

## Grivory GV-6H

PA\*-GF60

EMS-GRIVORY | a unit of EMS-CHEMIE AG

### Product Texts

Product designation according to ISO 1874:

PA66+PA6I/X, MH, 14-220, GF60

Mechanical properties	dry / cond	Unit	Test Standard
Tensile Modulus	<b>22000 / 21000</b>	MPa	ISO 527-1/-2
Stress at break	<b>260 / 240</b>	MPa	ISO 527-1/-2
Strain at break	<b>2 / 2</b>	%	ISO 527-1/-2
Charpy impact strength (+23°C)	<b>80 / 80</b>	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy impact strength (-30°C)	<b>80 / 80</b>	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength (+23°C)	<b>14 / 14</b>	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength (-30°C)	<b>13 / 13</b>	kJ/m <sup>2</sup>	ISO 179/1eA

Mechanical properties (TPE)	dry / cond	Unit	Test Standard
Ball indentation hardness	<b>315 / 290</b>	MPa	ISO 2039-1

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>235 / -</b>	°C	ISO 75-1/-2
Temp. of deflection under load (8.00 MPa)	<b>175 / -</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>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>100 - 120</b>	°C	ISO 2578
Max. usage temperature (short term)	<b>220</b>	°C	EMS

Electrical properties	dry / cond	Unit	Test Standard
Volume resistivity	<b>1E12 / 1E12</b>	Ohm*m	IEC 60093
Surface resistivity	<b>- / 1E13</b>	Ohm	IEC 60093
Electric strength	<b>33 / 33</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>1.2 / -</b>	%	Sim. to ISO 62
Density	<b>1690 / -</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

