

**Grivory HTV-4H1 black 9205**

PA6T/6I-GF40

EMS-GRIVORY | a unit of EMS-CHEMIE AG

**Product Texts**

 Product designation according to ISO 1874:  
 PA 6T/6I, MH, 12-140, GF40

Mechanical properties	dry / cond	Unit	Test Standard
Tensile Modulus	<b>14500 / 14000</b>	MPa	ISO 527-1/-2
Stress at break	<b>220 / 210</b>	MPa	ISO 527-1/-2
Strain at break	<b>2 / 2</b>	%	ISO 527-1/-2
Charpy impact strength (+23°C)	<b>70 / 70</b>	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy impact strength (-30°C)	<b>70 / 70</b>	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength (+23°C)	<b>8 / 8</b>	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength (-30°C)	<b>8 / 8</b>	kJ/m <sup>2</sup>	ISO 179/1eA

Mechanical properties (TPE)	dry / cond	Unit	Test Standard
Ball indentation hardness	<b>310 / 300</b>	MPa	ISO 2039-1

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature (10°C/min)	<b>325 / -</b>	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	<b>280 / -</b>	°C	ISO 75-1/-2
Temp. of deflection under load (8.00 MPa)	<b>200 / -</b>	°C	ISO 75-1/-2
Coeff. of linear therm. expansion (parallel)	<b>15 / -</b>	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion (normal)	<b>50 / -</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>150</b>	°C	ISO 2578
Max. usage temperature (short term)	<b>270</b>	°C	EMS

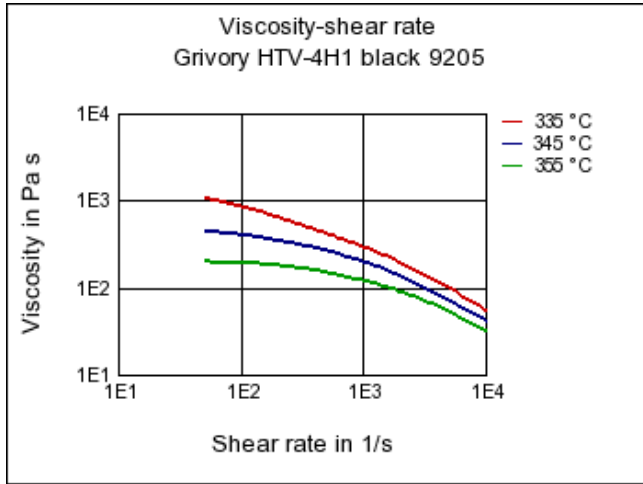
Electrical properties	dry / cond	Unit	Test Standard
Volume resistivity	<b>1E11 / 1E11</b>	Ohm*m	IEC 60093
Surface resistivity	<b>- / 1E12</b>	Ohm	IEC 60093
Electric strength	<b>30 / 30</b>	kV/mm	IEC 60243-1
Comparative tracking index	<b>- / 600</b>	-	IEC 60112

Other properties	dry / cond	Unit	Test Standard
Water absorption	<b>3.5 / -</b>	%	Sim. to ISO 62
Humidity absorption	<b>1.5 / -</b>	%	Sim. to ISO 62
Density	<b>1530 / -</b>	kg/m <sup>3</sup>	ISO 1183

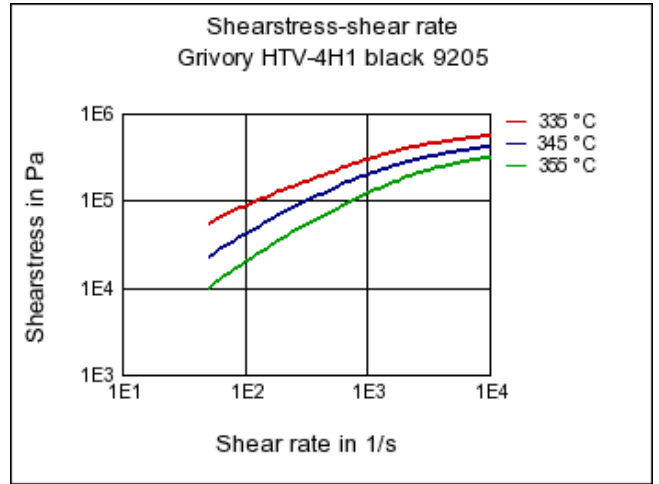
Rheo/Phys properties	dry / cond	Unit	Test Standard
Molding shrinkage (parallel)	<b>0.1 / -</b>	%	ISO 294-4, 2577
Molding shrinkage (normal)	<b>0.7 / -</b>	%	ISO 294-4, 2577

