

PX590EF-1

Epoxy Foam System

Application

- Suitable for void-filling applications and those requiring a low viscosity, low density material with good adhesion

Key Properties

- Good adhesion to a variety of substrates
- Slow foaming reaction, low pressure during expansion
- Good thermal performance when post cured
- Customisable blow ratio

Description

- Basic Three component epoxy system
- Resin RX590EF-1/NC
- Hardener HX590EF/NC
- Blowing Agent AX590EF/NC

Characteristics of Resin	Value	Unit	Standard
Colour	Clear	Visual	RTM010
Specific Gravity	1.17	-	RTM003
Viscosity	8,000 – 12,000	mPa.s	RTM008

Characteristics of Hardener	Value	Unit	Standard
Colour	Clear Amber	Visual	RTM010
Specific Gravity	0.95	-	RTM003
Viscosity @ 25°C	1,000-3,000	mPa.s	RTM008

Characteristics of Blowing Agent	Value	Unit	Standard
Colour	Clear/Colourless	Visual	RTM010
Specific Gravity	1.01	-	RTM003
Viscosity @ 25°C	10-50	mPa.s	RTM008

Processing

Mix ratio by weight: 2.44: 1 (RX: HX)

Mix ratio by volume: 2: 1 (RX: HX)

This product requires the AX590EF/NC blowing agent to produce a foam, increased loading will increase the blow ratio.

Recommended loading of 0.5 to 3.0 parts by weight (pbw) AX590EF/NC per 100 parts RX590EF-1/NC is recommended. The blow ratio is not linear with increased loading of blowing agent, and therefore levels off at higher loadings.

Typical Blow ratio with AX590EF/NC loadings per 100 parts RX590EF-1/NC:

0.5 pbw = 1: 1.7 Density = 0.65 g/cm³
 1.0 pbw = 1: 2.2 Density = 0.5 g/cm³
 2.0 pbw = 1: 2.7 Density = 0.4 g/cm³
 3.0 pbw = 1: 3.1 Density = 0.35 g/cm³

Cure Schedule (150ml)	Room Temp	Standard
Cream Time (minutes)	1-2	
Gel Time (minutes)	240	RTM015
Light Handling (hours)	12	-
Full Cure (hours)	24	-

*RT is defined as 20-25°C

RTM – Details of Robnor Test Methods are available on request

The above are typical values and will vary depending on the cured mass and application. Hotter temperatures may be used for faster cure but will result in higher post cure shrinkage and higher cure exotherm. Experimentation and testing is suggested to avoid side effects. For maximum properties a post cure may be required – Contact our technical service department for advice.

Physical Characteristics	Value	Unit	Standard
Cream Time	1-2	Minutes	
Major Rise Time	15	Minutes	
Total Rise Time	60	Minutes	
Hardness (Approx.)	60	Shore D	RTM018
Operating temperature range *	-40 to +150	°C	RTM024

*(application & geometry dependent)

Approvals	
RoHS compliant	Yes
UL94 V-0	No
REACH (SVHC concentration)	0%

Packaging

PX590EF-1 is available in Bulk, Twinpacks

AX590EF/NC is available in Bulk

Availability

Available through distribution and www.robnor-resinlab.com sales@robnor.co.uk

Twinpacks - Part Numbers

PX590EF-1/NC/300	
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Twinpacks are pre-weighed resin and hardener components contained in a tough flexible film, separated by a removable clip and rail. Once the clip and rail has been removed the resin and hardener is thoroughly mixed within the bag and is immediately ready for use. Mixing will normally take ~ 2 minutes due to the viscosity; but pay special attention to the corners. Twinpacks are ideal for small to medium production runs, prototyping and on-site or field use. The twinpack weight/volume may also be tailored to a specific size on request.

For further details please visit www.robnor.co.uk

Bulk Materials - Part Numbers

AX590EF/NC/200	
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Both resin and hardener are supplied in 5kg, 25kg and 200ltr drums and fully evacuated and ready for use. Care should be taken to ensure when mixing the resins air is not entrained in the mixture. If this is unavoidable the mixed resin and hardener should be re-evacuated before dispensing. The bulk resin and hardener materials can be dispensed from suitable dispensing machinery. Fluid Research produce a range of suitable dispensing machines, details available on request.

Kits and Sets - Part Numbers

Kits available on request	Sets available on request
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Kits and Sets are provided in separate containers to the correct ratio.

In Kit form, pour contents of the smaller container into the larger container and use it as a mixing vessel. Stir well using an appropriate mixer until homogeneous.

Note: Incomplete mixing will be characterised by erratic or partially incomplete cure even after extended time periods.

Cleaning

All equipment contaminated with mixed material should be cleaned before the material has hardened. TS130 is a suitable non-flammable cleaning agent, although other solvents may be found suitable. TS130 will also remove cured material provided it can soak for several hours.

Storage and Shelf Life

12 months at 25°C Bulk packaging.

Many epoxy resin systems are prone to crystallization as epoxy resin is a super-cooled fluid. This condition may give the product a gritty or grainy appearance (or hazy in clear products). Products in this state will not usually cure to normal and expected properties. In extreme cases it may appear solid and cured. Fluctuating temperatures (within 5 to 50°C) aggravate this phenomenon. Heating the individual component to 50 to 60°C while stirring can usually restore products to original state. Storage at 25 +/- 10°C is optimum for most products

Some epoxy systems are prone to settling due to high filler content and should be inverted every two to three weeks to reduce the accumulation of the fillers on the bottom of the containers.

Inventory should be rotated on a FIFO (first in, first out) basis.

Health and Safety

Please refer to RX/HX/AX Health and Safety data or our Technical Service Department for individual/specific advice.

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The results and information above do not constitute a specification and is given in good faith and without warranty. The information is derived from test/or extrapolations believed to be reliable and is quoted for guidance only. The product is offered for evaluation on the understanding the customer satisfies himself that the product is suitable for the intended application by proper evaluation and testing.

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