

Araldite® AV 4738 / Hardener HV 4739

Product Description

Araldite® AV 4738 / Hardener HV 4739 is a two component, ambient temperature curing paste adhesive, which after post-curing either at application or in service, will give bonds with temperature resistance up to 150°C and excellent resistance to common chemicals. It is suitable for bonding a range of metals and polymeric substances such as GRE, GRP, ABS and SMC.

Features

- Temperature resistant to 150°C
- Excellent resistance to most common chemicals
- Non flowing paste for ease of application
- Gap filling
- Bonds metals and reinforced composites such as GRP and GRE
- Good performance after cure at ambient temperature
- Application filed for KIWA potable water approval
- Properties further enhanced by post-curing

Typical Properties*

| Property | Araldite® AV 4738 | Hardener HV 4739 | Mixed System |
|------------------------------|-------------------|------------------|--------------|
| Appearance | Light grey paste | Pale grey paste | Grey paste |
| Density, g/cm ³ | 1.45-1.55 | 1.75-1.85 | ~1.6 |
| Viscosity at 25°C, cP | 500-800 Pa-s | 34-64 Pa-s | -- |
| Pot life at 25°C, 100 g, min | -- | -- | 40-50 |

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

Processing

Mix Ratio

| Product | Parts by weight | Parts by volume |
|-------------------|-----------------|-----------------|
| Araldite® AV 4738 | 100 | 100 |
| Hardener HV 4739 | 25-27.5 | 22-23 |

Application of adhesive

The resin/hardener mix is applied directly or with a spatula, to the pretreated and dry joint surfaces. The joint components should be assembled and clamped as soon as the adhesive has been applied. An even contact pressure throughout the joint area will ensure optimum cure.

Mechanical Processing

Specialist firms have developed metering, mixing and spreading equipment that enables the bulk processing of adhesive. We will be pleased to advise customers on the choice of equipment for their particular needs.

Equipment Maintenance

All tools should be cleaned 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.

Cure times to reach minimum shear strength

| Temperature, °F (°C) | | 59 (15) | 77 (25) | 104 (40) | 140 (60) |
|--|---------|---------|---------|----------|----------|
| Cure time to reach LSS* > 145 psi (1 MPa) | hours | 7 | 3 | 1 | - |
| | minutes | - | - | - | 15 |
| Cure time to reach LSS > 1450 psi (10 MPa) | hours | 15 | 4 | 1.5 | - |
| | minutes | - | - | - | 30 |