**Diagrams**

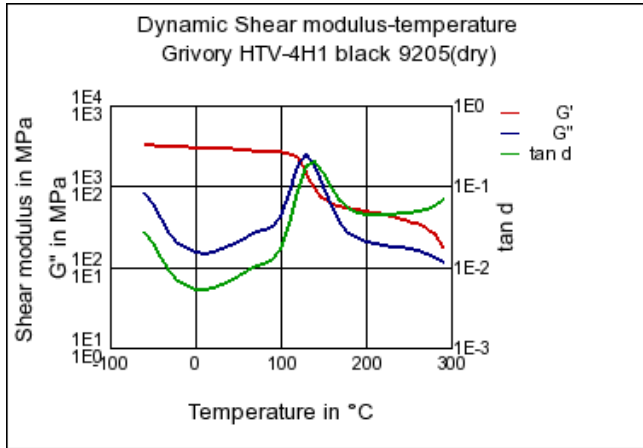
Viscosity-shear rate



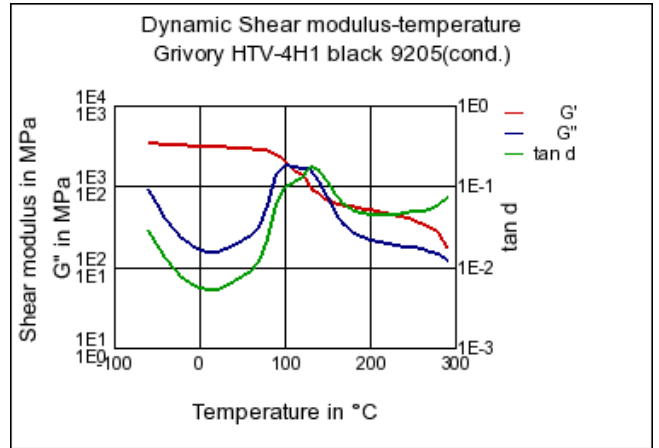
Shearstress-shear rate



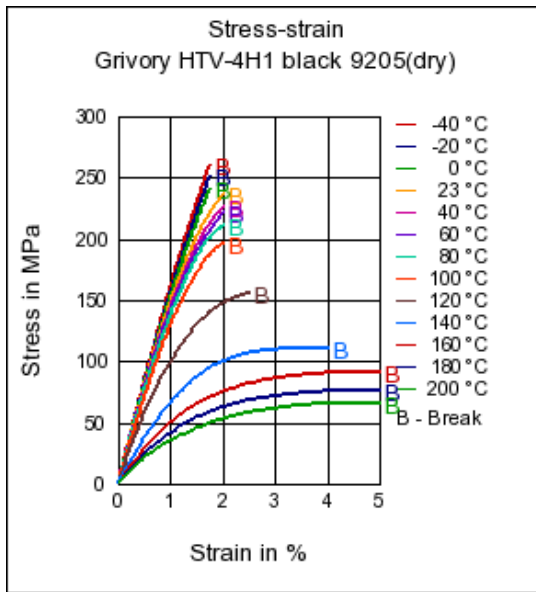
Dynamic Shear modulus-temperature



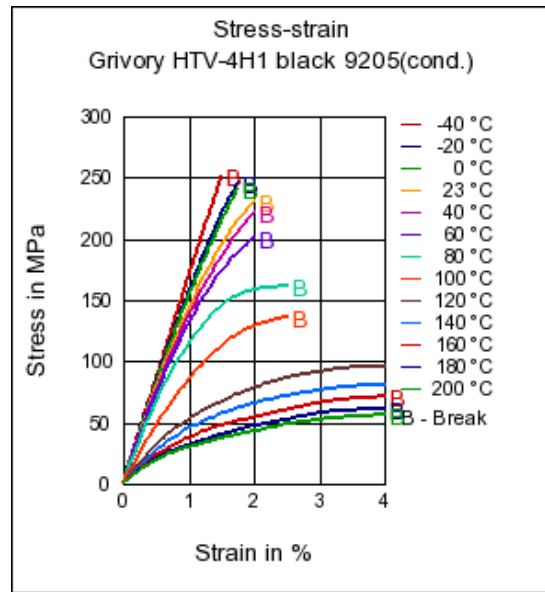
Dynamic Shear modulus-temperature



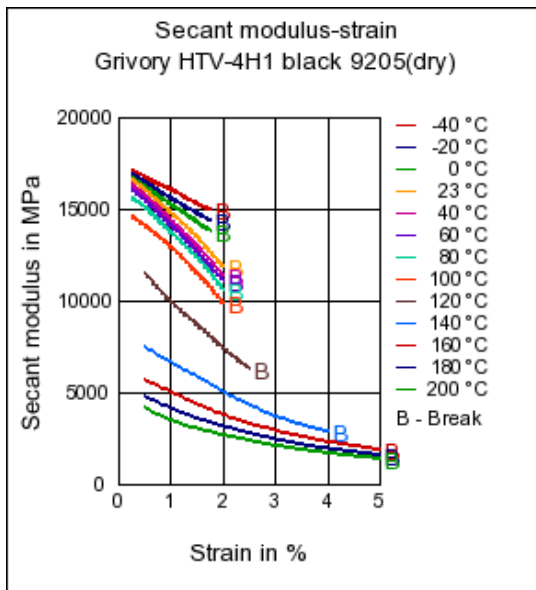
Stress-strain



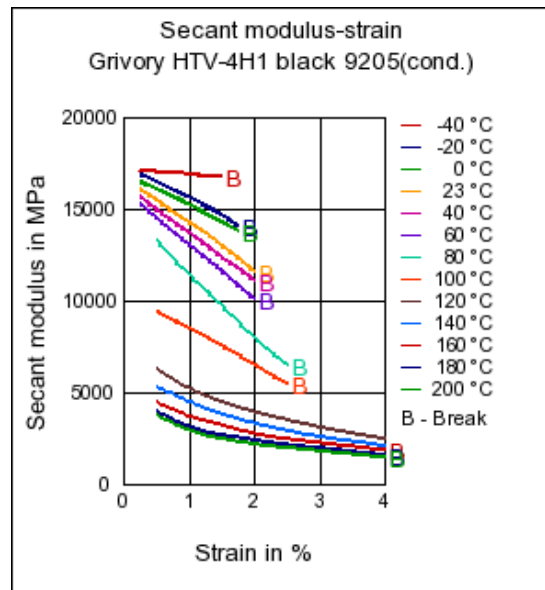
Stress-strain



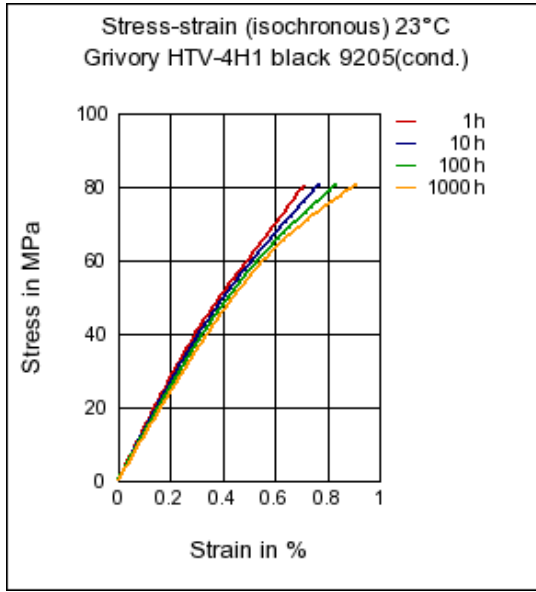
Secant modulus-strain



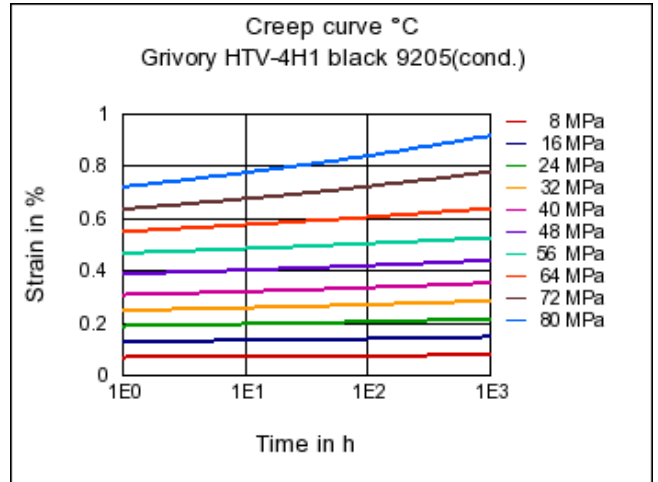
Secant modulus-strain



