Ticona
Engineering Polymers

GUR® HOSTALLOY 731 | PE | Specialty

Description

Hostalloy 731 is a linear polyolefin resin with a molecular weight exceeding most high molecular weight high density polyethylene (HMW-HDPE) resins. The very high molecular weight of this resin yields several unique properties including superior abrasion resistance and impact strength. Excellent properties also include a low coefficient of friction that results in self-lubricating, non-stick surfaces after processing.

This resin is particularly suitable for injection molding products or for standard extrusion operations.

This grade is melt processible and has good impact strength and abrasion resistance relative to many other resins, but not on the level of UHMW-PE, including injection molding grade GUR 5113.

Complies with the following:

BgVV Recommendation III, FDA 21 CFR Paragraph 177.1520,
Monographs VI.2.2.1 and VI.1.2.2.2 (PE) in the European
Pharmacopoeia, 2nd edition, as well as similar monographs in
national pharmacopoeias, e.g. German Pharmacopoeia 9 (DAB 9);
Monograph VI.1.2.2.2 applies only to uncolored PE-UHMW.

BgVV = Bundesinstitut für gesundheitlichen Verbraucherschutz und Veterinärmedizin (Federal German Health Office)
CFR = Code of Federal Regulations
DAB = Deutsches Arzneibuch (German Pharmacopoeia)
FDA = Food and Drug Administration (USA)

Physical properties	Value	Unit	Test Standard
Density	**950**	kg/m³	ISO 1183
Mass melt-flow rate (MFR) 190°C/21.6 kg	**10**	g/10 min	ISO 1133
Viscosity number	**290**	cm³/g	ISO 307, 1157, 1628

Mechanical properties	Value	Unit	Test Standard
Tensile modulus (1mm/min)	**850**	MPa	ISO 527-2/1A
Tensile stress at yield (50mm/min)	**19**	MPa	ISO 527-2/1A
Tensile stress at break (50mm/min)	**>20**	MPa	ISO 527-2/1A
Charpy notched impact strength @ 23°C	**>80p**	kJ/m²	ISO 179/1eA
Charpy notched impact strength @ -30°C	**>60p**	kJ/m²	ISO 179/1eA
Charpy impact strength (14° V-notch both sides)	**15**	kJ/m²	ISO 11542-2
Wear by sandslurry method (based on GUR 4120=100)	**350**	-	Internal

Thermal properties	Value	Unit	Test Standard
Vicat softening temperature B50 (50°C/h 50N)	**80**	°C	ISO 306
Coeff.of linear therm. expansion (parallel)	**2**	E-4/°C	ISO 11359-2
Flammability @1.6mm nom. thickn.	**HB**	class	UL94
Thermal conductivity at 23°C	**0.41**	W/(m K)	Internal
Specific heat at 23°C	**1.84**	kJ/(kg-°K)	Internal

Electrical properties	Value	Unit	Test Standard
Relative permittivity - 100 Hz	**2.9**	-	IEC 60250
Relative permittivity - 1 MHz	**2.9**	-	IEC 60250
Dissipation factor - 100 Hz	**2**	E-4	IEC 60250
Dissipation factor - 1 MHz	**4**	E-4	IEC 60250

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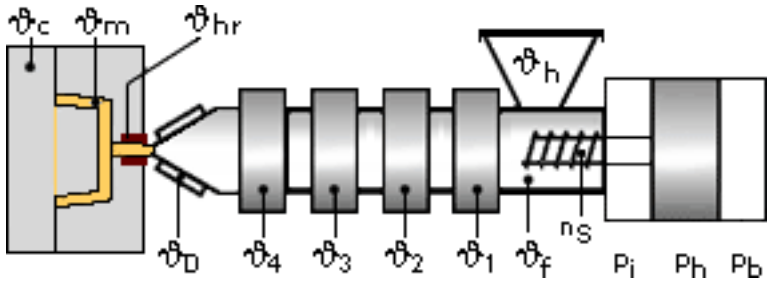
Electrical properties	Value	Unit	Test Standard
Volume resistivity	**>1E12**	Ohm*m	IEC 60093
Surface resistivity	**>1E12**	Ohm	IEC 60093
Electric strength	**40**	kV/mm	IEC 60243-1
Comparative tracking index CTI	**600**	-	IEC 60112

Typical injection moulding processing conditions



Maximum residual moisture content: 0.1500%

Processing Temperatures:

	ϑ Cavity	ϑ Melt	ϑ Hot Runner	ϑ Die	ϑ 4	ϑ 3	ϑ 2	ϑ 1	ϑ Feeding	ϑ Hopper
min (°C)	30	180	180	180	180	180	180	180	15	15
max (°C)	90	280	280	280	280	280	280	190	40	30

Processing Pressures:

	Injection Pressure	Holding Pressure	Back Pressure
min (bar)	700	400	0
max (bar)	1400	1200	5

Injection speed: High
No info

Pre-drying conditions:
Not needed

None

Drying time: 2 h

Drying temperature: 0 - 80 °C

Special information:
No special information available.