



**MM544 (ESP544)  
Addition cure moulding rubber**

**Introduction**

**MM544** is a pourable 2-part addition cure silicone elastomer system. After mixing parts 'A' and 'B' in the correct proportions, the system will cure at ambient temperatures within 24 hours, but the rate of cure can be accelerated by heat. The cured rubber exhibits excellent physical and electrical properties. MM544 can be pigmented and used with MM540 Deadener to achieve a range of rubbers with variable hardness values to fit the specific applications. This is especially suited for use in the theatrical and special effects applications.

**Key Features**

- Can be pigmented
- Easy 1 to 1 mix ratio
- fast cure
- Can be softened with MM540

**Food Approvals MM544 No**

**Use and Cure Information**

**How to Use**

**IMPORTANT: MM544A** contains the platinum catalyst, great care should be taken when using automatic dispensing equipment. Please ensure that it is not contaminated by residual hydride containing rubber in the dispensing equipment, as curing will result. If in doubt, it's advised to thoroughly purge the equipment with a suitable hydrocarbon solvent or silicone fluid.

Mix both the A and B parts gently to ensure homogeneity. Place the required amount of A and B parts by weight at the ration of **1 to 1** (A to B) in a clean plastic or metal container of approximately 3 times their volume, and mix until the colour of the mixture is uniform.

Degas by intermittent evacuation, the larger volume of the mixing vessel helps prevent overflow during this operation. In case of automatic dispensing with static mixing head, the two components should be degassed before processing. Recommended vacuum conditions are 30-50 mbar intermittently over 5-10 minutes. Cast the mixture either by gravity or pressure injection.

**Curing Conditions**

The following table offers a guide to the rate of cure of **MM544** at various temperatures, mixing of the components between 15 and 25°C is recommended to ensure adequate pot life for degassing and handling. The pot life can be extended to several hours by chilling the components.

Temperature, °C	Max Cure Time	De-mould Time
25	1 hrs	0.5
100	10 mins	N/A

**Use with MM540 Deadener**

Hardness variation can be achieved by using the additive MM540 at the below mixing ratios by weight:

**Cured Properties after 60 minutes at Room Temperature.**

MM544 A	MM544 B	MM540	Hardness, Shore 00	Hardness, Shore A
50	50	0	78	27
50	50	50	41	N/A
50	50	100	24	N/A
50	50	150	13	N/A
50	50	200	<1	N/A

**Inhibition of Cure**

Great care must be taken when handling and mixing all addition cured silicone elastomer systems, that all the mixing tools (vessels and spatulas) are clean and constructed in materials which do not interfere with the curing mechanism. The cure of the rubber can be inhibited by the presence of compounds of nitrogen, sulphur, phosphorus and arsenic; organotin catalysts and PVC stabilizers; epoxy resin catalysts and even contact with materials containing certain of these substances e.g. moulding clays, sulphur vulcanised rubbers, condensation cure silicone rubbers, onion and garlic.

Property	Test Method	Value
<b>Uncured Product</b>		
Colour A Part:		Translucent
Colour B Part		Translucent
Colour Mixed		Translucent
Appearance:		Viscous liquid
Viscosity:	Brookfield	5000 mPa.s
Catalysed viscosity	Brookfield	5000 mPa.s
Pot Life:		7 minutes *
De-mould time		0.5 hours *
*measured at 23+/-2°C and 65% relative humidity using standard catalyst.		

**Cured Elastomer**

(after 7 days cure at 23+/-2°C and 65% relative humidity)

Tensile Strength:	BS903 Part A2	1.75 MPa
Elongation at Break:	BS903 Part A2	315 %
Youngs Modulus:		0.79MPa
Tear Strength:	BS903 Part A3	4.06 kN/m
Hardness:	ASTM D 2240-95	27° Shore A
Specific Gravity:	BS 903 Part A1	1.07
Linear Shrinkage:		
Coefficient of Thermal Expansion:		
Volumetric		930 ppm / °C
Linear		310 ppm / °C
Min. Service Temperature:		-50°C
Max. Service Temperature:	AFS 1540B	200 °C
All values are typical and should not be accepted as a specification.		

**Health and Safety** - Material Safety Data Sheets available on request.

**Packages** – MM544 is supplied in 2kg, 10kg and 20kg kits and MM540 is supplied in 20 kg drums.

**Storage and Shelf Life** – Expected to be 12 months in original, unopened containers below 30°C.

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