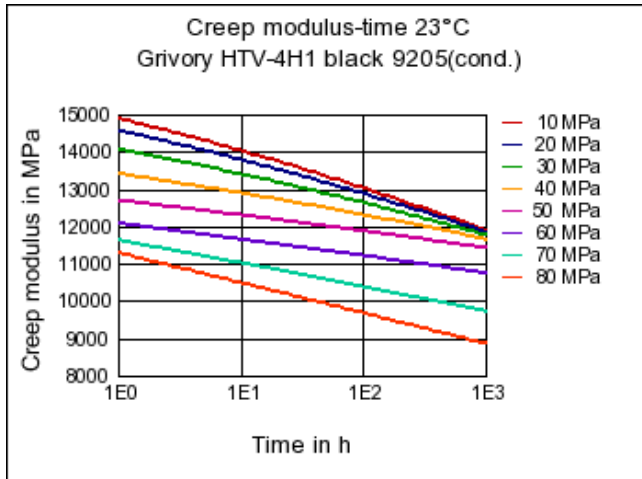
Stress-strain (isochronous) 23°C



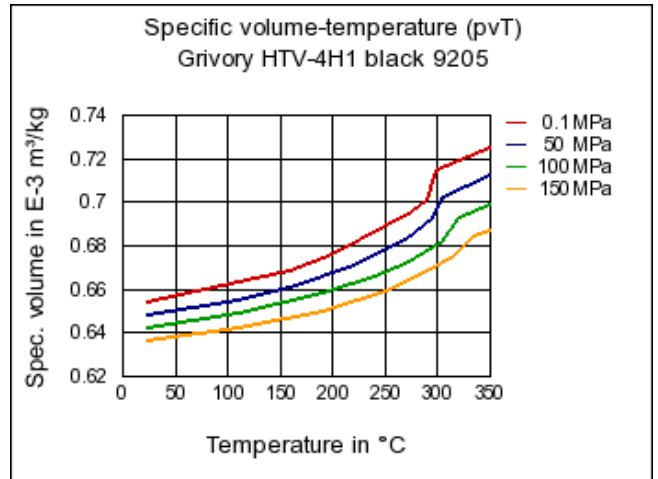
Creep curve °C



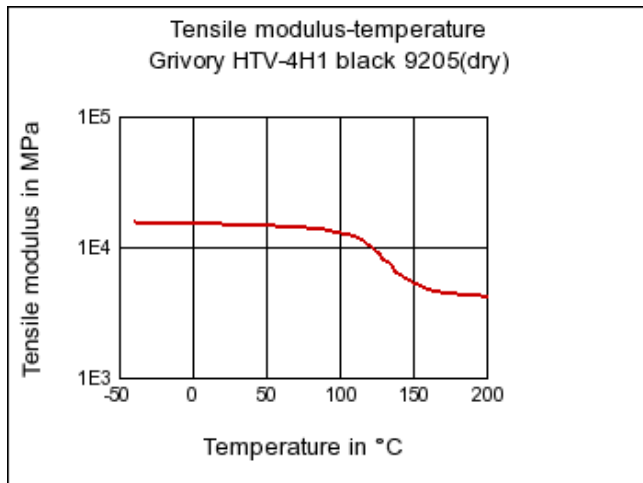
Creep modulus-time 23°C



Specific volume-temperature (pvT)



## Tensile modulus-temperature



## Characteristics

## Processing

Injection Molding

## Delivery form

Granules

## Special Characteristics

Improved UV resistance (outdoor use), Improved heat resistance

## Regional Availability

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

## Automotive

Fuel systems, Powertrain and Chassis , Interior, Exterior

## Electricals &amp; Electronics

Electrical appliances, Energy distribution, Mobile phones and other portable devices

## Industry &amp; Consumer goods

Housewares, Hydraulics &amp; Pneumatics, Mechanical Engineering, Power transmission, Sports &amp; Leisure, Tools &amp; Accessories

## Potable Water Contact

NSF 61

## 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)
- ☺ 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)
- ☺ Water (23°C)



Deionized water (90°C)



Phenol solution (5% by mass) (23°C)