

Advanced Materials**RenPIM[®] VG 5287**

PARTS IN MINUTES[®] - VACUUM GRADE
TWO COMPONENT, POLYURETHANE VACUUM CASTING SYSTEM FOR RAPID
PROTOTYPING

**KEY
PROPERTIES**

- **Transparent system with good clarity**
- **High flexural strength**
- **UV stabilised**
- **Simulates ABS**

**APPLICATIONS /
DESCRIPTION**

Parts In Minutes[®] - vacuum grade polyurethanes simulate the appearance and physical characteristics of engineering thermoplastics for rapid prototyping. They can be used to produce functional prototype parts suitable for use in all major industrial areas including automotive, aerospace, consumer goods and leisure applications.

RenPIM[®]-VG 5287 is a transparent UV stabilised system with ABS like properties and with high temperature resistant.

PRODUCT DATA

Property	Unit	RenPIM [®] -VG 5287 Polyol	RenPIM [®] -VG 5287 Isocyanate
Appearance Colour	visual	Liquid Pale blue	Liquid Clear
Viscosity at 25°C	m Pa s	ca 3500-4500	ca 30-50
Density	g/cm ³	ca.-1.09	ca. 1.07

PROCESSING

Mix ratio	Parts by weight	Parts by volume
RenPIM [®] -VG 5287 Polyol	100	100
RenPIM [®] -VG 5287 Isocyanate	150	153

Parts In Minutes[®] - vacuum grade polyurethanes are specifically formulated for vacuum casting and therefore require processing via application equipment. Huntsman Advance Materials are pleased to recommend the use of MCP-HEK vacuum casting equipment for the processing of these materials. Hand mixing or manual processing of these materials is not recommended.

Thorough stirring to ensure uniform dispersion of materials is critical, prior to processing. After the components have been mixed, de-aeration under a vacuum for a few minutes is recommended. Materials should be cast into silicone, polyurethane or epoxy moulds which have been pre-heated to 40 - 70 °C.

If a silicone mould is to be used, compatibility with RenPIM[®]-VG 5287 should be checked. If polyurethane or epoxy moulds are to be used, a mould release agent such as QZ13 will be required (The use of a mould release may give a hazy appearance on the part) . However if parts are to be painted or sprayed a non-silicone based release agent should be used.

**TYPICAL
PROPERTIES**

Resin/Hardener mix:		Unit	RenPIM [®] -VG 5287
Potlife at 40°C		mins	ca 4-5
Max. Layer thickness		mm	10
Demoulding time (mould at 40 - 70°C) (dependent on layer thickness)		mins	120

Properties after 16 hours at 100°C

It is recommended that cast parts with thin wall sections or of large dimension be supported during post cure.

Density	ISO 1183	g/cm ³	ca 1.1
Hardness	ISO 868	Shore D	ca 80
Deflection temperature	ISO 75	°C	ca 116
Tg	DSC	°C	120
Impact strength (Charpy)		kJ/m ²	ca 16
Tensile strength	ISO 527	MPa	ca 76
Elongation at break	ISO 527	%	ca 12
Tensile modulus	ISO 527	MPa	ca 2400
Flexural strength	ISO 178	MPa	ca 99
Flexural modulus	ISO 178	MPa	ca 2400
Linear shrinkage (4mm thick)		mm/m	ca 0.25

STORAGE

The resin and hardeners described in this instruction sheet have the shelf lives shown provided they are stored at 2 - 40°C in a dry place and sealed containers, preferably those in which they are supplied.

Both components are sensitive to humidity and should be used soon after opening or resealed under nitrogen after use. If crystallization of either component occurs, condition overnight in original containers at 60°C. Stir or disperse fully and cool to room temperature before use.

PACKAGING

System	RenPIM [®] -VG 5287 Polyol	RenPIM [®] -VG 5287 Isocyanate
Quantity and Weight	6 x 0.667 kg	6 x 1 kg

**HANDLING
PRECAUTIONS****Caution**

Our products are generally quite harmless to handle provided that certain precautions normally taken when handling chemicals are observed. The uncured materials must not, for instance, be allowed to come into contact with foodstuffs or food utensils, and measures should be taken to prevent the uncured materials from coming in contact with the skin, since people with particularly sensitive skin may be affected. The wearing of impervious rubber or plastic gloves will normally be necessary; likewise the use of eye protection. The skin should be thoroughly cleansed at the end of each working period by washing with soap and warm water. The use of solvents is to be avoided. Disposable paper - not cloth towels - should be used to dry the skin. Adequate ventilation of the working area is recommended. These precautions are described in greater detail in the Material Safety Data sheets for the individual products and should be referred to for fuller information.

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