

Advanced Materials**Araldite® 71****Structural Adhesives****TECHNICAL DATA****Brake and Clutch Bonding****ARALDITE® 71****Brake bonding adhesive****Key properties**

- Vinyl-phenolic basis
- Suitable for use as an adhesive for brake shoes
- Can be applied by extrusion or roller coating
- Formerly known as Redux 71

Description

Araldite® 71 is a thixotropic, modified phenolic resin, designed specially for application as a friction lining adhesive. Araldite® 71 is used with primer Araldite® 70 in shoe brake bonding operation.

Typical product data

Property	Typical Data
Appearance* (A112)	Dark brown paste
Viscosity at 25 °C	Thixotropic
Solids Content* (A27)	47 - 51%
Primary solvents	Ethanol
Specific Gravity	ca 1.00
Flash point	Ca 13 °C

** Specified data are on a regular basis analysed. Data which is described in this document as 'typical' is not analysed on a regular basis and is given for information purposes only. Data values are not guaranteed or warranted unless if specifically mentioned.*

Processing**Pretreatment**

The strength and durability of a bonded joint are dependent on proper pre-treatment of the surfaces to be bonded. Steel parts should be prepared by degreasing, followed by shot-blasting to a clean uniform matt surface. The friction material should be free of any loose materials and traces of grease. If metals other than steel are to be used for the process, then these should be pre-treated in an appropriate way. More detailed information on surface pre-treatments is given in our surface treatment guide, available under www.aralditeadhesives.com.

Application of product

Araldite® 71 is suitable for application by extrusion or roller coating. When used as the primary adhesive, it is suggested that the product is coated onto both bonding surfaces, or that Araldite® 71 is applied to the friction lining material, and a dip-coat of Araldite® 70 is applied to the metal shoe. A dried coating weight of 150 - 200gsm is typical.

Curing the adhesive

Araldite® 71 requires drying free of solvent at 20°C – 70°C, followed by a thermal cure at 150°C – 230°C.

Solvent drying should be in a well-ventilated area, allowing at least 8 – 10 hours at 20°C or 25 minutes at 70°C. The dried parts may then be stored for several weeks before subsequent bonding operations, or may be bonded immediately.

During the bonding operation the coated lining and brake parts are positioned together under a pressure of 0.35 - 1.0 MPa and heated to fuse and cure the adhesive layer. The pressure must be maintained in order to prevent bubbling of the adhesive as volatile products are released during the curing. Optimal curing conditions vary from 30 minutes at 150°C 15 minutes at 165°C to 5 minutes at 200°C. Fast curing by induction heating at temperatures up to 230°C are possible but prolonged heating must be avoided at these temperatures, otherwise the adhesive performance may be adversely affected.

Typical properties of the cured adhesive

The data quoted below is for guidance and does not constitute a specification.

- In tests on common friction lining materials (both of the older asbestos based types and the modern non asbestos types) Araldite® 71 has been shown to give shear test failures in the friction materials, both at 20°C and 200°C. Typical failure values on a 25mm x25mm area are >5 MPa at 20°C and 1.6 - 3.5 MPa at 200°C depending on friction material type.
- Steel / steel lap shear test joints (overlap 25mm width x 15mm length) dip primed with Araldite® 70, and bonded with Araldite® 71, gives values greater than 7MPa at 23°C, and values greater than 4 MPa at 200°C.

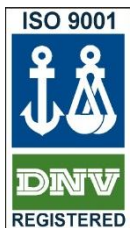
Storage

Araldite® 71 has an assigned shelf life of 18 months when stored between 6 and 28°C in original unopened containers. Storage at higher temperatures will reduce the shelf life. For example, if storage is at 40°C, it is recommended that the remaining life, at that point, be reduced by one quarter. The expiry date and standard storage conditions are quoted on the product 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.



Huntsman Advanced Materials

(Switzerland) GmbH
Klybeckstrasse 200
4057 Basel
Switzerland

Tel: +41 (0)61 299 11 11
Fax: +41 (0)61 299 11 12

www.aralditeadhesives.com
Email: advanced_materials@huntsman.com

Huntsman Advanced Materials warrants only that its products meet the specifications agreed with the user. Specified data are analysed on a regular basis. Data which is described in this document as 'typical' or 'guideline' is not analysed on a regular basis and is given for information purposes only. Data values are not guaranteed or warranted unless if specifically mentioned.

The manufacture of materials is the subject of granted patents and patent applications; freedom to operate patented processes is not implied by this publication.

While all the information and recommendations in this publication are, to the best of Huntsman Advanced Material's knowledge, information and belief, accurate at the date of publication, **nothing herein is to be construed as a warranty, whether express or implied, including but without limitation, as to merchantability or fitness for a particular purpose. In all cases, it is the responsibility of the user to determine the applicability of such information and recommendations and the suitability of any product for its own particular purpose.**

The behaviour of the products referred to in this publication in manufacturing processes and their suitability in any given end-use environment are dependent upon various conditions such as chemical compatibility, temperature, and other variables, which are not known to Huntsman Advanced Materials. It is the responsibility of the user to evaluate the manufacturing circumstances and the final product under actual end-use requirements and to adequately advise and warn purchasers and users thereof.

Products may be toxic and require special precautions in handling. The user should obtain Safety Data Sheets from Huntsman Advanced Materials containing detailed information on toxicity, together with proper shipping, handling and storage procedures, and should comply with all applicable safety and environmental standards.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent on manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

Except where explicitly agreed otherwise, the sale of products referred to in this publication is subject to the general terms and conditions of sale of Huntsman Advanced Materials LLC or of its affiliated companies including without limitation, Huntsman Advanced Materials (Europe) BVBA, Huntsman Advanced Materials Americas Inc., Huntsman Advanced Materials (UAE) FZE, Huntsman Advanced Materials (Guangdong) Company Limited, and Huntsman Advanced Materials (Hong Kong) Ltd.

Huntsman Advanced Materials is an international business unit of Huntsman Corporation. Huntsman Advanced Materials trades through Huntsman affiliated companies in different countries including but not limited to Huntsman Advanced Materials LLC in the USA and Huntsman Advanced Materials (Europe) BVBA in Europe.

All trademarks mentioned are either property of or licensed to Huntsman Corporation or an affiliate thereof in one or more, but not all, countries.

Copyright © 2014 Huntsman Corporation or an affiliate thereof. All rights reserved