

# GUR® 4550

GUR®

UHMW-PE powder grade

## Product information

Resin Identification	(PE-UHMW)	ISO 1043
Part Marking Code	>(PE-UHMW)<	ISO 11469
Average molecular weight	8.7E6 g/mol	Margolies' equation
Average particle size, d50	120 µm	laser scattering

## Rheological properties

Viscosity number	3700 cm³/g	ISO 307, 1628
Intrinsic viscosity	3000	ISO 307, 1628

## Typical mechanical properties

Tensile modulus	600 MPa	ISO 527-1/-2
Tensile stress at yield, 50mm/min	19 MPa	ISO 527-1/-2
Tensile strain at yield, 50mm/min	16 %	ISO 527-1/-2
Tensile stress at 50% strain	19 MPa	ISO 527-1/-2
Tensile stress at break, 50mm/min	43 MPa	ISO 527-1/-2
Nominal strain at break	420 %	ISO 527-1/-2
Elongational stress F, 150/10	0.5 MPa	ISO 21304-2
Charpy double notched impact strength, 23°C	180 kJ/m²	ISO 21304-2
Poisson's ratio	0.47 <sup>[C]</sup>	
Shore D hardness, 15s	60	ISO 48-4 / ISO 868

[C]: Calculated

## Tribological properties

Wear by sandslurry method (based on GUR 4120=100)	85
--	----

## Thermal properties

Vicat softening temperature, 50°C/h 50N	80 °C	ISO 306
---	-------	---------

## Electrical properties

Volume resistivity	1E12 Ohm.m	IEC 62631-3-1
Surface resistivity	1E12 Ohm	IEC 62631-3-2

## Physical/Other properties

Density	930 kg/m³	ISO 1183
Bulk density	470 kg/m³	ISO 60

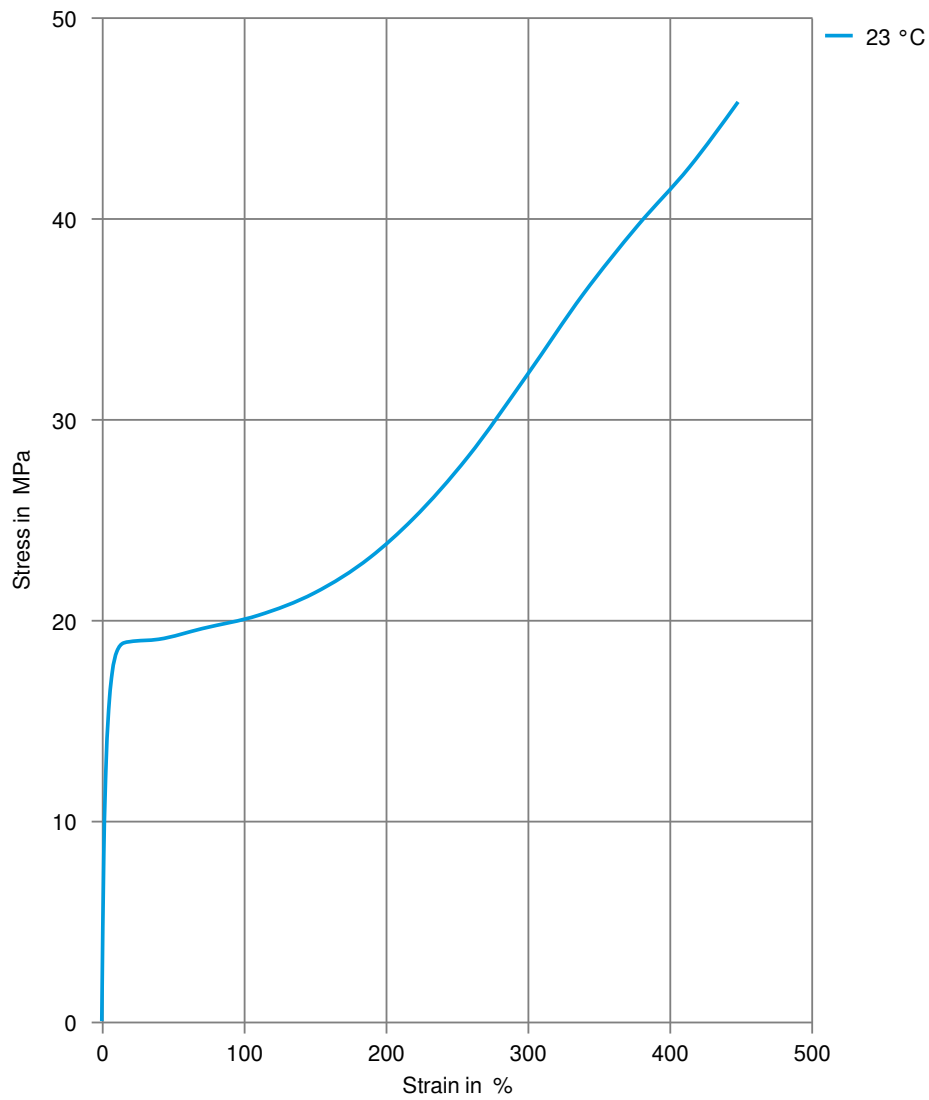
## Characteristics

Processing	Ram Extrusion
Delivery form	Powder
Special characteristics	Hydrolysis resistant, Low wear / Low friction, Chemical resistant

