ANTIFREEZE FOR USE IN HIGH-POWERED VEHICLES

Heavy duty engines work in the maximum designed power range. They achieve high mileage and are more vulnerable to cavitation corrosion. The cooling system in modern heavy duty (HD) engines has to meet higher demands due to:

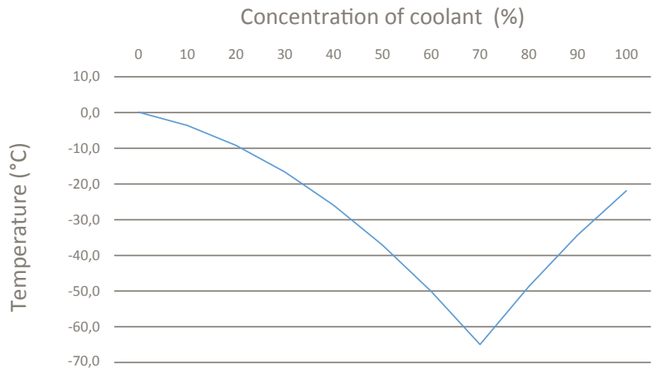
- higher working temperature and pressure
- higher fluid flow speed.

When working in extreme conditions, maintaining the high performance of vehicles and appliances is of fundamental importance for their productivity. This is why it is important to use antifreeze containing special additives appropriate for heavy duty engines.

Advantages of using coolants meet ASTM D6210 requirements (standard specification for fully developed glycol based engine coolant for engines operating in difficult conditions - heavy duty):

- better anti-cavitation protection for metals
- better protection for aluminium and soldering alloys
- prevents precipitation of silicate gel and other sediments on metal alloysi
- helps prevent pump leaks

PROTECTION AGAINST FREEZING



Fluid dilution - protection against freezing for:
33% conc. coolant - protection up to -20°C; minimum concentration to maintain proper anti-corrosion protection;
40% conc. coolant - protection up to -26°C
50% conc. coolant - protection up to -37°C
68% conc. coolant - maximum protection against freezing: -69°C .
Larger coolant concentrations are not recommended.

More detailed information from the Distributor's Commercial departments or directly from Kemetyl Poland.
Kemetyl Polska Sp. z o.o., Al. Jerozolimskie 146, 02-305 Warszawa
www.kemetyl.pl

SHELL
PREMIUM ANTIFREEZE

- **technologically advanced**
- **adapted to the latest solutions**
- **perfect protection for the engine and cooling system**

Highest quality anti-freezes

WHY IS IT WORTH USING SHELL FLUIDS?

- the **top quality** of the fluids supported by many years of experience on the European market
- a **wide range** of products for different uses
- **certifications** from leading vehicle manufacturers
- they **meet the requirements** of most car manufacturers
- **mixable** with other antifreezes
- they **protect the engine** against overheating and freezing
- they **protect the cooling system** against corrosion, cavitation and formation of sediments thanks to an advanced inhibitor package
- they protect plastic and rubber elements

The sale of Shell fluids is supported by professional advice and training.

WHAT ANTIFREEZE IS APPROPRIATE FOR MY VEHICLE?

Damage to the cooling system is the most common cause of vehicle failure. To avoid this, you should select the right fluid for a given vehicle and type of application. You should always compare the specification of the fluid with the specification recommended in the vehicle documents. Shell's wide range of products includes fluids designed for:

- passenger cars
- commercial transport
- agricultural machines
- construction machines

Using the wrong antifreeze can result in costly damage.
A full 40% of lorry engine failures and 20% of failures in car engines can be blamed on damage to the cooling system. 7 out of 10 vehicles suffer from lime scale and rust. 60% of damage to cooling system pumps is caused by leakage in the system. The most common causes of damage to the cooling system are:

- the wrong fluid for a given application
- low quality fluid
- worn-our antifreeze fluid
- concentrated fluid working in the system

SHELL ANTIFREEZE FLUIDS - EXCELLENT PROTECTION FOR THE COOLING SYSTEM

Shell antifreezes contain a special package of inhibitors which protect the system against:

- corrosion - by forming protective layers on metal surfaces
- cavitation (damage caused by a sudden local change in fluid concentration)
- sediment formation - by preventing sediments forming and attaching to surfaces

sediment after using low quality antifreeze

corroded radiator after using low quality antifreeze

radiator after using Shell Premium antifreeze

cavitation damage* caused by using low quality antifreeze

* Cavitation - this occurs in the cooling systems of combustion engines, at points with a high speed of fluid flow or strong vibrations. The shock waves formed can damage or destroy any kind of material. Cavitation is also the main source of noise.

