

# GR120

## EPOXY MULTIPURPOSE SYSTEM

**GR120 is a simple to use, all-purpose epoxy ideal for coating applications which can also be used for gluing, laminating and filling. With its fast, low temperature curing hardener and easy 5:1 mix ratio by volume, GR120 provides a quick and convenient way of using one epoxy system for a very wide range of tasks.**

By using the Gurit range of filler powders, an GR120 can be turned into a very effective adhesive or filling compound. Details of this filler range, and how to use them, are contained in a separate information sheet (Filler Guide) and typical filling and fairing mixes (resin / hardener / filler) are shown in this data sheet.

GR120 is compatible with all types of foams, polystyrenes, polyurethanes, Gurit PVC, Gurit Kerdyn™ PET and Corecell™ products.

- Ideal for clear coating / laminating applications
- Engineered, with improved health & safety
- Available with fast and slow hardeners
- No surface residue after cure
- Can also be used for bonding, laminating & filling wood & GRP
- Mix ratio by weight 100:18
- Mix ratio by volume 5:1

## INSTRUCTIONS FOR USE

### APPLICATION

The product is optimized for use at temperatures between 15 - 25°C (59 - 77°F). 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%.

### MIXING AND HANDLING

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.

### COATING

If exposed to sunlight the product should be painted or coated with a varnish which includes UV filter or blockers.

Prior to this, two coats of GR120 will achieve a stable substrate. GR120 has a number of benefits, including:

- Subsequent coats of GR120 can be applied after just 5 hours at 20°C (68°F) without sanding
- GR120 is solvent-free and will be fully hardened overnight ready for over-coating or top-coating

The surface to be coated should be dry and clean, before sanding with 180 – 220 grit sandpaper to generate a key, the surface should then be wiped with solvent to remove the dust before the application of the GR120.

Note: In order to achieve the optimum surface finish, multiple thin layers of GR120 should be applied.

GR120 should be sanded before the application of the final paint system or varnish, please refer to the paint or varnish manufacturer's recommendations regarding sandpaper and solvent type to be used for this operation.

### LAMINATING

GR120 can be used to laminate all common fiber types. Due to its low viscosity it wets out fibers with ease. Standard hand laminating and vacuum bag processes can be used predominantly with the slower hardeners.

### ADHESIVE MIXES

GR120 can be mixed with standard Gurit fillers to make filling / fairing or adhesive compounds as required

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

FILLER TYPE	DESCRIPTION	FILLER QUANTITY		SILICA ADDITION		APPROX. DENSITY	APPROX. VOLUME
		%	FOR 1KG	%	FOR 1KG		
Microballoons	Brown, low density	15 - 20	150 - 200 g	4 - 5	40 - 50 g	0.7 g/cm <sup>3</sup>	1.8 Ltrs
Glass Bubbles	White, low density	15 - 20	150 - 200 g	5 - 6	50 - 60 g	0.6 g/cm <sup>3</sup>	2.0 Ltrs
Microfibres	Opaque, high strength	7 - 10	70 - 100 g	3 - 4	30 - 40 g	0.9 g/cm <sup>3</sup>	1.0 Ltr

### FILLING AND FAIRING MIXES

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

FILLER TYPE	DESCRIPTION	EASE OF SANDING	WATER RESISTANCE	FILLER QUANTITY		SILICA ADDITION		APPROX. DENSITY	APPROX. VOLUME
				%	FOR 1KG	%	FOR 1KG		
Microballoons	Brown, low density	Easy	Moderate	25 - 30	250 - 300 g	2 - 3	20 - 30	0.6 g/cm <sup>3</sup>	2.2 Ltrs
Glass Bubbles	White, low density	Moderate	High	35 - 40	350 - 400 g	3 - 5	30 - 50	0.5 g/cm <sup>3</sup>	3.0 Ltrs

## COVERAGE

THICKNESS (PER COAT)	AREA	COMMENT
Coating coverage @ 0.25 mm	Approximately 3 m <sup>2</sup> /kg	Dependent on temperature, surface inclination, surface porosity and evenness
Adhesive coverage @ 1mm	Approximately 1.1 – 1.7 m <sup>2</sup> /kg	Dependent on flier type, temperature, surface inclination, surface porosity and evenness

## TRANSPORT & STORAGE

The resin and hardener 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). Adequate long term storage conditions will result in a shelf life, as per table, from the date of manufacture for both the resin and hardeners, see product container label for expiry date.

COMPONENT	UNITS	10 – 25°C (50 – 77°F)
GR120 Resin	Months	24
GR120 Fast and Slow Hardeners	Months	24

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 - 25°C (50 – 77°F), cyclic fluctuations in temperature can cause crystallization. Containers should be firmly closed. Hardener, in particular, will suffer serious degradation if left exposed to air. Hardeners may darken over time, however the physical properties are not affected. Be aware of a possible mixed system color change if very old and new hardeners are used on the same project.

