

# Closed System Labs Inc.

*Ensuring longevity with chemistry.*

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## Pre-Operational Cleaning & Preventive Water Treatment

FOR HYDRONIC LOOPS

### Pre-operational Cleaning

Even the cleanest installations require pre-operational cleaning to remove normal construction contaminants from interior surfaces, such as temporary protective coatings, splattered solder, casting sand, weld slag, metal oxides, grease and oil. Less careful fabrications can also leave plastic and metal shavings, label material, splattered solder, sawdust, drywall powder and workplace dirt inside the system. Any of these items can interfere with the protective function of water treatment. This alkaline cleaning method readies the system for water treatment.

**THIS ALKALINE CLEANING METHOD IS NOT TO BE USED IN SYSTEMS CONTAINING ALUMINUM**

- If system is empty, fill to normal level with make-up water; if system is full, proceed to next step.
- Add pre-operational cleaning chemicals\* to system via pot feeder.
- Heated Loops - Circulate water in all zones at operating temperature for at least 6 hours.
- Chilled Loops - Circulate water in all zones at room temperature for at least 24 hours.
- Concurrently drain system and make-up until pH of system water matches pH of make-up water.
- Check pH of make-up water using colorimetric test provided.
  - 1) Fill one test bottle with make-up water; add one packet phenolphthalein.
  - 2) Fill other test bottle with system water; add one packet phenolphthalein.
  - 3) Compare color of system water to that of make-up water:
    - If samples are same color, flush is complete.
    - If system water is more pink than make-up water, continue flushing, then repeat steps 2 and 3.
- If flushed water is not clear and colorless once matching pHs are reached, repeat entire cleaning procedure.

\*Contains trisodium phosphate (alkaline-cleaner), sodium sulfite (oxygen-scavenger); wear gloves, goggles and dust mask.

### Preventive Water Treatment

As soon as cleaning is complete, treat the system. Leaving the system clean and full of uninhibited fluid leaves it open to corrosion. Taking the following steps will protect the system during subsequent operation or subsequent time off-line.

- Add preventive water treatment\* to the system via the pot feeder.
- Heated Loops - Circulate water in all zones at operating temperature for at least 6 hours.
- Chilled Loops - Circulate water in all zones at room temperature for at least 24 hours.

\*Contains sodium tetraborate (pH-buffer), sodium lauroyl sarcosinate (corrosion-inhibitor), sodium sulfite (oxygen-scavenger).