# GUR® 4550

GUR®

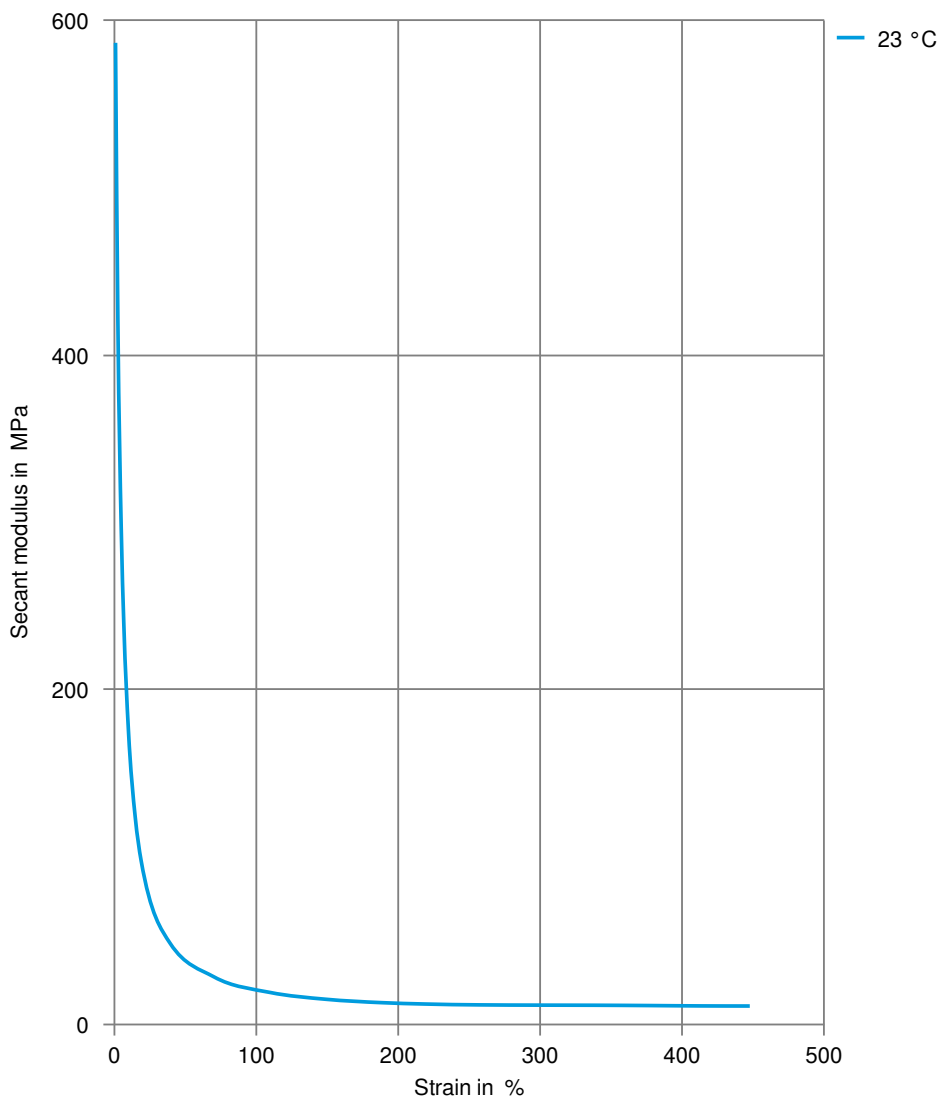
## Stress-strain



# GUR® 4550

GUR®

## Secant modulus-strain



Printed: 2025-05-30

Page: 3 of 3

Revised: 2024-07-30 Source: Celanese Materials Database

NOTICE TO USERS: Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colourants or other additives may cause significant variations in data values. Properties of moulded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design, processing conditions and environmental exposure. Other than those products expressly identified as medical grade (including by MT® product designation or otherwise), Celanese's products are not intended for use in medical or dental implants. Regardless of any such product designation, any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use. To the best of our knowledge, the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy and completeness of such information. The information contained in this publication should not be construed as a promise or guarantee of specific properties of our products. It is the sole responsibility of the users to investigate whether any existing patents are infringed by the use of the materials mentioned in this publication. Moreover, there is a need to reduce human exposure to many materials to the lowest practical limits in view of possible adverse effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones that exist. We recommend that persons intending to rely on any recommendation or to use any equipment, processing technique or material mentioned in this publication should satisfy themselves that they can meet all applicable safety and health standards. We strongly recommend that users seek and adhere to the manufacturer's current instructions for handling each material they use, and entrust the handling of such material to adequately trained personnel only. Please call the telephone numbers listed for additional technical information. Call Customer Services for the appropriate Materials Safety Data Sheets (MSDS) before attempting to process our products.

© 2025 Celanese or its affiliates. All rights reserved. Celanese®, registered C-ball design and all other trademarks identified herein with ®, TM, SM, unless otherwise noted, are trademarks of Celanese or its affiliates. Fortron is a registered trademark of Fortron Industries LLC.