

## MM230 2-Part Addition Cure Moulding Rubber

### Introduction

MM230 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.

### FDA compliance

All components present in the fully cured product are listed in CFR 21, 175.300, "Resinous and polymeric coatings" and CFR 21, 177.2600, "Rubber articles intended for repeated use". Fully cured MM230 satisfies the requirements of CFR21, 175.300 and 177.2600, sub paragraphs (e) and (f) for applications involving both aqueous and fatty foods.

### Key Features

- Easy degassing
- High dimensional stability
- Very low shrinkage (<0,1%)
- Curing accelerated by heat
- Fine details reproduction
- FDA compliant

### Use and Cure Information

#### How to Use

Mix MM230B gently to ensure catalyst homogeneity. Place 100 parts by weight of MM230A and 10 parts by weight of MM230B 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 MM230 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	Cure Time
25	24hours
65	4 to 6 hours
100	1 hour
120	30 minutes
150	20 minutes

Thin section curing is achieved in 30-60 seconds at 150°C

### 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 MM230 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
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#### Uncured Product

Colour:		Red
Appearance:		Viscous liquid
Viscosity:	Brookfield	40000 mPa.s
Catalysed Viscosity:	Brookfield	20000mPa.s
Pot Life:		75 minutes *
De-mould time		7 hours *

\* measured at 23+/-2°C and 65% relative humidity.

#### Cured Elastomer

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

Tensile Strength:	BS903 Part A2	4.00 MPa
Elongation at Break:	BS903 Part A2	650 %
Youngs Modulus:		1.05 MPa
Modulus at 100% Strain:	BS903 Part A2	0.90 MPa
Tear Strength:	BS903 Part A3	25 kN/m
Hardness:	ASTM D 2240-95	30 ° Shore A
Specific Gravity:	BS 903 Part A1	1.30
Linear Shrinkage:		0.08 %
Coefficient of Thermal Expansion:		
Volumetric		510 ppm / °C
Linear		170 ppm / °C
Min. Service Temperature:		-60 °C
Max. Service Temperature:	AFS 1540B	200 °C
FDA Extraction Test:	CFR <u>21</u> , 177.2600	mg/sq. inch
7 hours		0.0469
+2 hours		0.0125

### Electrical Properties

Volume Resistivity:	ASTM D-257	1x10 <sup>13</sup> Ω.cm
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All values are typical and should not be accepted as a specification.

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

**Packages** – 1.1 kg, 5.5 kg and 22 kg kits. Arrangements can be made to supply in other bulk containers.

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

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