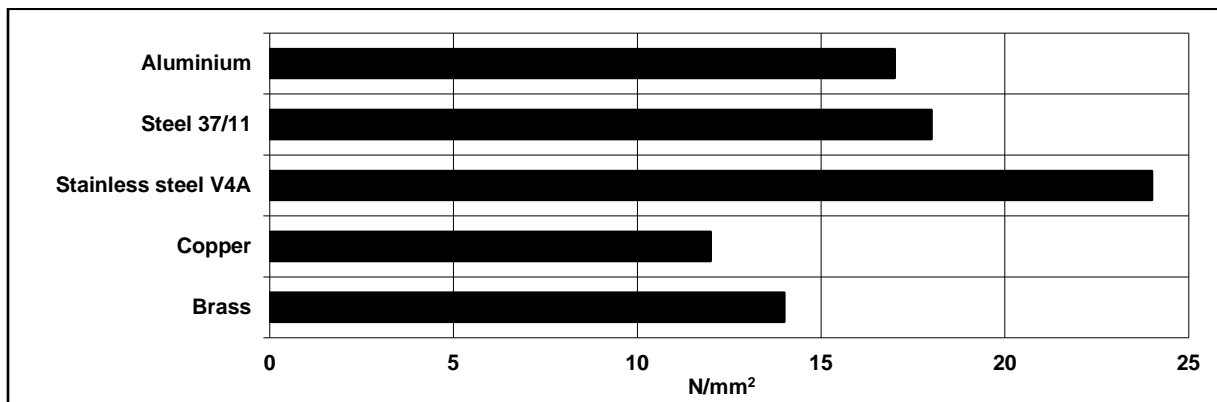
*LSS = Lap shear strength

Typical Physical Properties

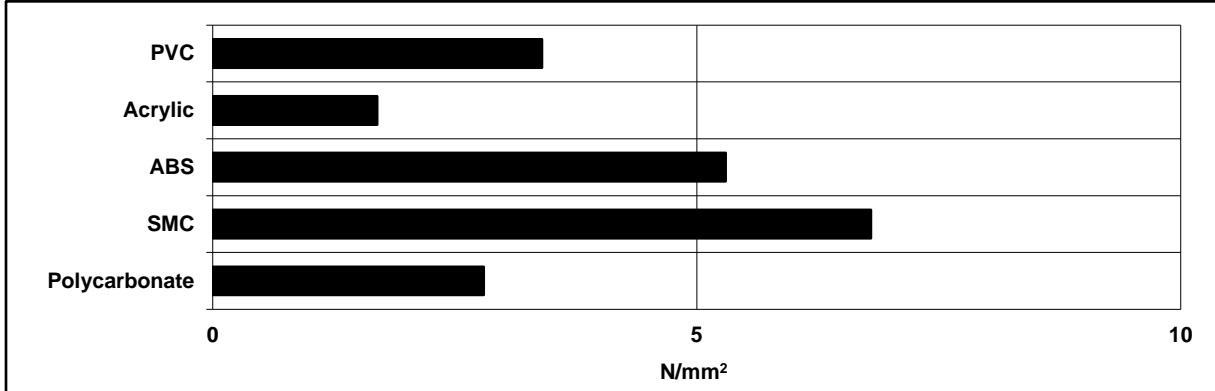
Unless otherwise stated, the figures given below were all determined by testing standard specimens made by lap-jointing 170 x 25 x 1.5 mm strips of aluminum alloy. The overlap was 12.5 x 25 mm in each case. The figures were determined with typical production batches using standard testing methods, and 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) (typical average values)

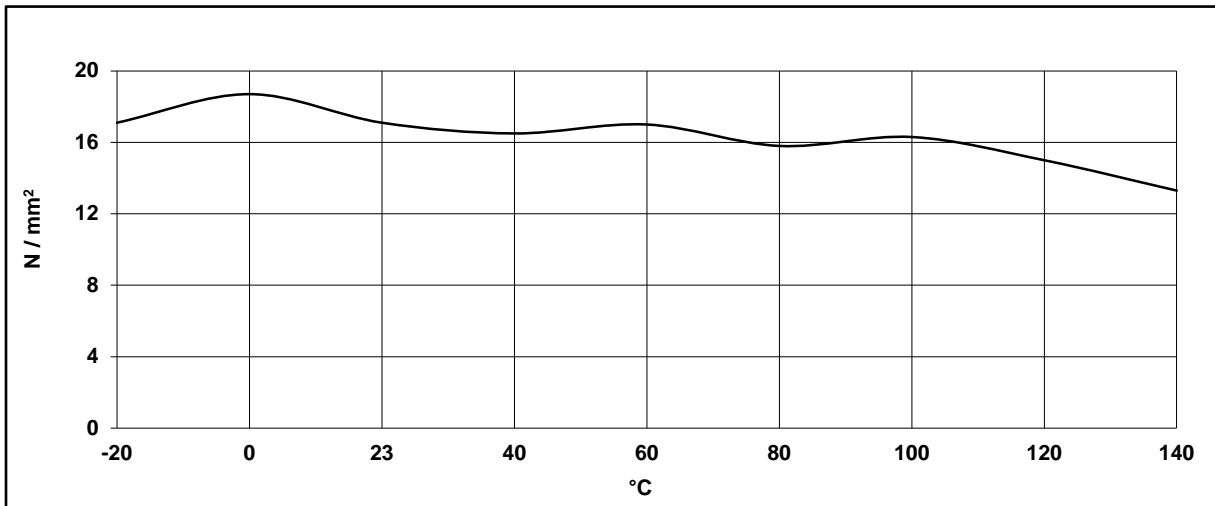
Cured for 24 hours at 23°C + 4 hours at 120°C and tested at 23°C. Pretreatment - Sand blasting



Average lap shear strengths of typical plastic-to-plastic joints (ISO 4587) (typical average values)
Cured for 24 hours at 23°C + 4 hours at 80°C. Tested at 23°C. Pretreatment - Lightly abrade and alcohol degrease.



