



Concentration Control of Washing Compounds by Alkaline Titration

To achieve the best results from your aqueous parts washing system, concentration control is critical. The best way of checking concentration (both system side and in the laboratory) is by alkaline titration. The two different titration methods differ only in the glassware and precision involved. They both measure concentration by measuring the total alkalinity of the working solution by titrating to an end point; typically a "color change indicator" tank side to a specific pH measure on a pH meter in the laboratory. This value is then converted into concentration by multiplying the number of drops of titrant by the percent concentration per drop to calculate concentration.

This titration technique can be used for synthetic and semisynthetic coolants as well. However a different type of test kit is used (CGF1) for the different techniques.

The CL-1 titration kit is designed to do the alkaline titration of washing compounds "system side" or any other place where special laboratory equipment may not be available.

4. Add two to three drops of the appropriate indicator (either "A" or "B") depending on which is called for in the test protocol. (See the product information sheet.)

5. Add 1.3N sulfuric acid one drop at a time (be sure to hold the dropper vertically), swirl the test vial to mix and then repeat until the color change occurs

- "A" will change from pink to colorless
- "B" will change from a yellow/orange to a red/orange



6. Record the number of drops necessary to cause the change

7. Consult your TRIM® product Data & Information sheet for the titration conversion factor and multiply the conversion factor by the number of drops to determine the percent concentration. There is also a graph to do the conversion on the D&I as well.

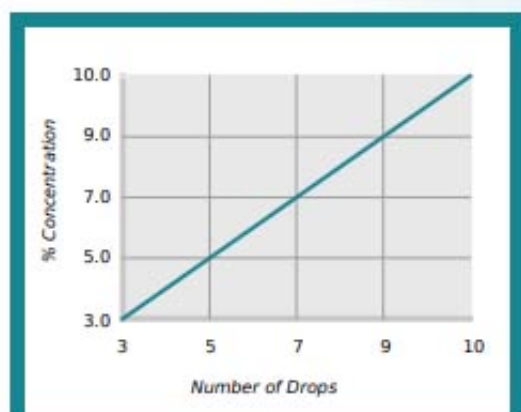
8. Clean and put test equipment away

It is always desirable to record the results of your testing for comparison at a later date.

NOTES:

- For more specific information consult the detailed instructions included with the CL-1 Drop Count Kit.

Concentration by Titration



$$\% \text{ Concentration} = \text{No. of Drops} \times \text{Titration Factor}$$
$$\text{Titration Factor} = 1.00$$

Each kit contains complete instructions but the basic method is as follows:

- Fill the measuring vial with the solution to be tested
- Empty the measuring vial into the test container
- Allow the fluid to cool to room temperature



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2. While this kit is designed for use with TRIM[®] brand cleaning compounds it can be used with any cleaner after developing the proper factors.
3. Laboratory test methods for TRIM brand cleaners are available from Master Fluid Solutions.