

Transport: Keep the containers securely closed. Stow the containers away from food, food containers and clothing. **Storage:** Store the containers securely closed in a cool dry place. Store away from food and food containers. If leakage or spillage occurs: Clean up with absorbent material (sand, sawdust, cotton waste, paper towels, etc.). Remove the contaminated cleaning material to a safe place pending disposal. The contaminated material should be disposed of in accordance with DISPOSAL below. The affected area should be washed with detergent solution, preferably hot. Rinse with water. **Handling Precautions:** The safe handling of Araldite 2004 Components A and B, and the uncured Araldite 2004A/B adhesive, requires taking certain precautions normal for the handling of chemicals. Provided that direct contact is avoided and good ventilation maintained, people working with the Araldite materials should remain free of any skin, eye or respiratory irritation. The precautionary measures given overleaf are designed to ensure maximum safety in handling. They need to be observed conscientiously. **General:** Handling techniques must ensure that no uncured epoxy material comes in contact with the eyes or skin. Operators should wear gloves, overalls and eye protection. If the products accidentally come in contact with the eyes or skin, immediate treatment should be carried out as detailed under FIRST-AID PROCEDURES at the end of this sheet. The work area must be adequately ventilated. Eating, drinking and smoking in the work area must be prohibited. Cleanliness and tidiness in working are of the utmost importance. Adequate facilities for washing are essential. They should be provided at or very near the place of work so that accidental contamination can at once be removed from the skin. Washing accommodation should be kept clean and be provided with a plentiful supply of clean running water, soap, skin creams and disposable towels ideally taps should be foot operated. Benches should have impervious surfaces and whenever practical, be protected by a disposable cover – e.g. paper, aluminium foil or plastics – for replacement when contaminated. Waste bins should be equipped with lids and replaceable liners. The bins should be freely available and all waste materials deposited directly into them. The waste materials should be disposed of in accordance with DISPOSAL below. Mixing and application equipment must be cleaned before the epoxy materials have cured. The handles of tools and machine controls should likewise be kept clean. Acetone, cellulose thinners and 1-methoxy-2-propanol, are suitable cleaning solvents. Contaminated solvents should be disposed of in accordance with DISPOSAL below. To minimise cleaning requirements covered disposable containers should be used for mixing and delivery. To avoid congestion, containers of epoxy materials should be kept as far as possible in a clearly designated area. Particular care should be paid to good housekeeping in order to minimise the incident of spillage and contamination. If contamination does occur, the affected area must be cleaned up immediately. Any spillage of epoxy material must be immediately taken up and the area decontaminated as required under STORAGE above. Container lids should always be replaced after use. Careful pouring is needed to ensure that drips do not obscure and instructions on the container. **Protective Clothing:** Operators should be provided with protective clothing and equipped to minimise personal contact with uncured materials. Operators should wear: Gloves, Overalls and heavy-duty aprons. **Disposal:** Waste epoxy material in the uncured state must be disposed of in accordance with the requirements of Part 1 of *The Control of Pollution Act 1974*.

All information is based on results gained from experience and tests and is believed to be accurate but is given without acceptance of liability for loss or damage attributable to reliance thereon as conditions of use outside our control. Users should always carry out sufficient tests to establish the suitability of any products for their intended applications. No statements shall be incorporated in any contract unless expressly agreed in writing nor construed as recommending the use of any product in conflict of any patent. All goods are supplied subject to Huntsmans General Conditions of Sale.

Huntsman

Duxford, Cambridge, CB2 4QA Tel (01223) 832121 Fax (01223) 493322

ARALDITE 2004

Heat Resistant two-part epoxy paste

Instructions for use and Product Safety Information

Uses

The bonding of metals, ceramics, glass, rubbers, rigid plastics and most other materials in common use.

Features

Easy to mix and apply Gap filling, non-slump 6-100°C curing range. Negligible shrinkage, heat resistant to 120°C, resistant to water and to a wide range of chemicals.

Adhesive as supplied

Resin AV138M - Beige-coloured paste
Hardener HV998 - Grey-coloured paste

Mixing prior to use

Parts (by weight or by volume)

Resin	AV138M	100
Hardener	HV998	40

Mix thoroughly, using a clean spatula, pallet knife or wooden blade.

Note: Araldite 2004 is supplied in 0.5kg and 6.0kg packs. The contents of the 0.5kg pack are pre-weighed so that resin and hardener are in the correct proportion for mixing. If less than 0.5kg of adhesive is required for the work in hand, then the required quantities of resin and hardener must be measured out.

Useable life of mixture 30 minutes at 25°C

Useable life is dependent on temperature and bulk. The 30 minute life is reduced if the temperature is above 25°C or if more than 250grams is allowed to stand in one compact mass - e.g. in a mixing cup or similar 'bulk' container.