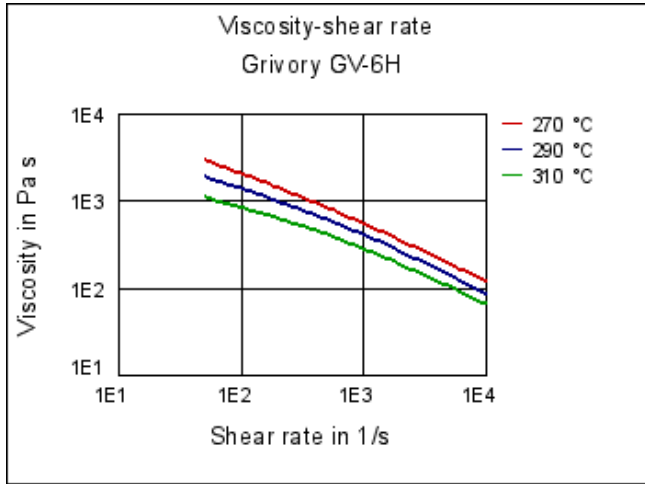
### Diagrams

Grivory GV-6H

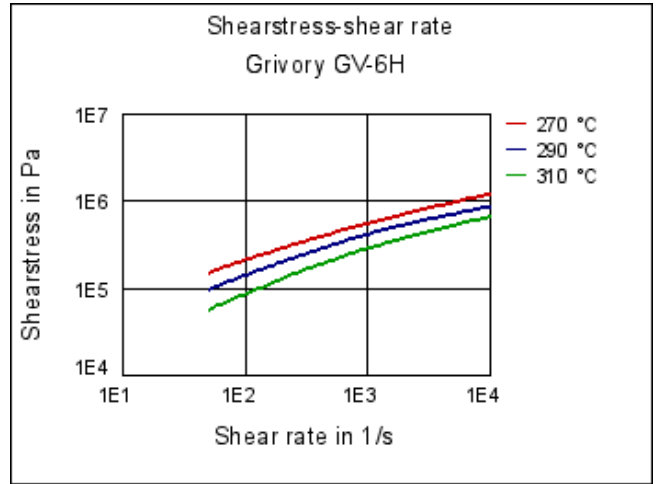
PA\*-GF60

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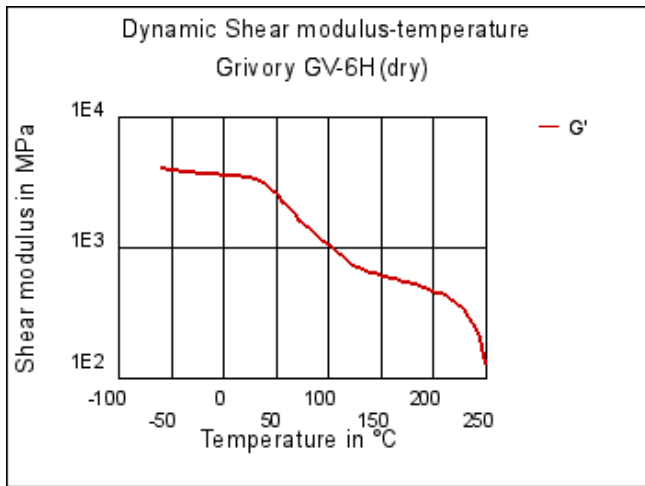
Viscosity-shear rate



