

Tribological data of mould polymerized SUSTAMID - grades

Data determined by comparative pin-disc tests according ISO 7148

Test conditions:

Polymer pin	6 mm diameter
Steel disc:	100Cr6, 110 mm diameter roughness $R_p = 0,30 - 0,60 \mu\text{m}$ roughness $R_a = 0,08 - 0,12 \mu\text{m}$
Relative sliding velocity:	0,3m/s, slide track radius 51,5mm
Specific test load:	3,0 MPa
"p.v - value":	0,9 (relatively high)
Ambient temperature:	21+/- 3°C
Intermediate medium:	none, unlubricated – technical dry

<u>SUSTAMID grade</u>	Mean specific <u>coefficient of wear K_w</u> [10 ⁻⁶ mm ³ / Nm]	Mean specific <u>rate of wear w_v</u> [µm/km]	<u>Coefficient of friction - no lubrication*</u>			
			minimum <u>dynamic</u>	maximum <u>dynamic</u>	minimum <u>static</u>	maximum <u>static</u>
<u>SUSTAMID 6 G</u> <i>not modified</i>	3,3	10,0	0,42	0,58	0,46	0,64
<u>SUSTAMID 6 GMO</u> <i>MoS2 modified</i>	3,2	9,6	0,43	0,57	0,44	0,58
<u>SUSTAMID 6 GM</u> <i>MoS2 modified</i>	2,9	8,8	0,55	0,59	0,46	0,51
<u>SUSTAMID 6 GOL</u> <i>Lubricant incorporated</i>	2,9	8,6	0,47	0,53	0,45	0,58
<u>SUSTAMID 6 GLU</u> <i>Sliding additive incorporated</i>	2,3	6,8	0,33	0,55	0,23	0,32
<u>SUSTAGLIDE</u> <i>Sliding additive incorporated</i>	1,8	5,4	0,25	0,38	0,35	0,45
<u>SUSTAGLIDE-plus</u> <i>Sliding additive incorporated and reinforced</i>	1,0	3,0	0,23	0,25	0,17	0,19

*In case of an externally lubricated system coefficient of friction is determined by the lubricant applied.

Please note:

Friction and wear are not material properties, but system - properties, depending upon many parameters of the overall tribological system. Therefore comparison of tribological material properties only on behalf of data for wear rate and coefficient of friction is useless. Without knowledge of testing or operating conditions of the system under which the data were determined comparison do not result in correct interpreted tribological properties of materials. Above stated data were determined under exactly the same test conditions to ensure comparable friction and wear properties.

The following applies to Polyamides:

Under the influence of moisture absorption, the mechanical properties change. The material becomes tougher and more resistant to impact, the modulus of elasticity declines. Depending on the environmental atmosphere, the temperature and the period of moisture absorption, only the surface layer is affected by alterations of property to a certain depth. On thick-walled parts, the center area remains unaffected. The above stated tribological data are determined with specimen in dry condition. Depending upon the tribological system moist material may show different properties.

For further information to our engineering polymers please see our "SUSTA - Forum" issues.

The values indicated result from numerous individual measurements for an approximation of the values and are to our today's knowledge. They serve as information about our products and are presented as a guide to choose from our range of materials. This, however, does not include an assurance of specific properties or the suitability for particular application purposes that are legally binding. Since the properties also depend on the dimension of the semi-finished products and the degree of crystallisation (e.g. nucleating by pigments), the actual values of the properties of a particular product may differ from the indicated values.