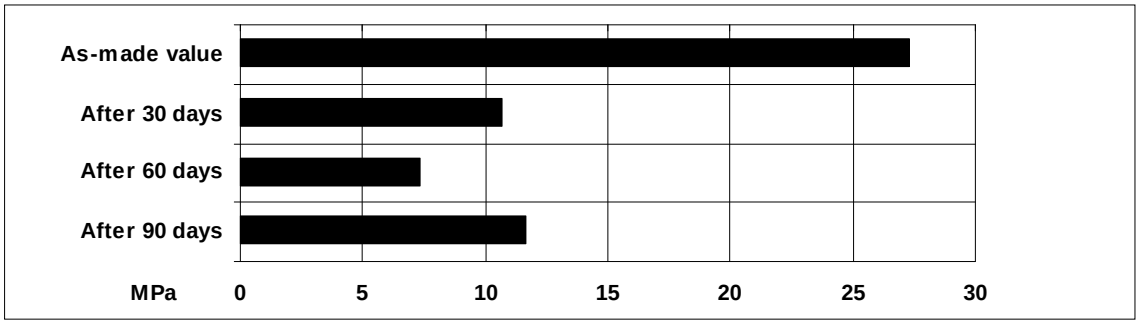


Plastic substrates – Polycarbonate and PVC



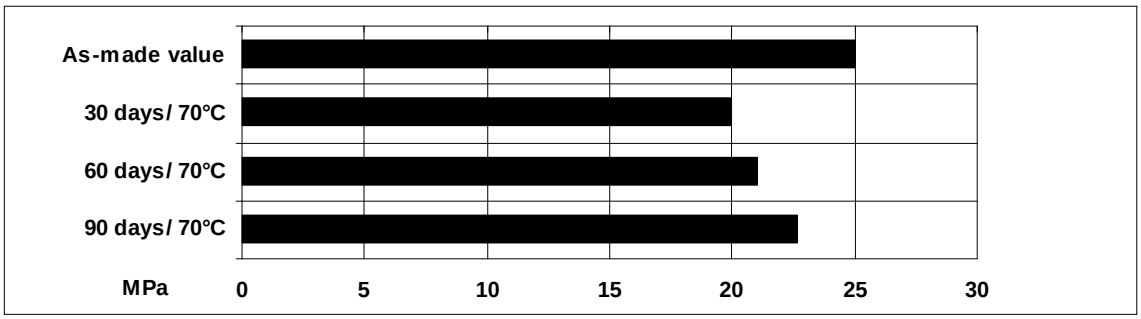
Lap shear strength versus tropical weathering (40/92, DIN 50015: typical average values)

Cure: 7 days at 23°C



Lap strength versus heat ageing

Cure: 7 days at 23°C



Thermal cycling

100 cycles of 6 hour duration from -30°C to 70°C: 19 MPa
Test carried out using a load cycle frequency of 90 Hz.

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Storage

Araldite 2022/A and Araldite 2022/B may be stored for up to 18 months at 2 - 8°C provided the components are stored in sealed containers. When stored at 15 - 25°C the life is a maximum of 12 months. The expiry date assuming 2 - 8°C is indicated on the packaging.

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 therefore. 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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