

# AMPREG™ 3X THIXOTROPIC PREGEL

## EPOXY WET LAMINATING SYSTEM RESIN ADDITIVE

- Reduces drainage of vertical laminates
- For use with Ampreg™ 30, 31 and 36 Resins and Ampreg™ 3X Series Hardeners
- Can be used as a core bonding adhesive
- Low Toxicity Hardener Formulations
  - Improved Hazard Labelling
  - Non-CMR & SVHC Free
  - Reduced Environmental Hazards

### INTRODUCTION

**Ampreg™ 3X Series Thixotropic Pregel is a resin additive with a grease-like consistency, which can be used with a variety of hardeners from the Gurit laminating resin range. It is used primarily as a thixotrope - to be added to low viscosity laminating resins for applications where resin drainage is a concern. It is therefore typically used in vertical and overhead laminating situations, particularly where heavy, open weave fabrics are being used, since these are the most prone to resin drainage.**

Ampreg™ 3X Series Thixotropic Pregel can be used as the base resin component of an adhesive for bonding honeycomb & foam cores, and other rigid materials, whilst offering improved health & safety through the careful selection of low toxicity raw materials.

The properties of an Ampreg™ 3X Series Thixotropic Pregel/laminating hardener combination are broadly similar to those of the hardener with its usual resin. This is because the thixotropic agents are added to a high quality resin base and because the Pregel is usually added to the laminating system at relatively low levels. At higher addition levels, the resulting laminate has the potential to be more brittle than the “neat” laminating system.

\*\* CMR = Substances classified as Carcinogenic, Mutagenic or toxic for Reproduction  
SVHC = Substances of Very High Concern

## PRODUCT INFORMATION

### AVAILABILITY

The product is available in a number of formats please contact your local customer support representative for more information.

### TRANSPORT & STORAGE

The resin and hardeners should be kept in securely closed containers during transport and storage. Any accidental spillage should be soaked up with sand, sawdust, cotton waste or any other absorbent material. The area should then be washed clean (see appropriate Safety Data Sheet).

COMPONENT	UNITS	10 – 25°C
Ampreg™ 3X Series Thixotropic Pregel	months	12

Adequate long term storage conditions will result in a shelf life of 1 year. Storage should be in a warm dry place out of direct sunlight and protected from frost. The storage temperature should be kept constant between 10°C and 25°C, cyclic fluctuations in temperature can cause crystallization. Containers should be firmly closed. Hardeners, in particular, will suffer serious degradation if left exposed to air.

## INSTRUCTIONS FOR USE

The product is optimised for use at temperatures between 18 and 25°C. At lower temperatures the product thickens and may become unworkable. At higher temperatures working times will be significantly reduced. Maximum relative humidity for use is 70%.

### MOULD RELEASE

Smooth metal and GFRP mould tests have shown that suitable release can be obtained by use of 5-6 waxings of a carnauba based wax e.g. Polywax. Use PVA for less well prepared or more complex surfaces. The highest quality surface can normally be generated by using semi-permanent release systems like TR 920 (TR Industries) or PMR EZ (Chemlease).

Before the application of the release agent onto a new mould it should be sealed and primed, this is also true if an old mould have had its released agents stripped and a new system applied. It is suggested that a complete system is purchased from a single manufacturer to ensure there are no compatibility issues. A low VOC (Volatile Organic Chemical) option is water based systems like chemlease 5051W or 5016W which will not generate class A surface finish but will help to reduce VOC release in moulding areas. Whichever mould release is proposed it is recommended that a test laminate is laid up under production conditions and time scales, in order to ensure an adequate and effective part release.

### MIXING AND HANDLING

Ampreg 3X Series Thixotropic Pregel can be used with Ampreg 30, 31 & 36 resins and in conjunction with Ampreg 3X Series hardeners to modify the thixotropy, resistance to flow and drain, of these systems. It is normally used as a percentage of the total mix, the Ampreg 3X Thixotropic Pregel being blended with the parent systems resin before the addition of the parent systems hardener. Due to the addition of the colloidal silica in the Ampreg 3X Thixotropic Pregel this does change the mix ratio dependant on the ratio of parent resin to Ampreg 3X Thixotropic Pregel (see page 4 for details). The Ampreg 3X Thixotropic Pregel will increase the viscosity and so the minimum percentage addition suitable for the application and the workshop conditions should be used.

