

Supplemental Information for Hylomar Universal Blue Non-Setting Sealants

Developed by Rolls Royce PLC in the 1960's to seal against the synthetic lubricants that were used in early jet engines, Hylomar Universal Blue is recognized around the world as being the best of the non-setting sealants. Non-setting sealants work by filling the imperfections between the joint surfaces. This stops any fluids leaking through the joint. Think of Hylomar as being like a "Post-It Note". All Hylomar sealants have low cohesive strength, meaning you can separate a joint sealed with Hylomar. Hylomar will reseal the moment the two surfaces are brought back into contact. This self-healing mechanism is a key feature of all Hylomar sealants. These products are used as gasket dressings and sealants where vibration, temperature, and fluid resistance are critical.



Over time, a number of different "Universal Blue" formulas were developed. Today, the three most suitable for use on vintage British Sports Cars are Hylomar Universal Blue (the original), and two modern formulations, Hylomar M (introduced as the "Racing Formula"), and Hylomar AF, or advanced formulation.

GGC102 Hylomar Universal Blue "the original"

All three Hylomar Universal Blue sealants are highly engineered, polyester-urethane based non-setting and non-hardening gasket dressings. All of them are resistant to a wide range of material including turbine and piston engine combustion products, water/glycol and methanol mixtures, petroleum and synthetic lubricating oils, fluorocarbon refrigerants and fuels including gasoline and kerosene blends. Hylomar can be used to seal both joint surfaces and threaded parts. It has a unique curtaining action. As two surfaces sealed with Hylomar are pulled apart, the material stretches, and then breaks cohesively, leaving sealant on both sides. When the mating surfaces are brought back together, the Hylomar reseals. This "self-healing" mechanism makes Universal Blue a particularly effective sealant on large, close fitting flanges which are subject to extreme vibration, distortion, or joint movement, because even if the seal is broken for a moment, it quickly reseals and the joint will not leak. The current Hylomar Universal Blue formulation uses methylene chloride as a solvent, which is a health hazard. It must be used in a well ventilated area. Supplied in a 100 gram tube.

232-220 or GGL1031 Hylomar Universal Blue "M"

Hylomar M shares all the features of the original Hylomar Universal Blue. It differs in a few areas; Hylomar M can operate at slightly higher temperature ranges, Hylomar "M" exhibits significantly increased adhesive properties when compared to the original Hylomar Universal Blue. Originally developed for high performance applications, it was referred to as the "Racing Formula". It is currently used by Formula One and NASCAR® race teams. Hylomar M uses an acetone based solvent. Supplied in an 85 gram (3 oz) tube.

232-215 or GGL1032 Hylomar Universal Blue "AF" (Advanced Formulation)

Hylomar Advanced Formula is a solvent free, low viscosity version of the standard Universal Blue developed twenty years ago as a response to pressures to eliminate solvents from manufacturing processes. Instead of using a solvent such as methylene chloride or acetone as a carrier for the Universal Blue polymer, Hylomar chemists found a silica-type mixture that was solvent free and yet still was easily applicable and retained the benefits of Universal Blue. It is ideally suited as a gasket dressing. Because it is solvent-free, this is considered a "green" product. Supplied in an 80 ml (2.70 oz) tube. Advanced Formulation (AF) does have some differences to Universal Blue. The curtaining effect (elongation) is not

49 quite as large, so the gap fill is slightly reduced. On the other hand, the silica content raises the
 50 temperature resistance of the compound, and also provides a mechanism to continue sealing the joint at
 51 high temperatures even after the Hylomar polymer has burned off. Advanced Formulation is now widely
 52 used in the automotive industry, particularly on gearbox and transmission housings and flanges, where it
 53 is resistant to gear oils that attack silicones. AF is known to apply smoothly and easily without the
 54 maintenance issues and curing problems associated with silicone sealants.

Quick Comparison & Use Guide

	Hylomar Universal Blue (the original)	Hylomar Universal Blue Racing Formula, or "M"	Hylomar Universal Blue Advanced Formulation (AF)
Moss Europe	GGC102	GGL1031	GGL1031
Moss US	NA	232-220	232-215
Non-Hardening	Yes	Yes	Yes
Unlimited Assembly Time	Yes	Yes	Yes
Adhesion or "stickyness"	Moderate	High	Low
Minimum Temperature	-50°C (-58°F)	-50°C (-58°F)	-50°C (-58°F)
Maximum Temperature	250° C (482° F)	300° C (572° F)	350° C (662° F)
Resistance to			
Gasoline/Ethanol	High	High	High
Oil/Grease/Lubricant	High	High	High
Water/Glycol (anti-freeze)	High	High	High
Combustion By-Products	High	High	High
Vibration	High	High	High
Suitable For			
Metal-to-metal joints (no gasket)	Yes	Yes (best)	No
Plastic-to Plastic joints (no gasket)	Yes	Yes (best)	No
Thread Sealing	Yes	Yes	Yes
Exhaust Manifolds	No	No	Yes
Water, Oil, Fuel Pumps	Yes	Yes	Yes
Cylinder Heads	Yes	Yes	Yes
Oil Pan or Sump	Yes	Yes	Yes
Intake Manifold	Yes	Yes	Yes
Timing Cover	Yes	Yes	Yes
Gearbox	Yes	Yes	Yes
Solvent	Methylene Chloride ¹	Acetone ²	None ³
Shelf Life (unopened)	2 years	2 years	3 years
Clean Up	Acetone	Acetone	Acetone

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 56 ¹ Methylene chloride in GGC102 is a serious health hazard; follow instructions included with product. Use in a well ventilated area.
 57 When the solvent evaporates, the Hylomar will become a soft, waxy putty with excellent adhesion.

58 ² Acetone will also evaporate, leaving a similar soft, waxy putty that has even better adhesion properties-it is "stickier" than the
 59 original "Universal Blue" GGC102.

60 ³ The AF has no solvent, and it has a thick honey-like consistency that does not change over time.
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62 Although every effort has been made to ensure the accuracy and clarity of this information, any suggestions that you may have that will
 63 improve the information (especially detailed installation notes) are welcome. Please use the simple email form on the "Contact Us"
 64 page on the Moss website: <http://www.mossmotors.com/AboutMoss/ContactUs.aspx>
 65 If you prefer, you may call our Technical Services Department at 805-681-3411. So many people call us for help that we are often not
 66 able to answer the calls as fast as we'd like, and you may be asked to leave a message. We apologize in advance for the
 inconvenience. We will get back to you within 2 business days.



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