1.0 General Information On Long-Term Antifreeze And Corrosion Inhibitors

The cooling system of BMW cars must only be filled with reputable brand name ethylene glycol long-term antifreeze having corrosion inhibitors that are compatible with aluminum radiators.

Coolants must fulfill four basic requirements.

— Guarantee sufficient cooling.

— Protect various metals (gray cast iron, steel, aluminum alloys, brass, copper and solder) against corrosion.

— Prevent excessive silicate gel precipitation, which may cause clogging of the cooling system.

— Guarantee operation of cooling system in winter (prevent freezing of coolant) and in summer by boosting the boiling point.

The quality or grade of a long-term antifreeze and corrosion inhibitor is very important to be able to protect metal (gray cast iron, steel, aluminum alloys, brass, copper and solder) in the cooling system against corrosion. It guarantees full operation of the cooling system in winter and also increases the boiling point at high outside temperatures and under heavy loads.

Initial Filling in Factory

The factory fills the cooling system for protection against freezing, for the U.S. and Canada, down to -34°F (-37°C). This means an antifreeze ratio of 50% antifreeze and 50% water. In severely cold areas, the antifreeze can be increased to 60% which provides freezing protection down to -62°F (-52°C). Do not exceed a 60% ratio of antifreeze.
The specified antifreeze ratio is important, since an insufficient amount would impair antifreezing and corrosion inhibiting protection. An excessive amount would not improve freezing protection, but instead reduce freezing protection.

Change Intervals

Regular checking of coolant concentration is part of Inspection I or II. Refer to applicable Model Year Service Maintenance Checklist for change intervals.

Long-Term Coolant

The BMW engine coolant has a long-term rating, except when the cooling system requires repairs. This coolant does not require a service interval if no repairs are made to the vehicles cooling system. Drained coolant is not to be re-used. Top up with new coolant.

Remarks and Limitations

Only tap water of drinking quality with the following properties may be used as coolant.

Appearance	—	colorless, clear
Residue	—	without suspended matter
pH value	—	6.5 - 8.0
Total hardness	—	max. 357 PPM Calcium Carbonate
Chloride content	—	max. 100 mg/l
Sulfate content	—	max. 100 mg/l

The antifreeze concentration in a cooling system should be checked before the beginning of winter. When determining the mixture concentration it is important to make sure that there is sufficient protection against freezing.

A hydrometer (radiator antifreeze tester) is required for correct determination of antifreeze concentration. The composition of long-term antifreezes and corrosion inhibitors differs between manufacturers.

BMW Anti-Freeze/Coolant contains no nitrites or phosphates and has been formulated to prevent excessive silicate drop-out. Order the 1gallon container under BMW Part No. 82 14 1 467 704.

Note: Do not mix BMW Anti-Freeze/Coolant with different antifreezes which contain nitrites and/or phosphates and a high silicate formulation.

2.0 Coolant Additives

No aftermarket coolant additives, including but not limited to those which provide additional corrosion inhibition or seal off minor leaks are approved by BMW.

Use of non-approved coolant additives may cause reduced heat transfer from the cylinder head to the coolant and the formation of hot spots. This can cause the burning through of cylinder head gaskets and/or cracking of the cylinder head.

BMW NA cannot accept the liability for the resulting effects and consequential damage caused by the use of coolant additives.