

Radiator antifreeze product range

An intact cooling system prevents the engine from overheating and ensures a constant, stable operating temperature. The right radiator antifreeze protects the complete cooling system. The following requirements are made for the radiator antifreeze:

1. Thermal requirement

- High thermal conductivity
- Frost protection
- Overheating protection – the boiling point of the added coolant is increased

2. Material protection

- Corrosion protection for engine and cooling units that come into contact with coolant
- Material compatibility with all cooling circuit components
- Cavitation protection – formation of bubbles in the cooling circuit is prevented



Problem

Cooling by water alone is not sufficient. Without the right radiator antifreeze, high temperatures and pressure differences create ideal conditions for rust and cavitation. This causes holes in the material and damage to the coolant pump, cylinder head, cylinder liners and cooler unit. This can lead to a complete failure of the cooling system. Another problem with the use of pure water is the lack of frost protection. At low temperatures, the water crystallizes and expands. The expansion blows up the components in the closed cooler circuit. These problems can result in serious engine damage.

Consequences

Damage caused by incorrect or old coolant:



Corrosion deposits in the compensating reservoir and in the cap.



Corrosion deposits in the coolant. Such contamination proves that the entire cooling system is affected by corrosion.

Technical Information

Problem

Over time, the additives contained in the radiator antifreeze lose some of their effectiveness and make the system susceptible to corrosion again.

Solution

To protect, maintain and clean the cooling system, the radiator antifreeze needs to be regularly changed every three to four years, depending on the product used.

However, you should note that:

- The radiator antifreeze should not only be used as an antifreeze, but always as year-round protection for the cooling system.
- The coolant must be changed completely and radiator antifreeze of different qualities must never be mixed with each other. Mixing of coolant from different manufacturers is possible but not recommended.
- Coolants must never be disposed of via the waste water.
- Radiator antifreeze must not be stored in the oil cabinet, as even the smallest quantity of contaminated oil must otherwise be disposed of as hazardous waste.
- Radiator antifreeze concentrates must never be used undiluted and the correct mixing ratio must be ensured.
- The specifications of the automobile manufacturers must be complied with.



Mixing ratio:

The radiator antifreeze from LIQUI MOLY is a concentrate. The radiator antifreeze must therefore be diluted with water. We recommend distilled water for this. Depending on water hardness and quality (hardness not greater than 3.566 mmol/l), dilution with tap water is also possible.

LIQUI MOLY generally recommends a **mixing ratio of 50:50** (radiator antifreeze/water). This ensures optimum protection of the cooling circuit against corrosion, overheating and frost. However, the proportion of radiator antifreeze should not be less than 35 % and not more than 60 %.

The product-specific and exact mixing ratio is indicated on the product label.



Water

Radiator antifreeze



Radiator Antifreeze KFS 12+

ADE
Aston Martin
Audi TL-774 D = G12/Audi TL-774 F = G12+
Behr
Bergen Engines 2.13.01
Case New Holland MAT3624
Caterpillar/MAK/Caterpillar GCM34/Caterpillar MWM 0199-99-2091/12
Chevrolet
Claas
Cummins CES 14439/Cummins CES 14603/ Cummins IS series u N14
DAF74002
Detroit DFS93K217
Deutz DQC CB-14
Fendt
Fiat 9.55523
Ford WSS-M97 B44-D
Foton Q-FPT 2313005-2013
Great Wall
Hitachi
Irisbus Karosa
Isuzu
Jaguar CMR 8229/Jaguar STJLR 651.5003
Jenbacher TA 1000-2000
John Deere JDM H5
Kobelco
Komatsu 07.892 (2009)
Land Rover/Land Rover STJLR 651.5003
Lancia 9.55523
Leyland Trucks DW03245403
Liebherr MD1-36-130
Mack 014 GS 17009
MAN 324 Typ SNF/MAN B&W AG D36 5600/ MAN B&G A/S/MAN Diesel & Turbo SE
Mazda MEZ MN 121 D
MB 325.3/326.3
Mitsubishi Heavy Industry (MHI)
MTU MTL 5048
Opel/GM GMW 3420
Proton
Renault-Nissan Renault RNUR 41-01-001/ --S Type D/Renault Trucks 41-01-001/--S Type D
Saab B040 1065
Santana Motors
Saturn
Seat TL-774 D = G12/Seat TL-774 F = G12+
Skoda TL-774 D = G12/Skoda TL-774 F = G12+/Skoda 61-0-0257
Suzuki
Tedom
Thermo King
Valtra
Van Hool
Vauxhall GMW 3420
Volkswagen Semt Pielstick/Volkswagen TL-774 D = G12/ Volkswagen TL-774 F = G12+
Volvo Construction/Volvo Penta/Volvo Trucks
Wärtsilä 32-9011/Wärtsilä SAMC Diesel DLP799861
Waukesha
Yanmar

Radiator Antifreeze KFS 33

Peugeot Citroën PSA B71 5110
Toyota Motor Corporation (TMC)

Coloration

The coloration of the products is used for categorization and indicates the special additive composition required for different cooling systems from different automobile manufacturers. The products were specially adapted to the materials used in the cooling system and tested. Color is a small part of the manufacturer's specification and not a quality feature. It **enables increased clarity**. When selecting the correct radiator antifreeze, the corresponding manufacturer specifications must be followed.

