

General Productinformation

Elastollan® 1185 A 10HFFR000



® = registered trademark of BASF Polyurethanes GmbH

Characteristic:

Halogen-free flame retardant, thermoplastic Polyether-Polyurethane with outstanding hydrolysis resistance, low temperature flexibility and high resistance to micro-organisms.

Property	Unit	Value	Test method according to
Density	g/cm ³	1.42	DIN EN ISO 1183-1-A
Hardness	Shore A	86	DIN ISO 7619-1 (3s)
Tensile strength	MPa	23	DIN 53504-S2
Elongation at break	%	580	DIN 53504-S2
Tear strength	N/mm	55	DIN ISO 34-1Bb
Stress at 20% elongation	MPa	3.6	DIN 53504-S2
Stress at 100% elongation	MPa	6	DIN 53504-S2
Stress at 300% elongation	MPa	7.8	DIN 53504-S2
Sauerstoff-Index	%	33	ISO 4589-1/-2
Tensile strength after storage in water at 80°C for 42 days	MPa	12	DIN 53504-S2
Elongation at break after storage in Water at 80°C for 42 days	%	750	DIN 53504-S2

Test plaques are manufactured by extrusion from pre-dried granules (water content of $\leq 0,02\%$, melt temperature ≥ 180 °C). Test plaques are aged 20 hrs at 100°C. Specimens are cut from test plaques. Test conditions: 23°C \pm 2°C and 50% \pm 6% rel. humidity.

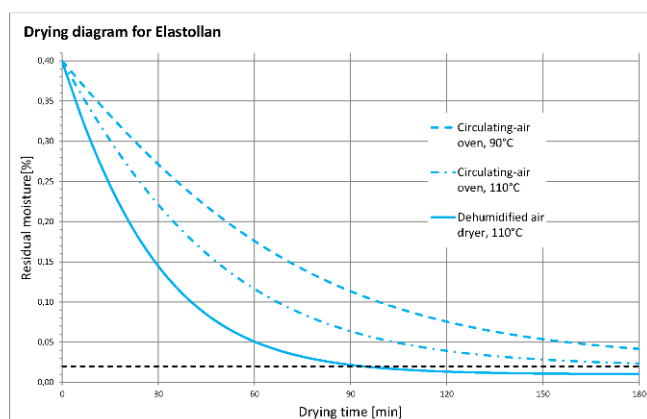
These are general guidance data. No statement regarding specific properties. All supplies are subject to detailed specifications to be agreed-up in each individual case and containing, among others, the tolerances to be specified therein.

Delivery form and packing:

Pellets; the packaging dependent upon grade and agreement.

Drying:

Elastollan® 1185 A 10HFFR000 is hygroscopic. Elastollan® 1185 A 10HFFR000 must be dried before processing for 3-4 hours at 80-90°C in a dehumidified air dryer. Additives have to be dried with the granules. The water content of the granules should not exceed 0,02%.



Injection moulding:

When injecting the melt should be bubble and foam free, if not we recommend to adjust the drying temperature accordingly.

Following temperatures are guide values, showing the tendency of temperature profile. These may vary depending on kind of machine and mould design.

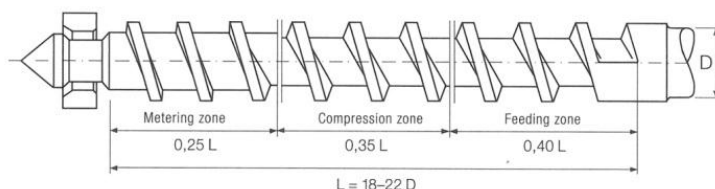
Feeding [°C]	Zone1 [°C]	Zone2 [°C]	Zone3 [°C]	Zone4 [°C]	Die [°C]	Melt-temp [°C]	Mould-temp. [°C]
40	205-215	210-220	215-225	215-225	220-230	215-225	20-40

General Recommendations:

Circumferential speed (screw speed)		< 0,2 m/s 12 m/min					
Holding pressure (System pressure)		5 - 15 bar					
Injection speed		rel. low					
Retention time of melt (including hot-runner)		< 10 min					
Screw speed	d_{screw} [mm]	30	45	50	60		
	n_{max} [min^{-1}]	135	85	70	60		

Mashine Design:

Scwew injectionmoulding mashines with single-flighted, 3-zone scwews are suitable for the processing of Elastollan® 1185 A 10HFFR000. Short compression-zone scwews are not suitable. The compression ratio should be around 1:2 and should not exceed 1:3. A check ring (shut-off ring) should be incorporated.



