

**Grilon TSC-20/4 EC black 9832**

PA666-CF20

EMS-GRIVORY | a unit of EMS-CHEMIE AG

**Product Texts**

Product designation according to ISO 1874:

PA66+PA6, MHRS, 14-160N, CF20

Mechanical properties	dry / cond	Unit	Test Standard
Tensile Modulus	<b>16000 / 10000</b>	MPa	ISO 527-1/-2
Stress at break	<b>230 / 160</b>	MPa	ISO 527-1/-2
Strain at break	<b>3 / 6</b>	%	ISO 527-1/-2
Charpy impact strength (+23°C)	<b>65 / 90</b>	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy impact strength (-30°C)	<b>60 / 60</b>	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength (+23°C)	<b>8 / 15</b>	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength (-30°C)	<b>5 / 5</b>	kJ/m <sup>2</sup>	ISO 179/1eA

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature (10°C/min)	<b>260 / -</b>	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	<b>240 / -</b>	°C	ISO 75-1/-2
Temp. of deflection under load (8.00 MPa)	<b>185 / -</b>	°C	ISO 75-1/-2
Coeff. of linear therm. expansion (parallel)	<b>20 / -</b>	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion (normal)	<b>90 / -</b>	E-6/K	ISO 11359-1/-2
Burning Behav. at thickness h	<b>HB / -</b>	class	IEC 60695-11-10
Thickness tested	<b>0.8 / -</b>	mm	IEC 60695-11-10
Max. usage temperature (long term)	<b>90 - 120</b>	°C	ISO 2578
Max. usage temperature (short term)	<b>200</b>	°C	EMS

Electrical properties	dry / cond	Unit	Test Standard
Volume resistivity	<b>100000 / 100000</b>	Ohm*m	IEC 60093
Surface resistivity	<b>- / 1000000</b>	Ohm	IEC 60093

Other properties	dry / cond	Unit	Test Standard
Water absorption	<b>5 / -</b>	%	Sim. to ISO 62
Humidity absorption	<b>1.5 / -</b>	%	Sim. to ISO 62
Density	<b>1220 / -</b>	kg/m <sup>3</sup>	ISO 1183

Rheo/Phys properties	dry / cond	Unit	Test Standard
Molding shrinkage (parallel)	<b>0.1 / -</b>	%	ISO 294-4, 2577
Molding shrinkage (normal)	<b>0.3 / -</b>	%	ISO 294-4, 2577

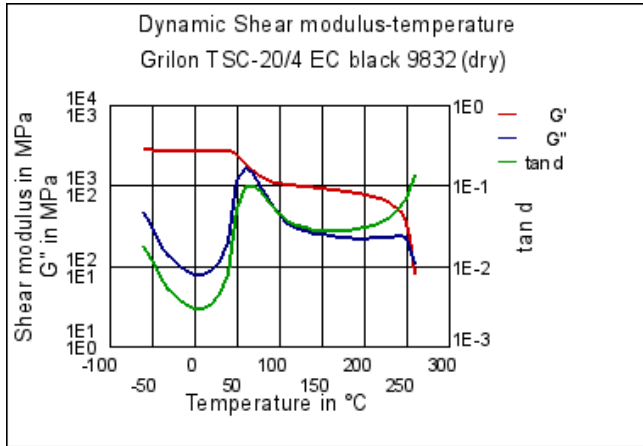
**Diagrams**

**Grilon TSC-20/4 EC black 9832**

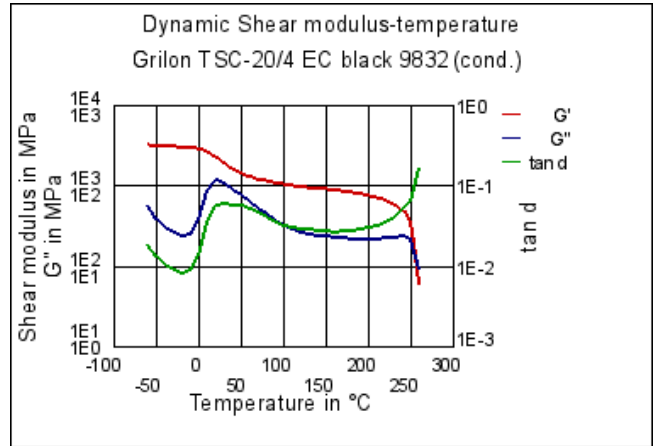
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**Dynamic Shear modulus-temperature**