Radiator Antifreeze KFS 11

Alfa Romeo 9.55523
Audi TL-774 C = G11
Behr
BMW GS 94000
Chrysler MS-7170
CUMMINS 85T8-2
Deutz DQC CA-14
Fiat 9.55523
Iveco-Standard 18-1830
JI Case JIC-501
Lada/Avtovaz TTM VAZ 1.97.717-97m
Lancia 9.55523
MAN 324 Typ NF
MB 325.0/325.2
MTU MTL 5048
Opel/GM GME L 46014
Perkins
Porsche TL-774 C = G11
Saturn
Seat TL-774 C = G11
Skoda TL-774 C = G11
Toyota Motor Corporation
Vauxhall GMEL1301
Volvo Cars 128 6083/002
Volvo Construction
Volvo Trucks
Volkswagen TL-774 C = G11

Radiator Antifreeze KFS 12++

Audi TL-774 G = G12++
MAN 324 Typ Si-OAT
MB 325.5
Seat TL-774 G = G12++
Skoda TL-774 G = G12++
Volkswagen TL-774 G = G12++

Radiator Antifreeze KFS 13

Audi TL-774 J = G13
Seat TL-774 J = G13
Skoda TL-774 J = G13
Volkswagen TL-774 J = G13

Technical Information



Changing the radiator antifreeze

A general distinction is made between silicate-containing and silicate-free radiator antifreezes. If the products of different technologies were mixed, the effect of the additive packages would be impaired. In the worst case, the engine is permanently damaged as a result.

For this reason, care must always be taken to completely change the fluid. When selecting the radiator antifreeze, the manufacturer's specifications must be followed. The cooling system must also be cleaned before refilling.

Problem

Recommended product

Functional characteristics/Application

Deposits in the cooling/heating system create blockages for heat exchange and they also block thermostat valves and control mechanisms. When engine temperatures are too high, the engine runs uneconomically and suffers excessive wear at considerable risk of damage.



Radiator Cleaner



Description: A concentrate specially developed for cooling systems in general but particularly those in motor vehicles. Dissolves contaminants containing lime and oil in radiators, heating systems, pipes and in engines. For all cooling water and heating systems.

Application: Add contents to the cooling water. Run the heating system. Depending on the degree of contamination let the engine run approximately 10 to 30 minutes. Drain the cleaner and flush out the cooling system with water. Fill the cooling system according to the manufacturer's instructions. The content (300 ml) is sufficient for 10 liters of water.

Leaks in the cooling system lead to insufficient cooling. The liquid level is dropping and leads to increased engine temperatures, high wear and high risk of damage.



Fluorescent Leak Finder K



Description: Water-soluble leak detection fluid for fast and accurate localization of leaks. The product is a ready-to-use mixture with good penetrating properties as well as being fluorescent. Mixing ratio 1:10 - 1:500.

Application: Add Fluorescent Leak Finder K to the coolant circuit when at operating temperature via the compensating reservoir. Let the engine idle. With the help of an indicator lamp, the water leakage can be localized after a few minutes.

It's not easy to find small leaks caused by stone chipping, porous soldered connections or hairline fractures in the cooling system - the only clue is in the reduced coolant level.



Radiator Stop-Leak



Description: Used for sealing small leaks in cooling circuits of passenger motor vehicles, commercial vehicles, buses and two-wheel vehicles. Also suitable for cooling circuit with filters. Also suitable for aluminum and plastic radiators.

Application: Shake container before use. Add contents to the cold cooling system. Start up the heater. Then drive the vehicle for at least 10 minutes. Contents will treat up to 10 liters of coolant.

External contamination by insects, sand, dust, mud, etc. can clog the water cooler so that sufficient cooling is not guaranteed. Overheating of the cooling system can cause damage to the engine.



Universal Cleaner



Description: Concentrated water-diluted general cleaner, without phosphate silicates and solvents. Biodegradable. For mixing ratios up to 1:2000 depending on purpose.

Application: Depending on the type of soiling, mix the Universal Cleaner with water in the appropriate mixing ratio. Spray onto the water cooler with the help of a pump-spray bottle and after a time to take effect, remove the dissolved dirt with a high-pressure cleaner.