Ultraform® W2320 003 PRO AT

POM BASF

Very free-flowing, rapidly solidifying grade for use where processing is extremely difficult but mechanical properties are lower.

Ultraform® PRO offers a comprehensive service package, which supports customers in product development for the medical technology market.

Ultraform® PRO complies with the basic requirements of Pharmacopoeia and Biocompatibility-Tests in Europe, United States and Japan respectively as specified below. However, the biocompatibility tests were recorded on tests specimens of Ultraform PRO to show compatibility and potential suitability of the material in general. The biocompatibility-tests and the other tests listed below are not part of any continuous production control.

European Pharmacopoeia, Japanese Pharmacopoeia:
The composition of the product complies with the basic requirements of the European Pharmacopoeia 8th Edition, Chap. 3.2.2. "Plastic Containers and Closures for Pharmaceutical Use" and with the basic requirements of the Japanese Pharmacopoeia,16th Edition, General Information, “17. Plastic Containers for Pharmaceutical Products”. However, suitability for the end application concerned including observation of given limitations and toxicological thresholds have to be ensured on the final article by the producer.

US Pharmacopoeia: Biological Reactivity Tests, USP Plastic Class VI (USP VI)

ISO 10993-5: Biological Evaluation of Medical Devices Part 5: Test for Cytotoxicity

DMF: A Drug Master File (DMF) has been registered at FDA for Ultraform® PRO.

Food Contact: Ultraform® PRO is in compliance with multiple regional food contact regulations, especially for Europe and United States.

Additional compliances may also be available. Please contact your local representative or the Ultraplaste Infopoint (E-Mail: ultraplaste.infopoint@basf.com, Telefon: 49 621-60-78780, Fax: 49 621-60-78730).

For notice:
However, BASF has not designed or tested its plastics with respect to all of the special requirements related to their use in medical devices (defined in risk classes I to III according to the European and US Medical Device legislation) and pharmaceutical applications. Therefore BASF makes no warranties, express or implied, concerning the suitability of any BASF plastics for use in any medical device and pharmaceutical applications.

Abbreviated designation according to ISO 1043-1: POM
Designation according to ISO 29988-POM-K,,M-GNR,5-2

流变性能	数值	单位	试验方法
ISO数据			
熔体体积流动速度, MVR	25	cm³/10min	ISO 1133
温度	190	°C	-
载荷	2.16	kg	-
模塑收缩率, 平行	2.0	%	ISO 294-4, 2577
模塑收缩率, 垂直	2.1	%	ISO 294-4, 2577

机械性能	数值	单位	试验方法
ISO数据			
拉伸模量	2850	MPa	ISO 527
屈服应力	65	MPa	ISO 527
屈服伸长率	8	%	ISO 527
名义断裂伸长率	24	%	ISO 527
拉伸蠕变模量, 1h	2100	MPa	ISO 899-1
拉伸蠕变模量, 1000h	1350	MPa	ISO 899-1
无缺口简支梁冲击强度, +23°C	190	kJ/m²	ISO 179/1eU
无缺口简支梁冲击强度, -30°C	190	kJ/m²	ISO 179/1eU
简支梁缺口冲击强度, +23°C	4.5	kJ/m²	ISO 179/1eA
简支梁缺口冲击强度, -30°C	4	kJ/m²	ISO 179/1eA

热性能	数值	单位	试验方法
ISO数据			
熔融温度, 10°C/min	166	°C	ISO 11357-1/-3
热变形温度, 1.80 MPa	100	°C	ISO 75-1/-2
热变形温度, 0.45 MPa	156	°C	ISO 75-1/-2

维卡软化温度, 50°C/h 50N	150	°C	ISO 306
线性热膨胀系数, 平行	110	E-6/K	ISO 11359-1/-2
1.5mm名义厚度时的燃烧性	HB	class	UL 94
测试用试样的厚度	1.6	mm	-
UL注册	是的	-	-
厚度为h时的燃烧性	HB	class	UL 94
测试用试样的厚度	0.8	mm	-
UL注册	是的	-	-
燃烧性 - 氧指数	15	%	ISO 4589-1/-2

电性能	数值	单位	试验方法
ISO数据			
相对介电常数, 100Hz	3.8	-	IEC 62631-2-1
相对介电常数, 1MHz	3.8	-	IEC 62631-2-1
介质损耗因子, 100Hz	10	E-4	IEC 62631-2-1
介质损耗因子, 1MHz	50	E-4	IEC 62631-2-1
体积电阻率	1E11	Ohm*m	IEC 62631-3-1
表面电阻率	1E13	Ohm	IEC 62631-3-2
介电强度	40	kV/mm	IEC 60243-1
相对漏电起痕指数	600	-	IEC 60112

其它性能	数值	单位	试验方法
ISO数据			
吸水性	0.8	%	类似ISO 62
吸湿性	0.2	%	类似ISO 62
密度	1410	kg/m³	ISO 1183

流变计算用参数	数值	单位	试验方法
ISO数据			
喷射温度	110	°C	-

试样制备条件	数值	单位	试验方法
ISO数据			
注塑, 熔体温度	200	°C	ISO 294
注塑, 模具温度	90	°C	ISO 294
注塑, 注射速度	200	mm/s	ISO 294

加工推荐（注塑）	数值	单位	试验方法
预干燥-温度	100	°C	-
预干燥-时间	3	h	-
加工湿度	≤ 0.2	%	-
注塑熔体温度	190 - 230	°C	-
模具温度	60 - 120	°C	-

特征

加工方法
注塑

供货形式
粒料

添加剂
脱模助剂

生态估价
医用级, Biocompatibility ISO 10993, US药物六级认证, Drug Master File, 食物接触声明

应用
药物

注塑

PREPROCESSING
Pre/Post-processing, max. allowed water content: .2 %
Pre/Post-processing, Pre-drying, Temperature: 100 °C
Pre/Post-processing, Pre-drying, Time: 3 h

PROCESSING
injection molding, Melt temperature, range: 190 - 230 °C
injection molding, Melt temperature, recommended: 200 °C
injection molding, Mold temperature, range: 60 - 120 °C
injection molding, Mold temperature, recommended: 90 °C
injection molding, Dwell time, thermoplastics: 10 min

Processing

Usual single-flighted three-section screws with an effective screw length of at least 15 D, better 20 - 23 D are suitable for the injection molding of Ultraform.

Pretreatment

Granules or pellets in original packaging can be processed without any special pretreatment. Granules or pellets which have become moist due to prolonged or incorrect storage (e.g. by formation of condensed water) must be dried in dehumidifying or recirculating air dryers for approx. 3 hours at about 100 - 110 °C. The moisture content should not exceed 0.2 %.

Postprocessing

If parts were produced at a comparatively low mold temperature (e.g. in order to obtain short cycle times) and must not change their geometry in use thermal postprocessing inducing dimensional changes by postcrystallization may be necessary. In such cases parts should be stored in an oven with recirculated air at temperatures of 100 - 130 °C until dimensions don't change significantly any further. The time needed for this has to be determined experimentally.

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