

Technical Data

envisionTEC R05 / R11

The **envisionTEC** R05/R11 are accurate and functional resins for producing robust and durable parts on all Perfactory® and Vanquish® systems.

Description

envisionTEC R05/R11 are liquid, photo-reactive acrylates with a wide processing latitude, which are used to produce parts with high quality up-facing and down-facing surfaces. The parts exhibit superior fatigue strength properties and excellent tolerance to a broad temperature and humidity range during and after build. The material offers distinguished chemical resistance and a good balance of properties between rigidity and functionality.

Application

envisionTEC R05/R11 are ideal for creating master patterns in rubber molding applications and are suitable for electrical housings, medical products, snap-fit parts, Jewelry products, consumer products and automobile applications.

Mechanical Properties

Method	Description	envisionTEC R05	envisionTEC R11
DIN 1342-2 DIN EN ISO 527-1 DIN EN ISO 527-1 DIN EN ISO 178	Viscosity Tensile Strength Elongation at Break Elongation at Yield	643.1 mPa*s 49.7 MPa 5.24 % 7.93 %	806.4 mPa*s 54.0 MPa 3.70 % 7.94 %
DIN ISO 178 DIN ISO 178	Flexural Strength Flexural Modulus	79.7 MPa 1960 MPa	87.9 MPa 2250 MPa
DIN ISO 1183-1	Density	1.215 g/cm ³	1.219 g/cm ³
DIN EN ISO 180	Izod Impact-Notched	5.05 kJ/m ²	4.59 kJ/m ²
DIN ISO 868	Hardness (Shore D)	86 Shore	87 Shore
DIN 53765	Glass Transmission Temperature	120 °C - 150 °C	151 °C - 192 °C

Cleaning, drying and post curing is to be carried out as described in **envisionTEC**'s postprocessing instructions for this material. Recommendation: use incubator. Post curing of parts in Otofash G171 with 4,000 flashes.

Thermal and Electrical Properties

Method	Description	Value
E381-00	C.T.E. -40 °C - 0 °C	55 - 63 µm/m* K
E381-00	C.T.E. 0 °C - 50 °C	88 - 94 µm/m* K
E381-00	C.T.E. 50 °C - 100 °C	170 - 189 µm/m* K
E381-00	C.T.E. 100 °C - 150 °C	192 - 201 µm/m* K
D648-98c	HDT @ 0.46 MPa	84.5 - 102.6 °C
D648-98c	HDT @ 1.81 MPa	65.4 - 88.0 °C

HDT = Deflection Temperature

All data provided is preliminary data and must be verified by the individual user.

