

# Boiler Water Chemistry Guidelines

Models: Bosch Greenstar Combi, Bosch Greenstar



# BOSCH

## Introduction



**Please read this entire document prior to proceeding with any installation or maintenance of a Bosch Greenstar boiler.**

This bulletin is a supplement to the Bosch Greenstar Applications and Service Manuals, and its requirements must be met for full warranty coverage.

Follow these guidelines to ensure a long service life and trouble free operation of the appliance.

Any questions, please contact the Bosch Technical Service Department at 1-800-283-3787.

## Recommended steps for commissioning a new or retrofit boiler installation

- ▶ Flush the system with clean water.
- ▶ Isolate the boiler, fill the system with fresh water and a boiler cleaner, run for 30 minutes to 1 hour. Under no circumstances may boiler cleaner be pumped through the boiler.
- ▶ Thoroughly flush the system with fresh water. Ensure all zones and loops are flushed.
- ▶ Empty out sediment traps.
- ▶ Systems containing antifreeze not approved by Bosch, must be completely flushed to ensure no old fluid remains.
- ▶ Fill the system with fresh water and the proper amount of inhibitor.
- ▶ Verify the pH is within the proper range.
- ▶ Add additional inhibitor if pH is not within the proper range.
- ▶ Check pH annually.

- ▶ If using antifreeze, fill with approved antifreeze and fresh water.
- ▶ Always follow the cleaner, antifreeze, or additive manufacturer's instructions.
- ▶ Do not mix different manufacturer's products
- ▶ Follow manufacturer's data to determine the anti-freeze ratio for the desired freeze protection temperature.
- ▶ The following anti-freeze fluids have been approved:

### Approved Anti-freeze fluids

Chemical Name	Approved Concentration
Nalco Varidos FSK	22% - 55%
Fernox Alpha 11	Observe manufacturer's instructions
Antifrogen N	Observe manufacturer's instructions
Intercool NFP-50.AA	0% - 39%
NoBurst AL	0% - 55%



**Never use more than the approved concentration of anti-freeze fluids in the system water (see Approved Anti-freeze fluids table above).**

## Water Chemistry Guidelines

- ▶ System fluid pH must be maintained between 7 and 8.5 to prevent system damage.
- ▶ Use only untreated water to fill the system.
- ▶ Do not use TSP (tri-sodium phosphate).
- ▶ Do not use fill water treated with salt bedding type exchangers (ion exchanger).
- ▶ Never introduce non-approved boiler treatment or similar additives.

- ▶ Only use fill water with a hardness below 7 grains.
- ▶ Filling with chlorinated water is acceptable if chlorine levels are below 100 ppm.
- ▶ Do not use inhibitors or other additives unless listed in this document.
- ▶ Consult a local water treatment specialist for recommendations if any of the above is outside the stated ranges.
- ▶ The following corrosion inhibitors have been approved:

Approved Corrosion Inhibitors	
Chemical Name	Approved Concentration
Nalco 77381	1% - 2%
Sentinal X100	1.1%
Fernox F1	Observe manufacturer's instructions

When using oxygen permeable PEX, the system must be separated from the boiler by a heat exchanger.

A correctly sized and working expansion vessel must be installed.

Do not exceed the maximum permissible flow rate through the boiler. Excessive flow can cause erosion damage to the heat exchanger.

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### Eliminate System Leaks

Continuous addition of make-up water will constantly add oxygen to the system and lead to corrosion. All system leaks must be repaired immediately.



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