

**Grilamid L XE 10953 black**  
PA12

EMS-GRIVORY | a unit of EMS-CHEMIE AG

**Product Texts**

Product-nomenclature:  
ISO 16396-PA12-P,,EHZ,C24-005

Mechanical properties	dry / cond	Unit	Test Standard
Tensile Modulus	<b>500 / 400</b>	MPa	ISO 527-1/-2
Stress at 50% strain	<b>30 / 30</b>	MPa	ISO 527-1/-2
Strain at break	<b>&gt;50 / &gt;50</b>	%	ISO 527-1/-2
Charpy impact strength (+23°C)	<b>N / N</b>	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy impact strength (-30°C)	<b>N / N</b>	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength (+23°C)	<b>N / N</b>	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength (-30°C)	<b>10 / 10</b>	kJ/m <sup>2</sup>	ISO 179/1eA

Mechanical properties (TPE)	dry / cond	Unit	Test Standard
Shore D hardness (15s)	<b>63 / 63</b>	-	ISO 868

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature (10°C/min)	<b>173 / -</b>	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	<b>45 / -</b>	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	<b>95 / -</b>	°C	ISO 75-1/-2
Coeff. of linear therm. expansion (parallel)	<b>140 / -</b>	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion (normal)	<b>180 / -</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 - 110</b>	°C	ISO 2578
Max. usage temperature (short term)	<b>150</b>	°C	EMS

Electrical properties	dry / cond	Unit	Test Standard
Volume resistivity	<b>1000000 / 1000000</b>	Ohm*m	IEC 60093
Surface resistivity	<b>- / 1000000</b>	Ohm	IEC 60093
Electric strength	<b>14 / 12</b>	kV/mm	IEC 60243-1
Comparative tracking index	<b>- / 150</b>	-	IEC 60112

Other properties	dry / cond	Unit	Test Standard
Water absorption	<b>1.2 / -</b>	%	Sim. to ISO 62
Humidity absorption	<b>0.6 / -</b>	%	Sim. to ISO 62
Density	<b>1040 / -</b>	kg/m <sup>3</sup>	ISO 1183

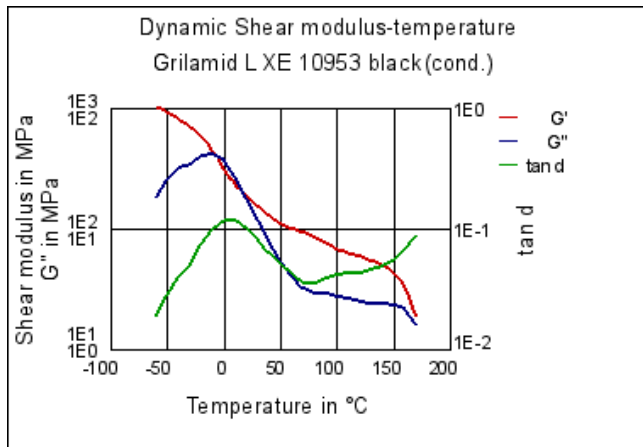
Rheo/Phys properties	dry / cond	Unit	Test Standard
Molding shrinkage (parallel)	<b>1.1 / -</b>	%	ISO 294-4, 2577
Molding shrinkage (normal)	<b>1.4 / -</b>	%	ISO 294-4, 2577

**Diagrams**

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**Dynamic Shear modulus-temperature**



**Characteristics**

**Processing**

Other Extrusion

**Delivery form**

Granules

**Additives**

Plasticizer

**Special Characteristics**

Anti-static, High impact or impact modified, Improved UV resistance (outdoor use), Improved heat resistance

**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)

**Product Attributes**

Flexible, High viscosity

**Automotive**

Fuel systems

**Electricals & Electronics**

Cables & Tubes






















**Industry & Consumer goods**

Hydraulics & Pneumatics

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 Ammonium Hydroxide solution (10% by mass) (23°C)**Alcohols** Isopropyl alcohol (23°C) Methanol (23°C) Ethanol (23°C)**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)

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Water (23°C)



Deionized water (90°C)



Phenol solution (5% by mass) (23°C)

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