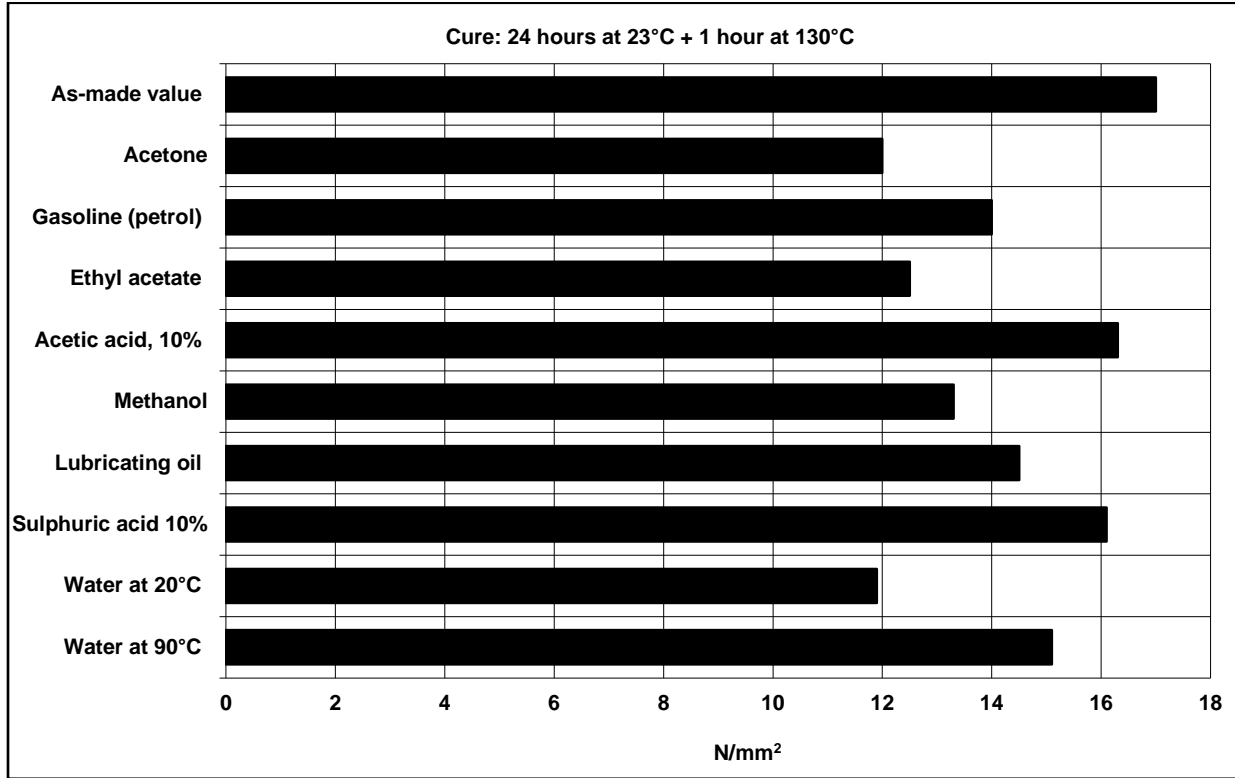
Lap shear strength versus temperature (ISO 4587) (typical average values) Cure: 24 hours at 23°C + 4 hours at 120°C.