## GR120 & GR120 FAST HARDENER PROPERTIES

This product summary is intended for use in conjunction with further advice provided under the Instructions for Use section.

PROPERTY	UNITS	GR120 RESIN	GR120 FAST HARDENER	MIXED SYSTEM
Color	-	Clear	Amber	Clear
Mix ratio by volume	Parts by volume	5	1	-
Mix ratio by weight	Parts by weight	100	18	-
Density at 21°C (ISO 1183-1B)	g/cm <sup>3</sup>	1.16	1.0	1.13

## COMPONENT PROPERTIES

PROPERTY	UNITS	TEMPERATURE 25°C	TEST METHOD
GR120 Resin viscosity	cP	1360	CAP2000LT
GR120 Fast Hardener viscosity	cP	91	CAP2000LT
Initial mixed system viscosity	cP	849	CAP2000LT

## WORKING TIME PROPERTIES

PROPERTY	UNITS	TEMPERATURE 25°C	TEST METHOD
Thin-film gel-time (0.5mm)	hrs:min	1.18	Gurit internal method
Pot-life (150 g, mixed in water)	hrs:min	0.13	Tecam gel time
Tack off time	hrs:min	-	Gurit internal method
Earliest sanding time	hrs:min	12:00	Gurit internal method

## AMBIENT CURE THERMAL PERFORMANCE PROGRESSION at 21°C

PROPERTY PROGRESSION	SYMBOL	UNITS	7 DAYS	14 DAYS	28 DAYS	TEST METHOD
Glass transition temperature	T <sub>g</sub> <sup>2</sup>	°C	49.7	50.1	50.4	(DSC)
Shore D hardness	-	-	83.2	83.4	84.0	-

## POSTCURED CURED RESIN PROPERTIES

PROPERTY	SYMBOL	UNITS	16 HOURS @ 50°C*	TEST METHOD
Glass transition temperature	T <sub>g</sub> <sup>2</sup>	°C	67	(DSC)
Ultimate glass transition temp.	UT <sub>g</sub> <sup>2</sup>	°C	95.1	(DSC)

\* initial cure of 24 hours at 20°C

## GR120 & GR120 SLOW HARDENER PROPERTIES

This product summary is intended for use in conjunction with further advice provided under the Instructions for Use section.

PROPERTY	UNITS	GR120 RESIN	GR120 SLOW HARDENER	MIXED SYSTEM
Color	-	Clear	Amber	Clear
Mix ratio by volume	Parts by volume	5	1	-
Mix ratio by weight	Parts by weight	100	18	-
Density at 21°C (ISO 1183-1B)	g/cm <sup>3</sup>	1.16	1.0	1.13

## COMPONENT PROPERTIES

PROPERTY	UNITS	TEMPERATURE 25°C	TEST METHOD
GR120 Resin viscosity	cP	1360	CAP2000LT
GR120 Slow Hardener viscosity	cP	11	CAP2000LT
Initial mixed system viscosity	cP	498	CAP2000LT

## WORKING TIME PROPERTIES

PROPERTY	UNITS	TEMPERATURE 25°C	TEST METHOD
Thin-film gel-time (0.5mm)	hrs:min	2.00	Gurit internal method
Pot-life (150 g, mixed in water)	hrs:min	0.44	Tecam gel time
Tack off time	hrs:min	-	Gurit internal method
Earliest sanding time	hrs:min	16:00	Gurit internal method

## AMBIENT CURE THERMAL PERFORMANCE PROGRESSION at 21°C

PROPERTY PROGRESSION	SYMBOL	UNITS	7 DAYS	14 DAYS	28 DAYS	TEST METHOD
Glass transition temperature	Tg <sup>2</sup>	°C	49.0	48.5	46.8	(DSC)
Shore D hardness	-	-	83.2	82.9	83.3	-

## POSTCURED CURED RESIN PROPERTIES

PROPERTY	SYMBOL	UNITS	16 HOURS @ 50°C*	TEST METHOD
Glass transition temperature	Tg <sup>2</sup>	°C	62.6	(DSC)
Ultimate glass transition temp.	UTg <sup>2</sup>	°C	94	(DSC)

\* initial cure of 24 hours at 20°C

## HEALTH AND SAFETY

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 moisturizing cream should be used after washing.
2. 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 vapors 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 & vaping
- 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.

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

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## CONTACT INFORMATION

Please see local contact information at [www.gurit.com](http://www.gurit.com)

## 24-HOUR CHEMICAL EMERGENCY NUMBER

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

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