**Dynamic Shear modulus-temperature**



**Characteristics**

**Processing**

Injection Molding

**Delivery form**

Granules

**Special Characteristics**

Anti-static

**Regional Availability**

North America, Europe, Asia Pacific, South and Central America, Near East/Africa

**Chemical Media Resistance**

**Acids**

- ☺ Acetic Acid (5% by mass) (23°C)
- ☺ Citric Acid solution (10% by mass) (23°C)
- ☺ Lactic Acid (10% by mass) (23°C)
- ⊖ Hydrochloric Acid (36% by mass) (23°C)
- ⊖ Nitric Acid (40% by mass) (23°C)
- ⊖ Sulfuric Acid (38% by mass) (23°C)
- ⊖ Sulfuric Acid (5% by mass) (23°C)
- ⊖ Chromic Acid solution (40% by mass) (23°C)

**Bases**

- ☺ Sodium Hydroxide solution (35% by mass) (23°C)
- ☺ Sodium Hydroxide solution (1% by mass) (23°C)
- ☺ Ammonium Hydroxide solution (10% by mass) (23°C)

**Alcohols**

- ☺ Isopropyl alcohol (23°C)

**Product Attributes**

Improved friction & wear properties

**Automotive**

Automotive electr. and electronics, lighting, Powertrain and Chassis

**Electricals & Electronics**

Electrical appliances, Electrical equipment

**Industry & Consumer goods**


Mechanical Engineering, Power transmission, Sports & Leisure, Tools & Accessories

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 Methanol (23°C)

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**Hydrocarbons**

 n-Hexane (23°C)


 Toluene (23°C)

 iso-Octane (23°C)

**Ketones**

 Acetone (23°C)

**Ethers**


 Diethyl ether (23°C)

**Mineral oils**


 SAE 10W40 multigrade motor oil (23°C)


 SAE 10W40 multigrade motor oil (130°C)


 SAE 80/90 hypoid-gear oil (130°C)


 Insulating Oil (23°C)


**Standard Fuels**


 ISO 1817 Liquid 1 (60°C)


 ISO 1817 Liquid 2 (60°C)


 ISO 1817 Liquid 3 (60°C)

 ISO 1817 Liquid 4 (60°C)

 Standard fuel without alcohol (pref. ISO 1817 Liquid C) (23°C)


 Standard fuel with alcohol (pref. ISO 1817 Liquid 4) (23°C)


 Diesel fuel (pref. ISO 1817 Liquid F) (23°C)


 Diesel fuel (pref. ISO 1817 Liquid F) (90°C)


 Diesel fuel (pref. ISO 1817 Liquid F) (>90°C)


**Salt solutions**

 Sodium Chloride solution (10% by mass) (23°C)

 Sodium Hypochlorite solution (10% by mass) (23°C)


 Sodium Carbonate solution (20% by mass) (23°C)

 Sodium Carbonate solution (2% by mass) (23°C)


 Zinc Chloride solution (50% by mass) (23°C)


**Other**


 Ethyl Acetate (23°C)

 Hydrogen peroxide (23°C)

 DOT No. 4 Brake fluid (130°C)


 Ethylene Glycol (50% by mass) in water (108°C)

 1% nonylphenoxy-polyethyleneoxy ethanol in water (23°C)

 50% Oleic acid + 50% Olive Oil (23°C)

 Water (23°C)

 Deionized water (90°C)

 Phenol solution (5% by mass) (23°C)