Extrusion:

Following temperatures are guide values, showing the tendency of temperature profile. These may vary depending on kind of machine and mould design.

Feeding [°C]	Zone1 [°C]	Zone2 [°C]	Zone3 [°C]	Zone4 [°C]	Adaptor [°C]	Geard [°C]	Die [°C]
cooled*	160	170	180	190	190	190	180

*in case of using a grooved feeding zone

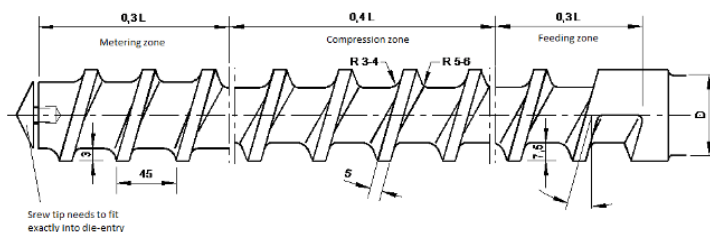
General Recommendations: circumferential speed 0,15m/s max.

Screw speed	d _{screw} [mm]	30	45	50	60
	n _{max} [min ⁻¹]		80	60	50

For start-up use screw-speed of about 0,05m/s and starve feeding in order to control screw torque and engine power consumption.

Mashine Design:

Single screw extruder with a compression ratio of 1:2 to 1:3, preferably 1:2,5, are recommended for processing Elastollan® 1185 A 10HFFR000. BASF experience shows that three section screws with L/D ratio of 25 to 30 are most suitable. Three sections screws should have continued constant pitch of 1D. The radial clearance between screw and barrel should be 0,1 to 0,2mm. For processing Elastollan® 1185 A 10HFFR000, multizone screws, e.g. barrier screws, have also proven suitable. Short screws with high compression ratio are unsuitable for Elastollan®.



Processing:

In cool and dry storage and in the original, undamaged and sealed containers, the products are processable for at least 6 months from delivery date. Thereafter, we do not give any warranty or guarantee regarding the processability and/or shelf life of the products. Warranties regarding buyer's rights in case of defects remain unaffected hereby.

Storage::

Elastollan® 1185 A 10HFFR000 is hygroscopic, therefore storage in dry conditions and original container is recommended. Additional information about drying, processing temperatures and post-treatment are given in our product brochure "Thermoplastic Polyurethane Elastomers (TPU) Elastollan®-Processing Recommendations".

Hazard indication:

No particular hazards known. Please have a look at the Material Safety Data Sheet before handling.

Waste Disposal:

More detailed information is provided in our country-specific pamphlet and the Material Safety Data Sheet.

Important Information:

There are national and international laws and regulations to consider if it is intended to produce consumer articles (e.g. articles that necessitate food or skin contact, toys etc.) or medical objects from BASF Polyurethanes GmbH products. Where specific regulations do not exist, the current legal requirements of the European Union for consumer articles as well as medical products should be used as reference. Consultation with the BASF Polyurethanes GmbH Sales Office and our Ecology and Product Safety Department is strongly recommended.

The data contained in this document as well as advice or other support services are based on our current knowledge and experience. In view of many factors that may affect processing and application of our products, this data does not relieve processors from carrying out their own investigations and tests, particularly with regards to the suitability of the goods supplied for the processes and purposes they intend to use them for; neither does this data imply any guarantee of certain properties, or the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights, measured values etc. given herein may change without prior notice and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.

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