Apply the mixed adhesive by spatula (or similar blade) to the prepared clean joint surfaces. A bond-line of medium thickness requires a coverage rate of ca 300 grams/metre².

Curing schedule for the assembled joint

High strengths are developed by the following minimum cures.

Time	Temperature
3 days	5°C
24hrs	10°C
8hrs	23°C
2hrs	40°C
15mins	80°C
10mins	100°C

Surface pre-treatment

The surface to be bonded must be clean and dry. They may for example be degreased with a solvent such as acetone. For optimum results specialised chemical treatment or mechanical abrasion is recommended. A good general-purpose method is to degrease, abrade with medium/fine grit abrasive paper (or grit blast) and degrease again. Further information on mechanical and chemical pre-treatments for a wide range of substrates is available on request.

Note: Acetone and its vapour are highly flammable - due precaution must be taken against all fire risks. Good ventilation is consequently necessary where the solvent is in use. Furthermore, the solvent removes the natural grease from the skin. Contact with the hands should be avoided as far as possible. Measures to prevent contact are given overleaf under Safe Handling of Araldite 2004.

Shear strengths

Average shear strengths of lap joints cured for 48hrs at 23°C and tested at 23°C to BS5350: Part C5: 1976.

Pre-treatment: degrease with acetone, abrade with medium grit abrasive paper, degrease again with acetone.

Joint Material	Average shear strength	
	MPa	lbf/in ²
Aluminium alloy	17	2460
Mild steel	21	3060
Stainless steel	20	2900
Galvanised mild steel *	18	2600
Copper	18	2600
Brass	16	2300

- Degreased only (not abraded)

Treatments to break down fully cured joints

Heat the joint to ca 180°C and prise it apart. Where heating is not possible, commercially available paint strippers will soften the adhesive with time.

Note: Paint strippers contain aggressive chemicals. Manufacturers instructions must be carefully followed whenever these solutions are handled.

Storage: Araldite 2004 has a storage life of at least 3 years provided that it is kept in a cool dry place. The hardener is hygroscopic; it deteriorates if allowed to absorb moisture. The containers of both the resin and hardener should be kept securely closed when not in use.

Araldite 2004 A and Hardener 2004B are also available in bulk quantities against product references Araldite AV138M (30kg containers) and Hardener HV998 (12kg containers).

Also available in the 2000 range

Araldite 2001 Multi - purpose two-pack Epoxy paste
Araldite 2002 Fast setting multi-purpose two-pack epoxy paste
Araldite 2003 Easy to spread two-pack epoxy liquid
Araldite 2005 High shear and peel strength, two-pack epoxy paste
Araldite 2007 High shear and peel strength, heat curing, one-pack epoxy paste

Trade distributors, in addition to the Huntsman Customer Service Centre at Duxford, will be pleased to assist users of 2000 range adhesives with any information required.

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Statutory requirements

Araldite 2004 Component A and Component B are regulated by *The Control of Substances Hazardous to Health Regulations 1988* by virtue of their classification under *The Classification, Packaging and Labelling of Dangerous Substances regulations 1984*. Classification requirements under the CPL Regulations

Product Ref.	Classification as supplied	Classification for conveyance by road	Substance identification no.
Araldite 2004A	Irritant	Not classified	None (requirement does not apply)
Araldite 2004B		Environmentally hazardous	UN3084

Araldite 2004 Packs As Component A and Component B are not classified for conveyance by road, the Packs are likewise not classified as dangerous by those requirements of the CPL Regulations which relate to road transport.

Control measures requirement under the COSHH Regulations

The COSHH Regulations require that, where dangerous substances are in use, control measures are set up which will secure as far as possible the prevention of exposure. The information given in this sheet is intended to assist employers to establish such control. First importance must be given to process, engineering and operational measures such as remote handling systems, local exhaust ventilation, the reduction of the number of people who might be at risk of exposure. Personal protective equipment should be used to reinforce such measures where otherwise they may fail to achieve adequate control.

Where the control measures are adequate, it is nevertheless good practice to use personal protective equipment - such as overalls, safety spectacles, and rubber or plastic gloves - as an additional precaution.

Scope of the safety procedure given in this sheet

A statement of the products' use to which the information set out overleaf relates is a requirement of Section 6(10) (as amended) of *The Health and Safety at Work etc Act 1974*.

Araldite 2004 Component A and Araldite 2004 Component B are manufactured for use with each other as an adhesive for structural materials. The applicability of the safety procedures to other uses should be referred to the Divisional Products Safety Department, Huntsman, Duxford.