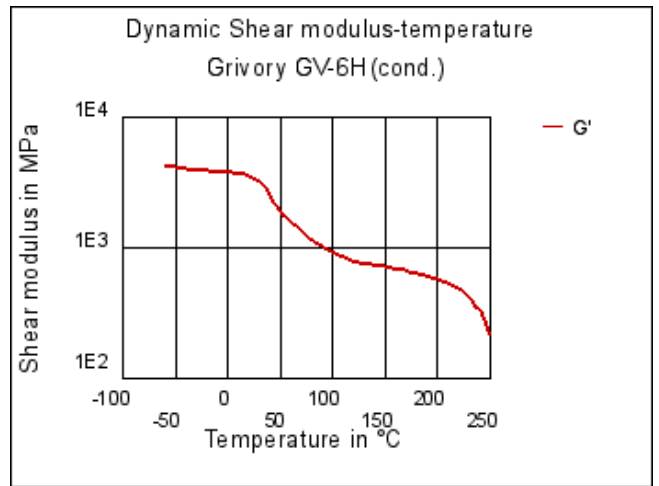
Shearstress-shear rate



Dynamic Shear modulus-temperature



Dynamic Shear modulus-temperature

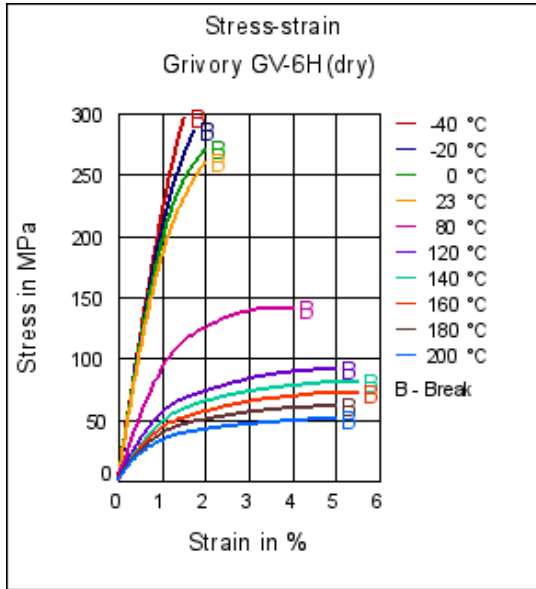


Grivory GV-6H

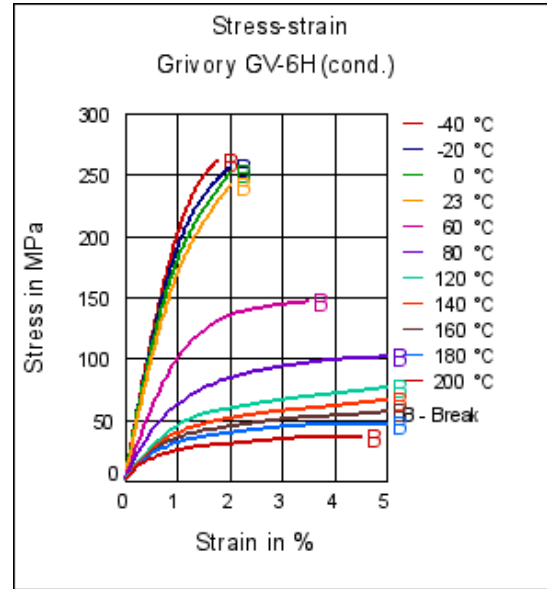
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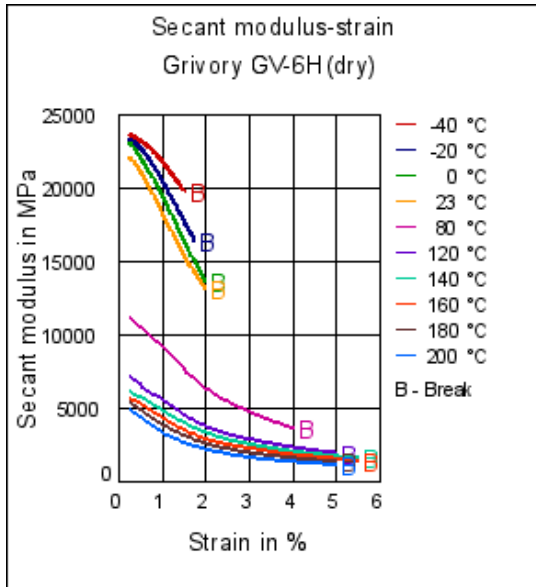
Stress-strain



