Flushing

Important:

- **Do not use a chemical flush.**
- **Store used coolant in the proper manner, such as in a used engine coolant holding tank. Do not pour used coolant down a drain. Ethylene glycol antifreeze is a very toxic chemical. Do not dispose of coolant into the sewer system or ground water. This is illegal and ecologically unsound.**
- **Various methods and equipment can be used to flush the cooling system. If special equipment is used (such as a back flusher) follow the manufacturer's instruction. However, always remove the thermostat before back flushing the system.**

1. **Block the drive wheels.**
2. **Place the transmission in park (P) or neutral (N).**
3. **Engage the park brake.**
4. **Run the engine until the thermostat opens.**
5. **Stop the engine.**
6. **Follow the drain and fill procedure using only clean drinkable water. Repeat the procedure if necessary, until the fluid is nearly colorless. Refer to Cooling System Draining and Filling .**
7. **Fill the coolant reservoir to the FULL HOT mark.**
8. **Fill the cooling system. Refer to Cooling System Draining and Filling .**

Cooling System Draining and Filling

Caution: With a pressurized cooling system, the coolant temperature in the radiator can be considerably higher than the boiling point of the solution at atmospheric pressure. Removal of the surge tank cap, while the cooling system is hot and under high pressure, causes the solution to boil instantaneously with explosive force. This will cause the solution to spew out over the engine, the fenders, and the person removing the cap. Serious bodily injury may result.

Important: If the procedure below is not followed a low or high coolant level condition and/or vehicle damage could result.

1. Park the vehicle on a level surface.
2. Remove the surge tank cap:
   2.1. Slowly turn the cap counterclockwise 1/4 to 1/2 turn and stop. Do not press down.
   2.2. Allow any residual pressure, indicated by a hissing sound, to be relieved.
   2.3. After all residual pressure stops, continue turning the cap counterclockwise.
3. Raise and suitably support the vehicle. Refer to Lifting and Jacking the Vehicle in General Information.
4. Place a drain pan under the drain cock.
5. Open the radiator drain cock.
6. Allow the cooling system to drain completely.
7. Inspect the engine coolant for the following:
   - Discolored -- follow the flush procedure below.
   - Normal in appearance -- continue with the next step.

Notice: When adding coolant, use DEX-COOL® coolant. If silicated coolant is added to the system, premature engine, heater core or radiator corrosion may result. In addition, the engine coolant will require change sooner-at 50 000 km (30,000 mi) or 24 months.

Notice: DO NOT use cooling system seal tabs, or similar compounds, unless otherwise instructed. The use of cooling system seal tabs, or similar compounds, may restrict coolant flow through the passages of the cooling system or the engine components. Restricted coolant flow may cause engine overheating and/or damage to the cooling system or the engine components/assembly.

Notice: Use the correct fastener in the correct location. Replacement fasteners must be the correct part number for that application. Fasteners requiring replacement or fasteners requiring the use of thread locking compound or sealant are identified in the service procedure. Do not use paints, lubricants, or corrosion inhibitors on fasteners or fastener joint surfaces unless specified. These coatings affect fastener torque and joint clamping force and may damage the fastener. Use the correct tightening sequence and specifications when installing fasteners in order to avoid damage to parts and systems.

8. Close the radiator drain cock.

   Tighten
   Tighten the radiator drain cock to 2 N·m (18 lb in).

9. Fill the cooling system through the surge tank.
10. Fill half the capacity of the cooling system with 100 percent DEX-COOL® coolant.
11. Slowly add clean drinkable water to the cooling system until the level reaches to the base of the neck.

12. **Start the engine.**
13. **Allow the engine to idle for 1 minute.**
14. **Install surge tank cap.**
15. **Cycle the engine RPMs from idle to 3000 in 30 second intervals until the coolant temperature reaches 99°C (210°F).**
16. **Shut off the engine.**
17. **Refer to step 2 above in order to remove the surge tank cap.**
18. **Start the engine.**
19. **Allow the engine to Idle for 1 minute. Fill the surge tank to 12.7 mm (0.5 in) above the COLD FULL mark on the surge tank.**
20. **Install the surge tank cap.**
21. **Cycle the engine RPMs from idle to 3000 in 30 second intervals until the coolant reaches 99°C (210°F).**
22. **Shut off the engine.**
23. **Refer to step 2 above in order to remove the surge tank cap.**
24. **Top off the coolant as necessary, 12.7 mm (0.5 in) above FULL COLD mark on the surge tank.**
25. **Rinse away any excess coolant from the engine and the engine compartment.**
26. **Inspect the concentration of the engine coolant.**
27. **Install the surge tank cap.**