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Advanced Materials

Araldite® 1570 FST A/B

AEROSPACE ADHESIVES

Key properties

- **Two component epoxy adhesive**
- **Self extinguishing adhesive : FAR/JAR/CS 25, App. F, Part 1 and 5**
- **Room temperature curing**

Description

Araldite® 1570 FST A/B is a two-component epoxy adhesive containing no Halogen, which cures at room temperature.
This product is designed for aerospace applications which require flame retardant properties. Its prelimenary application was the bonding of polyethylene foam to phenolic glass reinforced plastic in cargo areas.
Araldite® 1570 FST A/B is qualified to AIMS 10-04-006 and meets the requirements of FAR/JAR/CS 25 App. F, part 1 and 5, AITM 2.0007 and AITM 3.0005.

Typical product data

Property	Araldite® 1570 FST A	Araldite® 1570 FST B	Mix
Colour (visual) Appearance	Black Thixotropic paste	White Thixotropic paste	Dark grey Thixotropic paste
Specific gravity	1.3 – 1.5	1.1 – 1.3	1.2 – 1.4
Viscosity at 25°C	100 - 200	250 - 350	
Pot life (100 gm at 25°C)	-	-	Ca. 140 min
Shelf life at 2-8°C	1 year	1 year	

Processing

Pretreatment

The strength and durability of a bonded joint are dependent on proper treatment of the surfaces to be bonded. At the very least, joint surfaces should be cleaned with a good degreasing agent such as acetone, isopropanol (for plastics) or other proprietary degreasing agents in order to remove all traces of oil, grease and dirt.

Alcohol, gasoline (petrol) or paint thinners should never be used.
The strongest and most durable joints are obtained by either mechanically abrading, chemically etching (“pickling”) or anodising the degreased surfaces. Abrading should be followed by a second degreasing treatment.

Mix ratio	Parts by weight	Parts by volume
Araldite® 1570 FST A	100	100
Araldite® 1570 FST B	87.8	100

Application of adhesive

The resin/hardener **must be stored at 30°C during 8 hours before being used**, then the mix may be applied manually with a spatula or a gun, or robotically to the pretreated and dry joint surfaces.

A layer of addhesive 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.

Recommended cure cycle

- 48 hrs at 25°C

Typical cured properties

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.

Lap shear Strength

Unless otherwise stated, the results given below respect the standard ISO 4587. The aluminium used is in accordance with ABS5044A016 and was treated in accordance with ISO 4588 clause 6.1.2.1.

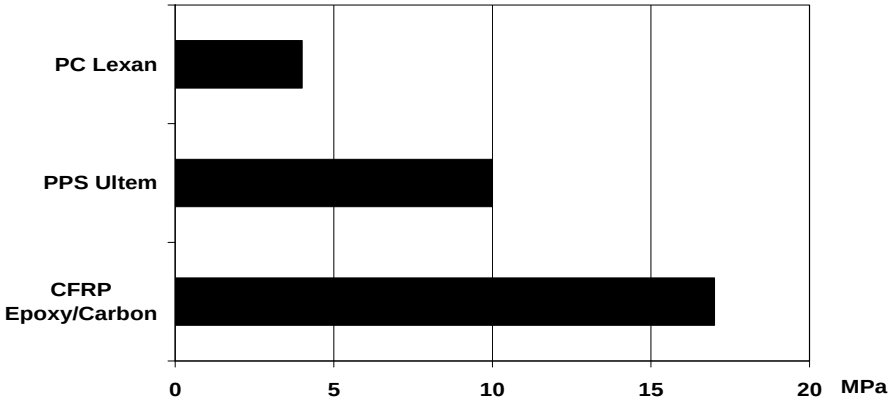
The test speed used by Huntsman Advanced Materials was 2 mm/min.

Curing cycle : 48 hours at 25°C

Test Temperature (°C)	Lap shear strength (MPa)	Failure Mode
-55	18 - 23	Cohesive
+23	14 - 20	Cohesive
+80	3 - 6	Cohesive

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

Cured 48 hrs at 25°C
Test speed : 10 mm/min



Glass transition temperature Cure 48 hrs at 25°C ca. 60°C

Flammability characteristics

Test Method : Bunsen Burner Test, Vertical – 60s Ignition Time
Standard : FAR/JAR/CS 25 App. F Part 1
Thickness of specimen : 0.4 mm
Cured 4 hrs at 60°C

	Unit	Results	Requirements
Burn Length	mm	**42**	152
Flame Time	s	**0**	0
Drip Flame Time	s	**0**	0

Smoke characteristics

Test Method : Measurement of smoke density, Flaming Mode
Standard : FAR/JAR/CS 25 App. F Part 5 and AITM 2.0007
Thickness of specimen : 0.5 mm
Cured 4 hrs at 60°C

After 4 minutes, Specific optical smoke density **Ds = 46**, the maximum limit is 200.

Smoke characteristics

Test Method : Determination of the toxic components on combustion products, Flaming Mode
Standard : ABD 0031 and AITM 3.0005
Thickness of specimen : 0.5 mm
Cured 4 hrs at 60°C

Gas	Unit	Results	Requirements
HCN	ppm	**5**	150
CO		**90**	1000
NO_x		**7**	100
$SO_2 + H_2S$		**2**	100
HF		**0**	100
HCl		**0**	150

Storage

Araldite® 1570 FST A and Araldite® 1570 FST B may be stored for up to 1 year at 2-8°C provided the components are stored in sealed containers. The expiry date is indicated on the label.
Keep containers in dry atmosphere, avoid exposure of the containers to moisture and direct sources of heat.

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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