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JohnsonDiversey
Clean is just the beginning

Tech Tips

Proper Titrating Techniques for Measuring Chemical Concentration

Before working with any chemicals, read and observe precautionary labelling and the MSDS.

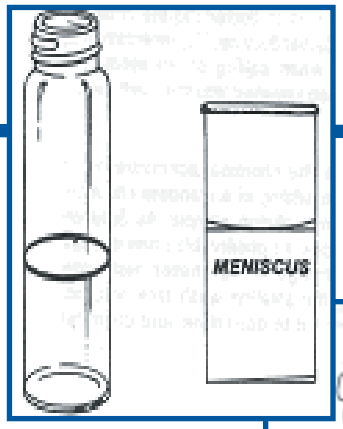
Titrations are chemical tests used to determine the concentration of a detergent or sanitizer solution. Common titrations normally performed in a food plant are:

Chemical	Reaction	Titrant Indicator	Color Change
Alkali	Acid/Base	Acid (H_2SO_4) Phenolphthalein	Red → Clear
Acid	Acid/Base	Alkali (NaOH) Phenolphthalein	Clear→ Red
NaOCl or Chlorine	Oxidation - Reduction	Thiosulfate ($Na_2S_2O_3$) Starch/Iodine	Blue → Clear
Quat (Cationic)	Anionic/ Cationic	Dodecyl SO_4 Chrome Azurol (Anionic)	Purple → Orange

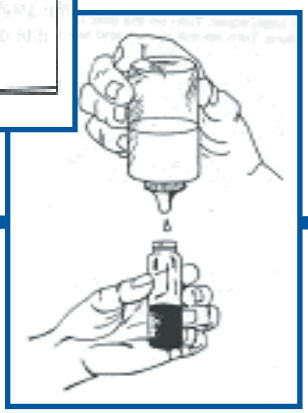
Field Titration Procedure

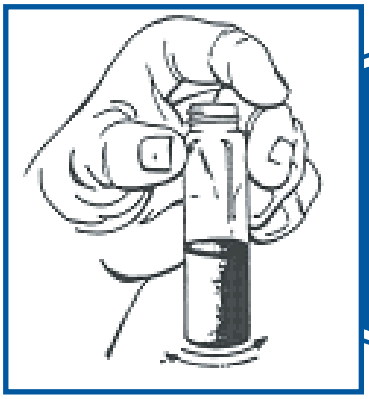
Step 1: Collect sample.
Obtain a representative sample from the wash tank, sampling petcock, or line. For obtaining a foam sample, foam the product into a bucket and allow the foam to collapse.

Step 2: Measure Sample.
Fill sample vial to calibrated mark. Foam or bubbles do not count. The meniscus is the curved portion of the liquid that should touch the calibrated mark.



Step 3: Titrate.
Follow directions in the kit. Hold the bottle straight in a vertical line with the vial and begin titration. Do not hold the bottle at an angle.





Step 4. Swirl.
Count the drops of the titrant as it is added to the vial. The endpoint is the first permanent color change obtained.
A phenolphthalein endpoint should remain permanent for 30 seconds. If needed, repeat titration to confirm results.

Step 5. Calculate results.
The usual formula is:
Of Drops X Factor of Product = Concentration of Product

Step 6. Record.
Determine if corrective action is required.
Keep in mind, the accuracy of a field test titration is +/- 10%.

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