

Material Data Sheet U203-D57

Polyurethane U203-D57 – dark blue (FDA)

General

U203-D57 is a hydrolysis resistant PU (H-PU) composed of prepolymers based on polyoxytetramethylene glycol (PTMEG) and diphenylmethane diisocyanate (MDI). The hardness is adjusted at 57 +/-2 Shore D which makes it an excellent extrusion resistant material. The resistance to most common hydraulic fluids and oil water emulsions makes it a very universal material for seal applications.

Physical properties

Density:	DIN 53479	g/cm ³	1,13
Hardness at 20 °:	DIN 53505	Shore D	57+ /-2
100% Modulus:	DIN 53504	N/mm ²	> 18
Tensile strength:	DIN 53504	N/mm ²	> 30
Elongation at break:	DIN 53504	%	330
Tear strength:	DIN 53515	kN/m	125
Rebound resilience:	DIN 53512	%	42
Compression set:*	DIN 53517	%	32
Hardness at -5 °:	DIN 53505	Shore D	57
Hardness at +80 °C:	DIN 53505	Shore D	52
Min. service temperature:		°C	-30
Max. service temperature:		°C	90

*) Compression set: 25% deflexion 22 hours at 70 °C, after 3 weeks aging.

Chemical resistance

Water up to 90°	R	Vegetable oils	R
Sea water	R	Silicone oils	R
Steam	U	Biodegradable oils	R
HFA, HFB fluids	R	Fuels	S
HFC fluids	S	Ozone, Oxygen (cold)	R
HFD fluids	U	Air up to 100°	R
Mineral oils	R	Air up to 150°	U

Key to chemical resistance: **R = resistant** **S = suitable** **U = unsuitable**

FDA certification (n-Hexane and water extraction test)

We, Seal Maker Produktions und Vertriebs GmbH, certify that the following polyurethane elastomer system "U203-D57 polyurethane dark blue" is approved for the use in applications that will come in contact with dry, and/or aqueous and/or fatty foodstuff. Tests have been performed in accordance with the US code for federal reg. 177-2600. Both n-Hexane and water extractables tests acc. to FDA CFR 177-2600 were performed by Akron Polymer Laboratory, Ohio, U.S.A. The tests determine if elastomer formulations can be used with dry, and/or wet, and/or oily foodstuffs. The results clearly show that the formulation passed the FDA requirements.

Analysis and Evaluation

The mentioned properties are fundamental values for polyurethane products. Values mentioned above are corresponding to the European ASTM and DIN standards and have been tested on test samples in the laboratory. All immersion tests in the laboratory are made on test samples under normal conditions for sealing products.