

AMPRO™ COLLOIDAL SILICA

HYDROPHOBIC RESIN THICKENER

- Fine white powder
- Used to control the thixotropy or 'sag'
- Can be used with Glass Bubbles, Microballoons and Microfibres
- Naturally water-resistant / hydrophobic for marine applications
- Lower loading levels compared to traditional silica, up to 2% by weight

INTRODUCTION

AMPRO™ Colloidal Silica is an agent which is used to control the thixotropy or 'sag' characteristics of a resin system. By adding colloidal silica powder in varying amounts to a resin mix containing the other filler types mentioned, the handling and flow characteristics can be controlled.

Relatively small quantities added to a resin mix containing glass bubbles or microballoons will give non-sag properties and impart easier handling. Colloidal silica is also used with microfibres to produce a mix suitable for use as a high strength, non-sagging structural adhesive, particularly for non-absorbent materials such as grp. The inclusion of colloidal silica has the effect of increasing the hardness of the resulting mix which will create more difficulty when sanding. For this reason colloidal silica is usually added in the minimum quantities to any mix for which sanding is anticipated. In some applications this feature can be used to an advantage, for example to create a hard wearing edge or surface.

AMPRO™ Silica is naturally water-resistant / hydrophobic making it more suited for marine applications. Lower loading levels are required compared to traditional silica, up to 2% reduction by weight.



Hollow spheres

Increase the volume and reduce the density of any resin system and are used to make adhesive mixes and filling & fairing mixes.

- Microballoons: Brown microsphere filler powder used to make glues or paste fillers
- Glass Bubbles: White microsphere filler powder used to make glues or paste fillers

Short Fibres

For adding strength to a resin and hardener mix used as a structural adhesive, short reinforcing fibres are often added which act in a similar strengthening way to the long reinforcing fibres used in composite construction.

- Microfibres: Cellulose fibres used to make adhesive mixes

Flow Modifiers

The most common material for modifying the flow properties of a resin mix is colloidal silica. This is a very fine powder which is added in conjunction with other fillers to 'thicken' mixes and reduce their flow on vertical surfaces (increase thixotropy).

- Colloidal Silica: Fine, anti-sag, filler powder. Use in combination with other filler powders

PRODUCT INFORMATION

AVAILABILITY

The product is available in a number of formats as shown in the table below. Please contact your local customer support representative for more information.

FILLER TYPE	1 LITRE / 40G	5 LITRES / 250G		NOTE
AMPRO™ Silica	A220-007	A220-008		All quantities are approximate due to the low density nature of the fillers.

PRODUCT DETAILS

Composition:	Hydrophobic Silicon Dioxide
Appearance:	White Powder
Particle Size:	0.012 microns
Bulk Density:	50 - 60g/litre approx.

TRANSPORT & STORAGE

The product should be kept in securely closed containers during transport and storage. Adequate long term storage conditions will result in a shelf life of 2 years from the date of manufacture. Storage should be in a warm dry place out and containers should be firmly closed.

COMPONENT	UNITS	
AMPRO™ Silica	months	24

INSTRUCTIONS FOR USE

Below are approximate filler loadings for making adhesive and filler mixes together with AMPRO™ multi-purpose systems. For further information please refer to the respective AMPRO™ datasheet.

FILLING AND FAIRING MIXES

All filler additions are approximate and can be adjusted by the user to achieve the desired consistency.

DESCRIPTION	FILLER TYPE	EASE OF SANDING	WATER RESISTANCE	FILLER QUANTITY*		AMPRO SILICA ADDITION*		APPROX. DENSITY	APPROX. VOLUME
				%	FOR 1KG	%	FOR 1KG		
Brown, Low Density	Microballons	Easy	Moderate	25 - 30	250 - 300 g	2 - 3	20 - 30	0.6 g/cm ³	2.2 Litres
White, Low Density	Glass Bubbles	Moderate	High	35 - 40	350 - 400 g	3 - 5	30 - 50	0.5 g/cm ³	3.0 Litres

*calculated by weight relative to the mixed system of resin and hardener

ADHESIVE MIXES

All filler additions are approximate and can be adjusted by the user to achieve the desired consistency.

DESCRIPTION	FILLER TYPE	FILLER QUANTITY*		AMPRO SILICA ADDITION*		APPROX. DENSITY	APPROX. VOLUME
		%	FOR 1KG	%	FOR 1KG		
Brown, Low Density	Microballons**	15 - 20	150 - 200 g	3 - 5	30 - 50 g	0.7 g/cm ³	1.8 Litres
White, Low Density	Glass Bubbles**	15 - 20	150 - 200 g	4 - 6	40 - 60 g	0.6 g/cm ³	2.0 Litres
Opaque, High Strength	Microfibres	7 - 10	70 - 100 g	2 - 4	20 - 40 g	0.9 g/cm ³	1.0 Litres

*calculated by weight relative to the mixed system of resin and hardener

**Microfibres are always preferred for load-carrying adhesive joints

HEALTH AND SAFETY

The following points must be considered:

- 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.
- Protective clothing should be worn when mixing, laminating or sanding. Contaminated work clothes should be thoroughly cleaned before re-use.
- 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.
- 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.
- 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 & vaping
 - ↪ before using the lavatory
 - ↪ after finishing work
- 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.

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

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

24-HOUR CHEMICAL EMERGENCY NUMBER

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