

## Anti-Freeze Solutions

Only the commercial branded anti-freeze preparations should be used for the radiator, and the amount of anti-freeze put in, which is dependent on the external temperature, should only be reckoned with reference to the instructions of the supplier.

The following table shows the values for the proportion of water to Glysantin or alternatively, Genantin, for various temperatures.

The capacity of radiator and engine together, filled up to the mark on the radiator filler neck, is 9.3 liters. This includes the DB-heater system.

Degrees of frost	Genantin/Glysantin Liters	Water Liters	Degrees of frost	Genantin/Glysantin Liters	Water Liters
approx. — 10° C.	2.5	6.8	approx. — 25° C.	4.1	5.2
approx. — 15° C.	3.3	6.0	approx. — 30° C.	4.5	4.8
approx. — 20° C.	3.7	5.6	approx. — 40° C.	5	4.3

Before putting in any anti-freeze solution, the cooling system must be thoroughly rinsed. This is particularly important if the cooling water contained any other additives.

**Caution!** An acid corrosion inhibitor must **not** be present in the cooling water together with an anti-freeze solution. This does not, however, apply to an oil-type corrosion inhibitor.

If the coolant is put in with the engine cold, it must only be filled up to the mark on the filler neck. Otherwise, when the coolant expands as it warms up, approximately 1 liter will be forced out through the overpressure valve and will be lost.

As a rule, the proportion for the freezing point of approx. — 20° C. is used. This is the proportion used when filling up radiators on cars for despatch from Sindelfingen during the winter season. If the temperature sinks below — 20° C., the coolant becomes jelly-like. But no damage can be caused to the cylinder block or the radiator. If the coolant circulation should be affected, resulting in boiling of the coolant, the system should be thawed out and the mixture concentration then increased.

After anti-freeze solutions have been in use, the radiator and the engine must be thoroughly rinsed out. In spring the drained coolant can be filtered through a clean cloth and stored in a well-sealed container until the next winter. But before refilling, the effectiveness of the mixture must be checked by means of a Glysantin/Genantin hydrometer and the cooling water must be treated with an oil-type corrosion inhibitor (see Job No. 50 — 1, Para. 23).

**Note:** The anti-freeze solution must only remain in the cooling water during the winter. As soon as the warmer weather begins, pure water must be used again since anti-freeze in the cooling water leads to overheating and loss of water in the summer and in extreme cases, to cylinder head damage.