Guide to antifreeze fluids

PRODUCT	BASE	ADDITIVE	FREE OFF	REPLACEMENT RECOMMENDED	COLOUR	MEETS STANDARDS	OEM APPROVALS
Shell Płyn do chłodnic Premium G12 EVO	MEG	organic acids, silicates	nitrite, amines, phospates, borates 2-EHA acids	4 years	pink	VW TL 774-L (G12evo); ASTM D 3306 D 4985; ASTM D 6210; BS6580:2010; UNA NC 956-16; IS K 2234:2006; SAE J1034; ÖNORM V 5123	G12EVO, G13, G12++, G12+, G11: Audi >1996; BMW >1988 onwards (LC-87); Mini and Rolls Royce; Bugatti >1998; Deutz DQC CC-14; John Deere >2011; Lamborghini >1998; Liebherr Minimum LH-01-COL3A; MAN Type Si-OAT; MB 325.0, 325.6 i 326.6; MTU MTL 5048; Perkins; Porsche >1996; Seat >1996; Skoda >1996; Steyr Motors; VW >1996; Volvo TR-31854114-002 & TR 1286083
Shell Płyn do chłodnic Premium Longlife Plus 774 G (G12++)	MEG	organic acids, silicates	nitrite, amines, phospates, borates	5 years	red	SI-OAT BASED COOLANTS ARE COMPATIBLE WITH ALL MEG-BASED COOLANTS - THEY CAN BE MIXED SAFELY	MAN 324 Si-OAT; Daimler MB 325.5
Shell Płyn do chłodnic Premium Longlife 774 D-F (G12/G12+) for professional users	MEG	organic acids	nitrite, amines, phospates, borates, silicates	5 years	pink	ASTM D3306; ASTM D6210, BS 6580; PN-C-40007; ASTM D4656; ASTM D4985; NFR 15-601[1]; FVV Heft R443; JIS K2234, KSM 2142; BT-PS-606 A; DCSEA 615/C; E/L-1415b; FSD 8704[1]; NATO S759; Önorm V5123[1]; SAE J1034[1]; UNE 26-361-88/1	**Deutz DQC CB-14; MAN 324 Typ SNF; VW TL-774D i 774F; DAF 74002; MB 326.3** AGCO: Fendt, Valtra; Caterpillar: GCM34, MAK, MWM 0199-99-2091/12; Cummins: IS series u N14, CES 14603, CES 14439; Frendt; Innio Jenbacher TA 1000-0200; John Deere JDM H5; Mitsubishi Heavy Industry (MHI); Paccar - Leyland Trucks DW03245403 (DAF trucks F54 i F55); MTU MTL 5048; Volvo: AB - Volvo Penta, AB - Mack 014 GS 17009, AB - Renault Trucks 41-01-001/-S Type D, AB Construction, Trucks; MAN B&W A/S
Shell Płyn do chłodnic Premium Phosphate Longlife	MEG	organic acids, phospates	nitrite, amines, borates, silicates	5 years	blue	JIS K 2234-2018; ASTM D3306; ASTM D6210; AFNOR NFR 15-601 2020	Daimler AG; Doosan Infracore; Ford WSS-M97B57-A1; Daewoo; Honda; Hyundai, Kia; Kubota; Ssangyong; Mazda; Mitsubishi (heavy Industry & Motors); Renault; Nissan 41-01-001-U; Subaru; Suzuki; Toyota
Shell Płyn do chłodnic Anti-Freeze Longlife Ultimate Protection	MEG	organic acids	nitrite, amines, phospates, borate, silicatess 2-EHA acids	5 years	pink	ASTM D3306; ASTM D4656; ASTM D4985; AFNOR NF R15-601; AS 2108; BS 6580:1992; CUNA NC 956-16; SAE J 1034; UNE 26361-88; FFV Heft R443; NATO S 759	Ford WSS-M97B44-D; MB 325.3; Renault 41-01-001; General Motors GM 6277M; VW VAG TL 774 D-F; MAN 324 SNF; Mazda MEZ MN 121 D; Volvo; Claas; Deutz 0199-99-115/6; John Deere JDMH5; Komatsu 07.892(2009); DAF 74002; Fiat – Lancia 9,55523; Jaguar CMR 8229
Shell Płyn do chłodnic Premium 774 C/P (G11)	MEG	organic acids, silicates	nitrite, amines, phospates, borates	3 years	blue-green	ASTM D3306; ASTM D4985, BS 6580:2010; AFNOR NF R15-601; NATO S-759; SAE J 1034	Caterpillar-Perkins; CNH Industrial Iveco standard 18-1830; Cummins 8578-2; Daimler MB 325.0 & 325.2; Deutz DQC CA-14; Ford ESD M97E; GM-Saturn; Mahle Behr; PSA Opel/ Vauxhall GME L130; Rolls Royce Power Systems AG – MTU MTL 5048; Toyota Motor Company (1WW, 2WW motors); Volvo AB Volvo constructions/ Volvo Trucks (<10.2005); VW Audi; Skoda; Seat; VW TL 774C; MAN 324 NF; BMW GS 9400

Comments: * -the vehicle manufacturer's instructions should be followed