# RapidVac<sup>™</sup> VA-274

### Polyurethane Thermoset Elastomer

#### Innovative Polymers, Inc.

#### Message:

VA-274 is a water clear, rigid polyurethane formulated for room temperature hand-batch or vacuum assisted casting methods. Excellent physical properties can be obtained without the utilization of mercury, MOCA, or TDI. VA-274 is low viscosity to be used in applications with thin wall sections for excellent flow rates.

| General Information               |                   |       |             |  |
|-----------------------------------|-------------------|-------|-------------|--|
| Features                          | High Flow         |       |             |  |
|                                   | High Rigidity     |       |             |  |
|                                   | Low Viscosity     |       |             |  |
|                                   |                   |       |             |  |
| RoHS Compliance                   | RoHS Compliant    |       |             |  |
| Appearance                        | Clear/Transparent |       |             |  |
| Processing Method                 | Vacuum Casting    |       |             |  |
| Physical                          | Nominal Value     | Unit  | Test Method |  |
| Specific Gravity                  |                   |       |             |  |
| Hardener                          | 1.05              | g/cm³ |             |  |
| Cured                             | 1.08              | g/cm³ |             |  |
| Base Resin                        | 1.16              | g/cm³ |             |  |
| Molding Shrinkage - Flow          | 0.50 to 1.0       | %     | ASTM D2566  |  |
| Mechanical                        | Nominal Value     | Unit  | Test Method |  |
| Flexural Modulus                  | 2520              | MPa   | ASTM D790   |  |
| Flexural Strength                 | 115               | MPa   | ASTM D790   |  |
| Impact                            | Nominal Value     | Unit  | Test Method |  |
| Notched Izod Impact               | 53                | J/m   | ASTM D256   |  |
| Thermal                           | Nominal Value     | Unit  | Test Method |  |
| Deflection Temperature Under Load |                   |       | ASTM D648   |  |
| 0.45 MPa, Unannealed              | 74.0              | °C    |             |  |
| 1.8 MPa, Unannealed               | 70.0              | °C    |             |  |
| Thermoset                         | Nominal Value     | Unit  | Test Method |  |
| Thermoset Components              |                   |       |             |  |

Mix Ratio by Volume: 55

Hardener

Mix Ratio by Weight: 50

| Resin                       | Mix Ratio by Volume: 100                |      |             |
|-----------------------------|---|------|-------------|
| Demold Time                 | 240 to 480                              | min  |             |
| Uncured Properties          | Nominal Value                           | Unit | Test Method |
| Viscosity                   |   |      |             |
| 1                           | 0.73                                    | Pa·s |             |
| 2                           | 0.75                                    | Pa·s |             |
| 3                           | 0.90                                    | Pa·s |             |
| Curing Time <sup>4</sup>    | 40                                      | hr   |             |
| Gel Time                    | 15 to 21                                | min  |             |
| Cured Properties            | Nominal Value                           | Unit | Test Method |
| Shore Hardness (Shore D)    | 80 to 86                                |      | ASTM D2240  |
| Tensile Strength            | 67.6                                    | MPa  | ASTM D638   |
| Tensile Elongation at Break | 7.0                                     | %    | ASTM D638   |
| NOTE                        |   |      |             |
| 1.                          | Hardener                                |      |             |
| 2.                          | Mixed                                   |      |             |
| 3.                          | Resin                                   |      |             |
| 4.                          | 24 hours at 77°F + 16 hours at<br>180°F |      |             |

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