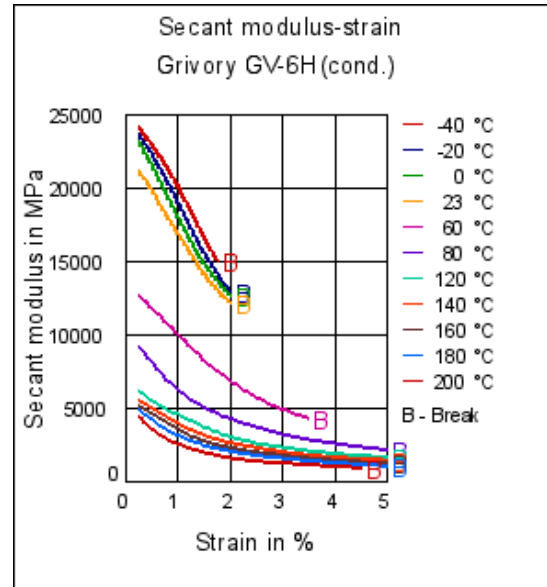
Stress-strain



Secant modulus-strain



Secant modulus-strain

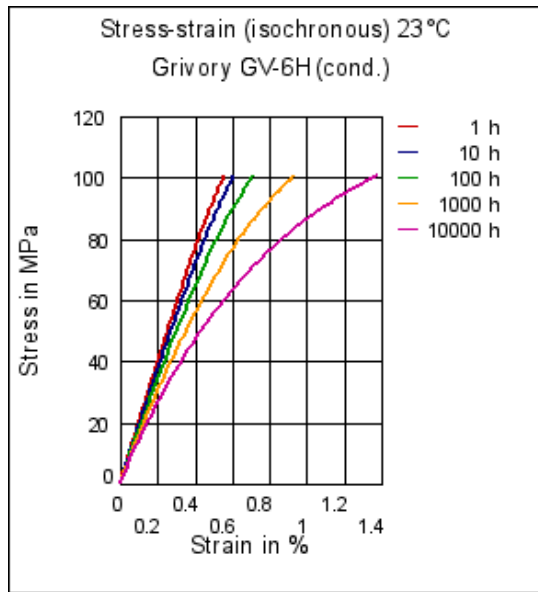


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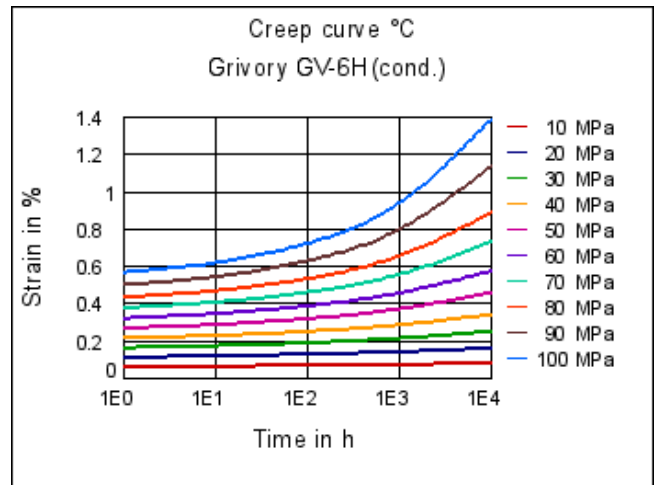
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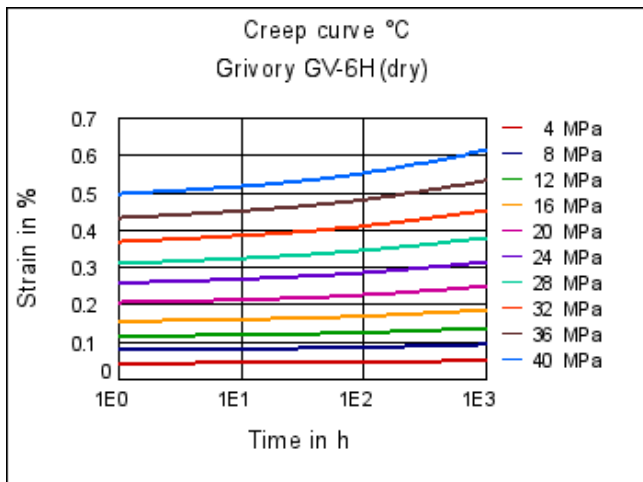
Stress-strain (isochronous) 23°C



