Product information

Cooling System Fast Flush

Bardahl Cooling System Fast Flush is a cooling system cleaner to remove insulating deposits caused by anti-freeze.

The problem
Fluid-coolant cooling systems in motor vehicles work by transferring heat from the engine walls to the coolant, ten to outside air via radiator tubes. Oxidized and jelled by-products of anti-freezes often hinder this heat transfer. They settle, forming deposits that catch and hold rust, scale and dirt. Together these form insulation that effectively cuts efficiency of the cooling system; as much as 20% of the system's efficiency is lost.
The same clogging action takes place in heaters that are part of the cooling system. In the heater, heating of the air for the car interior is blocked.

The action
Bardahl Cooling System Fast Flush uses wetting agents and solvents to clean out the insulating deposits caused by anti-freeze. Its wetting ingredients break down the molecular tensions that hold the jells together. The solvents penetrate to all areas where the deposits collect, breaking up and dissolving the unwanted insulation so it can be washed out of the system.

Bardahl Cooling System Fast Flush can be used both before and after anti-freeze is added. It should be used before fresh coolant is put in. Use this product whenever minor overheating problems occur.

Direction for use
Old anti-freeze need not be drained before using **Bardahl Cooling System Fast Flush**. Heater control should be fully on to allow complete circulation.

- Shake well one 300ml. can of **Bardahl Cooling System Fast Flush** and pour into the radiator.
- Either: a. Run engine at a high, but not boiling, temperature for at least 10 minutes (cover radiator if necessary)
  OR: b. Drive the car normally for 200-300 km.
- Drain the system and flush with fresh water until water runs clear.
- Fill the radiator with coolant.

Bardahl Cooling System Fast Flush is fully compatible with aluminum engines and radiators.

NOTE
Bardahl Cooling System Fast Flush should not be confused with heavy-duty type flushes used for badly plugged cooling systems; it needs no neutralizing after use.

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Lab Report

Bardahl Cooling System Fast Flush is a combination of sulfo-succinates, surfactants and oil solubilizers. This combination of ingredients acts to remove deposits due to ethylene glycol oxidation, contaminants such as dirt, grease, oil and small amounts of corrosion or hard water deposits. (For cooling systems with heavy corrosion or hard water deposits, use of **Bardahl Power Descaler** is recommended.)

The typical cooling system for diesel or gasoline powered vehicles is designed to dissipate between 30 and 40% of the energy (heat) due to the combustion of fuel. Failure of an engine's cooling system to perform properly can lead to pre-ignition problems, engine oil degradation and thermal distortion of engine components.

The formation of deposits along the walls of a cooling system can cause what is described by Georgi, in his book 'Motor Oils and Engine Lubrication', as invisible overheating. This deposit formation acts as insulation, reducing the speed at which heat from the combustion chamber can be transferred to the coolant, leading to localized overheating. Deposit related overheating is often not noticed since it does not affect coolant temperature or radiator efficiency, resulting in the description, invisible overheating.

The overheating which results in boiling over of the cooling fluid and high temperature indication by the coolant temperature gauge is 'visible' overheating and can result from deposits in the radiator; leaks; defective coolant pump, fans or belts. To overcome overheating problems, engine and coolant manufacturers recommend the following:

1 Periodic changing of coolant and flushing of the system to maintain cooling efficiency and reduce deposits.
2 Use of inhibitor additives to reduce metallic corrosion.
3 Periodic inspection of caps, hoses and belts to insure proper functioning.

Bardahl Cooling System Fast Flush contains a blend of alkaline detergents and oil dissolving components which act to remove dirt and greasy deposits from the cooling system. The sulfo-succinate acts like powerful cleaning fluid in removing and suspending oil, grease and dirt. **Bardahl Cooling System Fast Flush** will also help remove some scale and rust, especially if it is associated with vigorous flushing of the system.

Bardahl suggests the following steps be used to maximize the effect of **Cooling System Fast Flush**:

1 Add 2% by volume **Cooling System Fast Flush** to the radiator. Draining of existing radiator fluid is not necessary.
2 Run engine at idle with heater valve open until coolant temperature reaches or slightly exceeds normal operating temperature. The coolant temperature should not be allowed to reach the fluid's boiling point.
3 Drain cooling system and flush with water, until water runs clear. If deposits or

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rust are still visible or overheating problems continue to occur, use **Bardahl Power Descaler**, following directions, to remove scale and rust deposits and check for leaks and mechanical problems.

4 Refill system with coolant, antifreeze and 2% by volume **Bardahl Cooling System Anti-rust.**

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