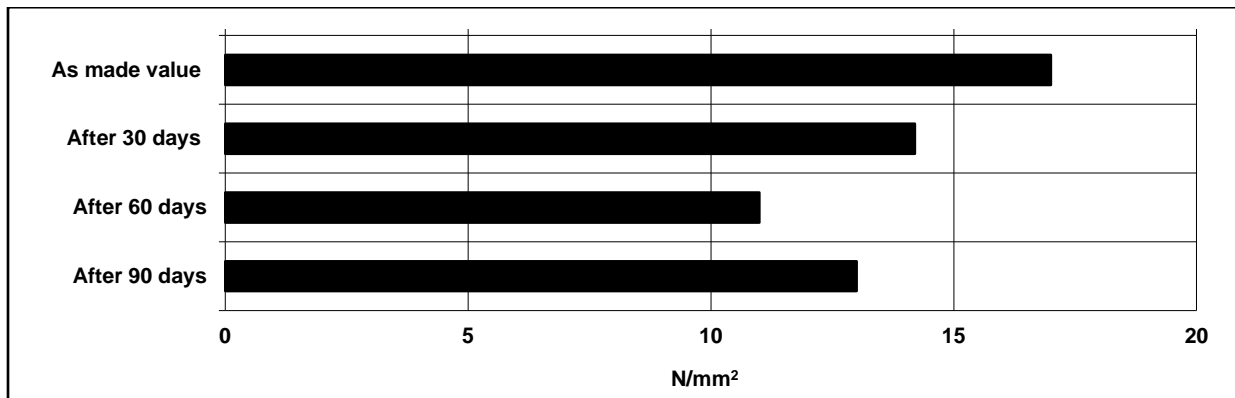
Roller peel test (ISO 4578) (typical average values). Substrate: Aluminum alloy

| Cure Schedule | Value |
|--|----------|
| Cured 7 days at 23°C | 2.6 N/mm |
| Cured 7 days at 23°C + 1 hour at 80°C | 4.6 N/mm |
| Cured 7 days at 23°C + 1 hour at 125°C | 5.6 N/mm |

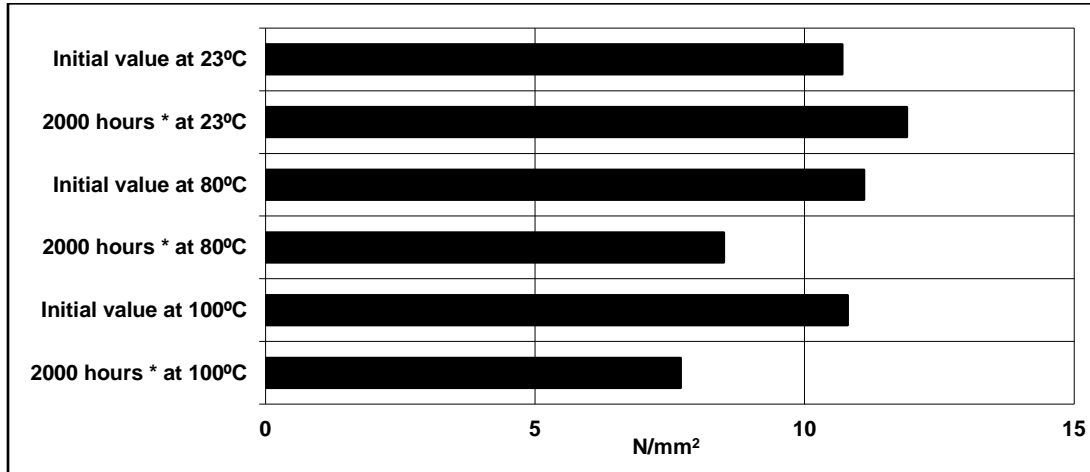
Lap shear strength versus immersion in various media (typical average values) Unless otherwise stated, L.S.S. was determined after immersion for 90 days at 23°C



Lap shear strength versus tropical weathering (typical average values) (40/92, DIN 50015; typical average values) Cure: 24 hours at 23°C + 4 hours at 120°C and tested at 23°C



Lap shear strength vs. water immersion on GRE (typical average values) Cure: 7 days at 23°C + 4 hours at 120°C – overlap 25mm x 15mm



Storage

Araldite® AV 4738 / Hardener HV 4739 should be stored in a dry place, in the original sealed containers, at temperatures between 2°C and 40°C (36°F and 104°F). Under these storage conditions, the product has a shelf life of **3 years** (from date of manufacture). The product should not be exposed to direct sunlight.

If stored below 60°F, the adhesive should be brought to 60°F - 77°F and conditioned at this temperature for some time prior to use.

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

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