

## Preoperational Cleaning of Closed Loops



Protective water treatment chemicals are added to a new or refurbished closed loop only after the system has been thoroughly cleaned. This is especially true if antifreeze is to be employed.

This cleaning procedure employs three chemicals and a pH indicator supplied by Richard Kunz, HVAC chemist for the District (719 635-1325).

**TSP (Tri Sodium Phosphate)**  
dissolves oils, waxes, fluxes; releases debris.

**SS (Sodium Sulfite)**  
removes dissolved oxygen; newly-cleaned metals will not rust.

**SLS (Sodium Lauryl Sarcosinate)**  
insulates cleaned metal surfaces, inhibiting bimetal corrosion.

**pH 9.0 Indicator**  
shows when flush-out of spent alkaline cleaner is complete (rinse water = pH 9.0 or lower).

### Procedure:

1. Flush the system with clean water until it runs clear and colorless.
2. For each 1000 gallons of system volume add:
  - one 4-pound Carton of TSP
  - one 14-ounce Bottle of SS
  - one 10-ounce Bottle of SLS
3. Circulate solution (heated if possible) with all loops circulating.  
Add additional TSP as needed to maintain dark pink results with pH indicator.
4. Sample each loop to verify complete circulation.
5. After 24 hours, flush spent cleaning solution to drain while making up with fresh water until draining water runs clear.
6. Stop flushing when pH 9.0 indicator does not turn the water pink.  
Do not add treatment chemicals to the newly cleaned system.
7. Notify The District Maintenance Department so it may include this closed loop system in its comprehensive protective treatment program.



Founding Member