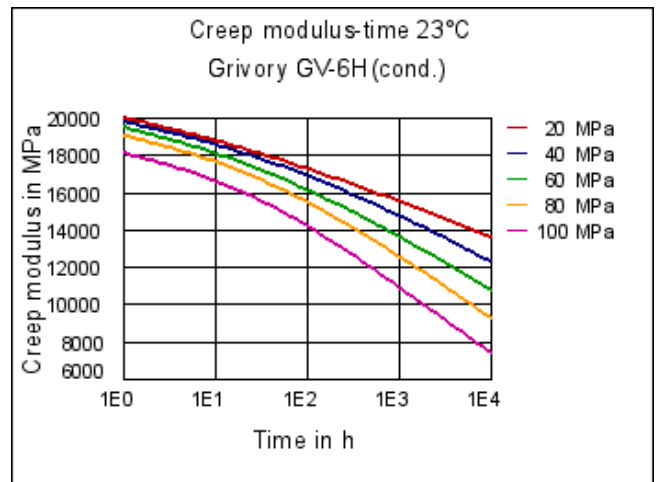
Creep curve °C



Creep curve °C



Creep modulus-time 23°C

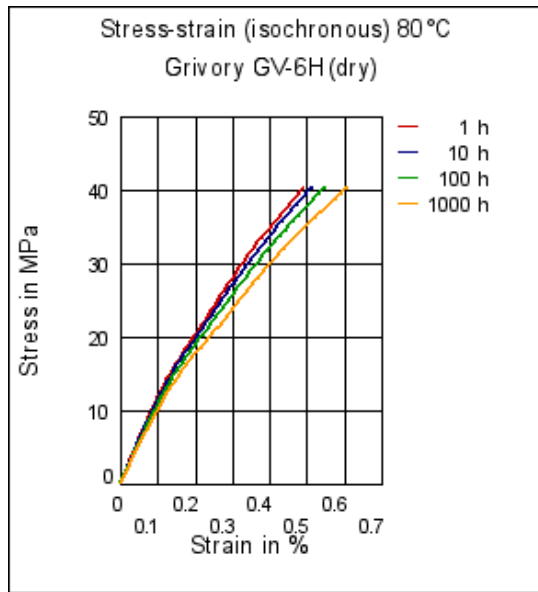


**Grivory GV-6H**

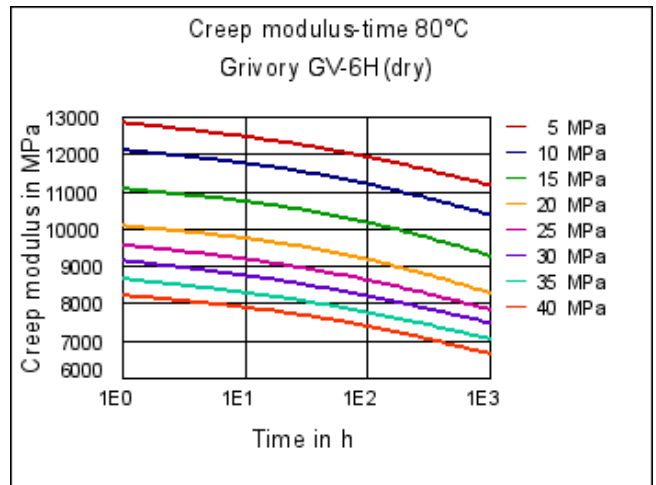
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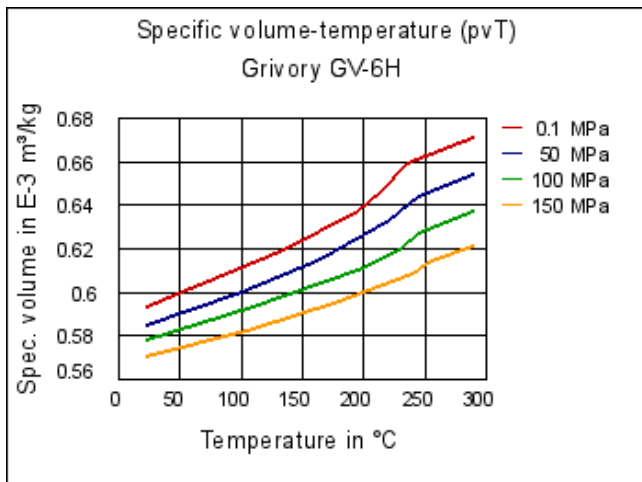
**Stress-strain (isochronous) 80°C**



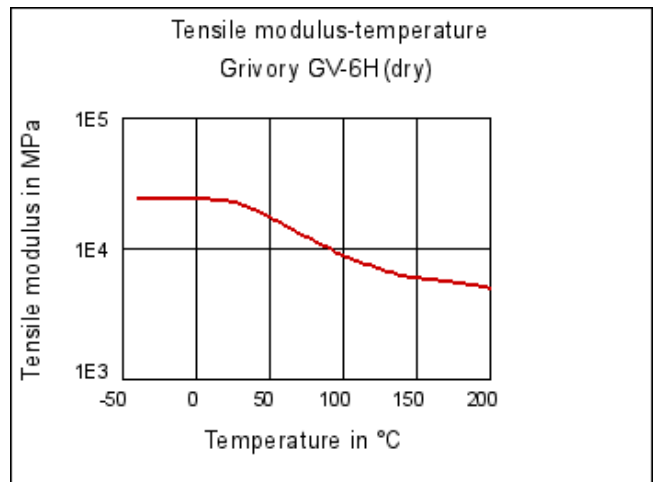
**Creep modulus-time 80°C**



**Specific volume-temperature (pvT)**



**Tensile modulus-temperature**



**Characteristics**

**Processing**

Injection Molding

**Delivery form**

Granules

**Regional Availability**

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

**Automotive**

Air intake systems, Compressed air systems, Hydraulic systems, Automotive electr. and electronics, lighting, Powertrain and Chassis, Interior, Exterior

**Electricals & Electronics**

Electrical appliances, Electrical equipment, Connectors, Energy distribution, Lighting, Mobile phones and other portable devices

**Industry & Consumer goods**

Housewares, Hydraulics & Pneumatics, Mechanical Engineering, Power transmission, Tools & Accessories

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**Product Attributes**









Partially aromatic Polyamide

**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)

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- ☹️ 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)
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