Accurate measurement and thorough mixing are essential when using this system, and any deviation from the prescribed mix ratios will seriously degrade the physical properties of the cured system. The resin and hardener must be stirred well for two minutes or more, with particular attention being paid to the sides and bottom of the container. As soon as the material is mixed the reaction begins. This reaction produces heat (exothermic), which will in turn accelerate the reaction. If this mixed material is left in a confined mixing vessel the heat cannot disperse and the reaction will become uncontrollable.

NOTE: When used with Ampreg 30, 31 or 36, particularly at high loadings (>50%), the viscosity and working time behaviour can be significantly different. Therefore at high Pre-gel loadings, consideration should be given to utilising a slower hardener speed if extended working time is required.

### APPLICATION

Ampreg 3X Series Thixotropic Pregel can be used in the following situations:

- As a resin modifier to increase viscosity and reduce drainage in laminates.
- As an adhesive mix for bonding core materials to Ampreg 30, Ampreg 31 and Ampreg 36 laminate skins.

Acting as a flow retardant, Ampreg 3X Series Thixotropic Pregel will slow the wet-out of reinforcements. This should be borne in mind when selecting the appropriate speed of hardener. Consult the datasheet for the resin system with which Ampreg 3X Thixotropic Pregel is to be used, for information regarding application and cure schedule. Test panels should always be made prior to application to ensure the correct Pregel loading and hardener have been selected for the given working conditions. For further advice, please contact Gurit Technical Support.

### BONDING TECHNIQUES & PEEL PLY

It is recommended to use nylon peel ply for any secondary bonding applications. Peel Ply is typically used on laminate surfaces which need to be left to cure or partially cure before further laminating or bonding operations. The peel ply serves two functions - preventing the surface from becoming contaminated and / or damaged, and providing a 'textured' surface that can reduce the level of preparation required for the secondary laminating or bonding operations. After curing and just prior to bonding, the Peel Ply is stripped off leaving a clean, dust and grease free surface, with an already 'textured' surface which makes the 'keying' process less time consuming. Gurit recommends the use of its Stitch Ply A peel ply, or suitable Tygavac product. Any proposed peel ply should be tested prior to use to ensure that it not only releases adequately from the laminated surface but also does not leave any residues behind which may impair adhesion. If in doubt please contact Gurit Technical Support.

### VACUUM BAG TECHNIQUES

Refer to the corresponding Ampreg 30, Ampreg 31 or Ampreg 36 technical datasheet. For advice on effective vacuum bag consolidation, please contact Gurit Technical Support.

NOTE: high additions of Ampreg 3X Thixotropic Pregel will reduce gel and working times

## CURING SCHEDULE

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Refer to the corresponding Ampreg 30, Ampreg 31 or Ampreg 36 technical datasheet. For advice on effective vacuum bag consolidation, please contact Gurit Technical Support.

## HEALTH AND SAFETY

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The following points must be considered:

1. Skin contact must be avoided by wearing protective gloves. Gurit recommends the use of disposable nitrile gloves for most applications. The use of barrier creams is not recommended, but to preserve skin condition a moisturising cream should be used after washing.
2. Overalls or other protective clothing should be worn when mixing, laminating or sanding. Contaminated work clothes should be thoroughly cleaned before re-use.
3. Eye protection should be worn if there is a risk of resin, hardener, solvent or dust entering the eyes. If this occurs flush the eye with water for 15 minutes, holding the eyelid open, and seek medical attention.
4. Ensure adequate ventilation in work areas. Respiratory protection should be worn if there is insufficient ventilation. Solvent vapours should not be inhaled as they can cause dizziness, headaches, loss of consciousness and can have long term health effects.
5. If the skin becomes contaminated, then the area must be immediately cleansed. The use of resin-removing cleansers is recommended. To finish, wash with soap and warm water. The use of solvents on the skin to remove resins etc must be avoided.  
Washing should be part of routine practice:
  - before eating or drinking
  - before smoking
  - before using the lavatory
  - after finishing work
6. The inhalation of sanding dust should be avoided and if it settles on the skin then it should be washed off. After more extensive sanding operations a shower/bath and hair wash is advised.

