Master-Cast™ VR142
Rigid Polyurethane

Introduction

Master-Cast™ VR142 has been formulated for use in vacuum-casting applications where a very rigid product is required with good stiffness, abrasion resistance and chemical resistance characteristics. In addition, with suitable postcure, Master-Cast™ VR142 is capable of withstanding brief periods of exposure to temperatures around 150°C.

Typical Properties

	Property		Typical Value	Units
Components	Colour	Part A	Pale Grey (unless pigmented)	-
		Part B	Pale Straw	-
		Mixed	Grey liquid (unless pigmented)	-
	S.G.	Part A	1.71	-
		Part B	1.22	-
		Mixed	1.58-1.62	-
Mixed Product	Gel Time (100g 20°C)		22	Minutes
	Demould Time (100g 20°C)		90	Minutes
	Full Cure (100g 80°C)		12	Hours
Cured Product	Hardness at full cure		87	Shore D
	Linear shrinkage	(502.5 x 10.0 x 4.0mm)	0.2	%
	Impact Strength	ASTM 638	0.76	J/mm
	Tensile Strength	ASTM 638	52.80	MPa
	Young's Modulus	ASTM 638	680.16	MPa
	Elongation at Break	ASTM 638	10.95	%
	Stiffness	ASTM 638	434.12	MPa

NOTE: Cured product data have been produced by an independent test-house and not optimised data created in-house. If comparing results between manufacturers please ensure other figures are produced in a like manner.

Preparation and Use

The components should be measured to an accuracy of 2% or better. Care should be taking when measuring by volume as this is an inherently inaccurate method unless specific volumetric measuring equipment is used.

Material: Part A – Thorough mixing prior to use, temperature 45°C

Part B – Check product is clear and free from sediment prior to use, temperature 45°C.

NOTE: Take precautions to avoid exposure to isocyanate vapour at this temperature.

Mould: Temperature: 70°C

Postcure: 70°C for 4-6 hours (in mould).

Key Data

Mix Ratios
3.00 A
to
1.00 B
by weight
2.15 A to **1.00 B**
by volume

Viscosities
A: 45,000 mPa.s
B: 120 mPa.s
Mix: 3,700 mPa.s

Temperatures
Materials
45 ºC
Mould
75 ºC

Gel Time
(100g @ 70ºC)
5 Mins

Demould Time
(100g @ 70ºC)
45 Minutes

Full Cure
(100g @ 70ºC)
5 Hours

Hardness
(Shore D)
87 ±2

Handling and Storage

Part A: Read the Safety Data Sheet before using this material. Good housekeeping is important with this material as with all chemicals. Spillages should be wiped up immediately and containers wiped clean after use. Exposure to atmosphere should be minimised and containers sealed as soon as possible after use. Store in the original container in a dry place at 5-25°C. Shelf-Life - 12 months from the date of manufacture when stored correctly in unopened containers.

Part B: Isocyanate spillages can be especially hazardous and the Safety Data Sheet should be consulted for the correct cleaning up procedure. Exposure to atmosphere should be minimised and containers sealed as soon as possible after use. Store in the original container in a dry place at 15-25°C. Shelf-Life - 12 months from the date of manufacture when stored correctly in unopened containers.

Health and Safety

Part A: Not classified according to the requirements of the CHIP regulations. However care should be taken to avoid direct contact and gloves, goggles and impervious overalls should be worn.

Part B: HARMFUL by inhalation. In addition it may cause sensitisation by inhalation and skin contact and is classified as IRRITANT to eyes, respiratory system and skin. At room temperature the vapour hazard is low but care should be taken not to allow vapours to accumulate. This is especially likely if the product is heated. Avoid direct contact with skin and eyes by means of gloves, goggles and impervious overalls.

Availability

1.6kg (1.2kg A + 0.4kg B), 8kg (6kg A + 2kg B), 24kg (18kg A + 6kg B), 320kg (240kg A + 80kg B)

Suitability for Use

The information in this datasheet is given to the best of our knowledge and belief but without warranty or liability. The user must establish the suitability of the material for the intended application by carrying out any appropriate tests. Finished products produced from any batch of our materials must be subjected to comprehensive standards of quality control by the user. No liability will be accepted for direct or consequential losses arising from the use of this material. However any comments or suggestions relating to improving the processing or characteristics of this material will be very welcome.