G-ENERGY ANTIFREEZE PRO G12++

G-Energy Antifreeze PRO G12++ is a concentrate of the liquid coolant of a low-hybrid type (contains ethylene glycol and a package of corrosion inhibitors based on salts of organic acids and silicates (Si-OAT)). Intended for use in internal combustion engines. When ready to use, it provides improved protection against cavitation and highly efficient cooling of engines at ambient temperature according to the recommendations for dilution with water. Before use, dilute the concentrate with distilled water. Do not use without dilution.

Application*:

- Light motor and load-carrying vehicles.
- Stationary engines.
- Heavy-duty engines.
- The concentrate is not used as an operating liquid coolant.
- Before use, the concentrate must be diluted with water from 40% to 60%, see the graph.
- The optimal liquid coolant concentration is 50%.
- Use distilled or demineralized (filtered) water for dilution

Advantages:

- Contains a package of corrosion inhibitors based on salts of organic acids and silicates (Si-OAT).
- Contains no nitrites, amines, phosphates and borates.
- Provides engine protection against corrosion, overheating and freezing.
- Effectively protects all important parts of the vehicle cooling system from corrosion and deposit formation: cooling channels in blocks and cylinder heads, radiator, water pump and heat exchanger.

Typical physical and chemical properties

Parameters	Method	G-Energy Antifreeze PRO G12++
Appearance	Visually	Transparent homogeneous red-violet liquid without visible foreign inclusions
Density at 20 °C, g/cm^3	ASTM D1122	1.123
Refractive index at 20 °C	GOST 18995.2	1.432
Boiling point, ˚C	ASTM D1120	> 160
pH (50% dilution)	ASTM D1287	8.8
Alkalinity reserve (50% dilution), ml	ASTM D1121	3.6
Chilling point, 50% vol., °C	ASTM D1177	- 37
Foamability, 33% vol.	ASTM D1881	max 50 ml / 3 s

Specifications:

- MAN 324 Si-OAT, MTU MTL 5048, Volkswagen TL774 J, TL774K, TL774G, VW (G12++), BMW LC-18, BMW HT-12, BMW GS 94000, Volkswagen/ Audi/ Seat/ Skoda/ Lamborghini/ Bentley/ Bugatti, Porsche (from 1996), Daimler/ Mercedes-Benz 325.5/ 325.6

Standards:

- ASTM D3306, ASTM D4985, ASTM D6210, CHINA GB 29743

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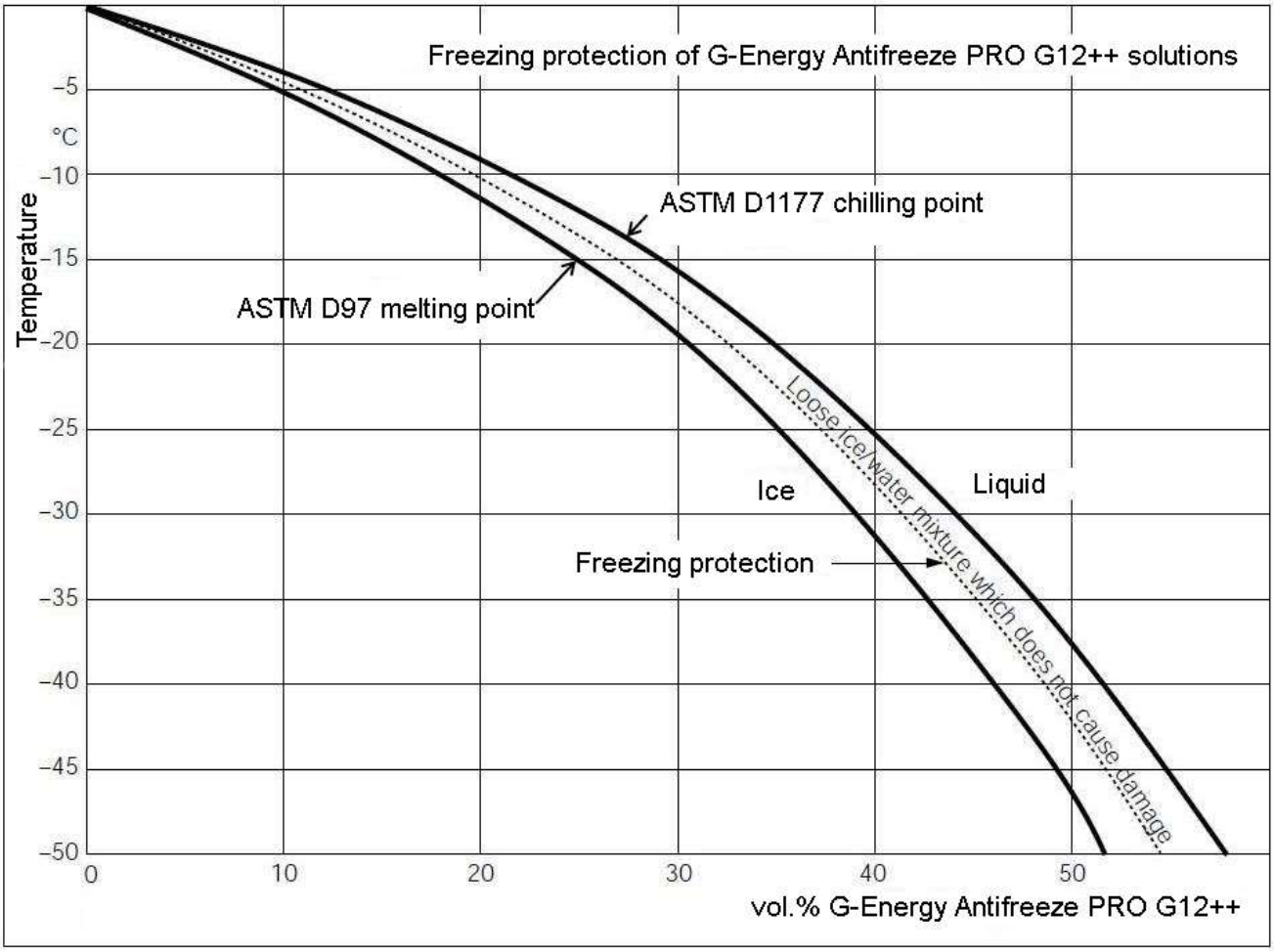
Graph of freezing protection temperature* depending on the volume concentration



*Freezing protection temperature is the arithmetic mean between chilling point (appearance of crystals) and melting point (loss of fluidity)

Corrosion in Glassware Test, ASTM D1384

	Brass	Copper	Solder	Steel	Cast iron	Aluminum
	Weight loss[1], mg/plate					
ASTM D3306 standard (max)	10	10	30	10	10	30
G-Energy Antifreeze PRO G12++	0.9	0.5	1.7	-1.1	-0.9	2.4

1 - negative values indicate weight gain

Hot Surface Corrosion Test, ASTM D4340

	Weight loss[1], mg/cm^2/week	ASTM D3306 standard
Aluminum	-0.13	max 1.0

2 - test results on the concentrate of G-Energy Antifreeze PRO G12++ using aggressively corrosive water

Dynamic Corrosion Test, ASTM D2570

	Brass	Copper	Solder	Steel	Cast iron	Aluminum
	Weight loss, mg/plate[2]					
ASTM D3306 standard (max)	20	20	60	20	20	60
G-Energy Antifreeze PRO G12++	-3.5	-2.1	2.1	1.3	-3.0	-2.4

The company's management system is certified in accordance with the international standards

ISO 9001 **ISO 14001** **ISO 45001**

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