### APPLICABLE RISK & SAFETY PHRASES

Gurit produces a separate full Safety Data Sheet for all hazardous products. Please ensure that you have the correct SDS to hand for the materials you are using before commencing work.

## AMPREG™ 3X THIXOTROPIC PREGEL & AMPREG™ 3X HARDENERS

### MIXED SYSTEM PROPERTIES\*

25°C PROPERTY	UNITS	A3X Fast	A3X Standard	A3X Slow	A3X X-Slow	TEST METHOD
Earliest vacuum on time (to 1,000P)	hrs:min	00:45	01:30	03:30	05:40	Internal method
Latest vacuum on time (to 5,000P)	hrs:min	01:15	02:10	04:40	07:15	Internal method
Earliest vacuum off time (to 100,000P)	hrs:min	02:00	03:15	06:40	09:40	Internal method

\*working time properties are highly subjective to ambient conditions and should be used as an approximate guideline for all Ampreg™ systems

## AMPREG™ 30 LAMINATING SYSTEM & AMPREG™ 3X THIXOTROPIC PREGEL

### MIX RATIO GUIDELINES (PARTS BY WEIGHT)

AMPREG™ 30 RESIN	THIXOTROPIC PREGEL RESIN	AMPREG™ 3X SERIES HARDENERS
100	0	26
75	25	26
50	50	25
25	75	24
0	100	24

## AMPREG™ 31 LAMINATING SYSTEM & AMPREG™ 3X THIXOTROPIC PREGEL

### MIX RATIO GUIDELINES (PARTS BY WEIGHT)

AMPREG™ 31 RESIN	THIXOTROPIC PREGEL RESIN	AMPREG™ 3X SERIES HARDENERS
100	0	26
75	25	26
50	50	25
25	75	24
0	100	24

## AMPREG™ 36 LAMINATING SYSTEM & AMPREG™ 3X THIXOTROPIC PREGEL

### MIX RATIO GUIDELINES (PARTS BY WEIGHT)

AMPREG™ 36 RESIN	THIXOTROPIC PREGEL RESIN	AMPREG™ 3X SERIES HARDENERS
100	0	29
75	25	28
50	50	26
25	75	25
0	100	24

## NOTICE

All advice, instruction or recommendation is given in good faith but the selling Gurit entity (the Company) only warrants that advice in writing is given with reasonable skill and care. No further duty or responsibility is accepted by the Company. All advice is given subject to the terms and conditions of sale (the Conditions) which are available on request from the Company or may be viewed at Gurit's Website: [www.gurit.com/terms-and-conditions.aspx](http://www.gurit.com/terms-and-conditions.aspx)

The Company strongly recommends that Customers make test panels in the final process conditions and conduct appropriate testing of any goods or materials supplied by the Company prior to final use to ensure that they are suitable for the Customer's planned application. Such testing should include testing under conditions as close as possible to those to which the final component may be subjected. The Company specifically excludes any warranty of fitness for purpose of the goods other than as set out in writing by the Company. Due to the varied nature of end-use applications, the Company does, in particular, not warrant that the test panels in the final process conditions and/or the final component pass any fire standards.

The Company reserves the right to change specifications and prices without notice and Customers should satisfy themselves that information relied on by the Customer is that which is currently published by the Company on its website. Any queries may be addressed to the Technical Services Department.

Gurit is continuously reviewing and updating literature. Please ensure that you have the current version by contacting your sales contact and quoting the revision number in the bottom left-hand corner of this page.

## TECHNICAL CONTACT INFORMATION

For all other enquiries such as technical queries:

Telephone + 44 1983 828000 (08:30 – 17:00 GMT)  
Email [technical.support@gurit.com](mailto:technical.support@gurit.com)

## 24-HOUR CHEMICAL EMERGENCY NUMBER

For advice on chemical emergencies, spillages, fires or exposures:

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Americas +1 646 844 7309  
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