

SG 640 GM

High temperature resistant epoxy Gel-Coat

Properties

SG 640 GM has a viscosity suitable for brush application.
Cure at room temperature, a post-cure is required before release.
Excellent thermal resistance after post-cure.
Good abrasion resistance.
Recommended for manufacturing of mould with a service temperature of 130°C max.

SG 640 is formulated and filled in 3 versions :

- SG 640 **M** : Mica only. Electric insulator. On order.
- SG 640 **GM** : Standard for tooling gelcoat.
- SG 640 **G** : Graphite only. The closest dilatation to the carbon. On order.

	SG 640 GM	SD 544.21
Aspect :	Gel	Liquid
Colour	Green or black*	Reddish Yellow
Viscosity (mPa.s) @ 20°C	thixotropic Gel	900 – 1000
@ 25°C	thixotropic Gel	500-600
Density (Kg/l) @ 20°C	1.16 ± 0.05	1.027 ± 0.003

* green : M (mica) black : GM (graphite / mica) & G (graphite)

System SG 640 GM / SD 544.21

Time to reach 50°C on 150 g mix	@ 20 °C	na
	@ 30 °C	22 min
Time and temperature of exothermal peak on 150g mix	@ 20 °C	45 min / 40 °C
	@ 30 °C	33 min / 70 °C
Time to be dry to touch in film	@ 20 °C	73 min
	@ 30 °C	60 min
Film hard after	@ 20 °C	2 h 10'
	@ 30 °C	1 h 50'

Mixing ratio

SG 640 GM / SD 544.21

100 g / 22 g

Conditions of application

18°C < Temperature of substrate < 50°C Hygrometry < 70%

Release Agent

Try first the compatibility of SG 640 GM with the release agent (fish eyes, release properties after high temperature post cure)

Select a release agent suitable for high temperature (140°C minimum)

Recommended release agent : Cirex DE 60, Cirex DE 66.

Application

Use a stirrer with high shear.

Respect the mixing ratio Gel / Hardener accurately

Mix the two components, wipe the edge and the bottom of the pot while mixing.

Prepare the quantity applicable in less than 30 minutes.

With a brush or roll, do not dilute, SG 640 is slightly self levelling.

Laminating

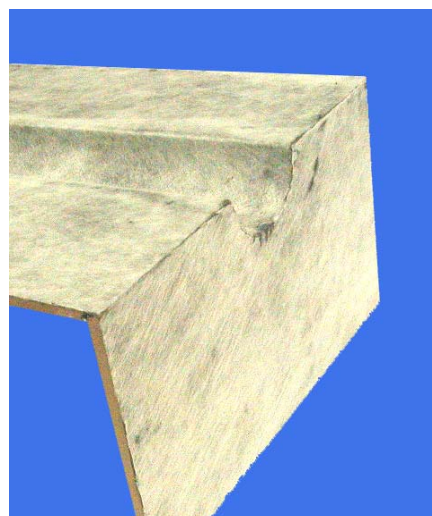
The laminate can start when the gel is still tacky, or later if the gel has been overlay by an surface veil as Armstrim 50, in order to create a mechanical key.

Mechanical key

A mechanical key is a surface veil or a carded type fabric, applied onto gelcoat when it is still wet but starting to set. The principal is to have half of the fabric wet by **SG 640 GM**, the other half is wet by the resin system. Use a clean, dry lacquer roller to apply gently the fabric on **SG 640 GM**

Advantages :

- Late overlay of gelcoat.
- Less print of fibers
- Very good adhesion between gelcoat and laminate.



SG 640GM with Armstrim 50

Post cure cycle

Apply the same post-cure cycle as the one recommended for the resin used in the laminate.

Recommended Epoxy resin: SR 1700 / SD 7820 or SR 1660 / SD 2630 or SD 7820

A minimum of 12 h @ 60°C is generally required before release from the pattern.

After release, complete gradually the post-cure with higher temperature.

Glass Transition / DSC

Tg1 max = 150 °C

Cleaning of tools

Methyl ethyl ketone (MEK) or solvents for epoxy paint

Storage

At 25 °C, the life expectancy of SG 640 GM and SD 544.21 is at least 1 year in its original container closed.

Packaging (kg)

Kits	SG 640 GM	SD 544.21
4.88	4	0.88
1.22	1	.22

Health and Safety

Components	Symbol	Risks Phrases	Safety Phrases	Contains
SG 640 GM	"Xi"	R 36/38	S 28	Product of reaction of bisphenol A & F on epichlorhydrine. Molecular weight inf. at 700
	Irritant	R 43	S 37 / 39	
SD 544.21	"T"	R 20/21/22	S 45	4,4'-Methylenebis (cyclohexaneamine),
	Toxic	R 48/20/21	S 53	4,4'-Diaminodiphenylmethane
		R 43		
		R 45		

(*):Consult the safety data sheet for further information.

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If our responsibility should nevertheless be involved, it would be, for all the damages, limited to the value of the goods supplied by us and implement by you. We guaranty the non-reproachable quality of our products, in the general context of sales and delivery.