



2400 East Fifth Street- P.O. Box 647
Marshfield, WI 54449-0647

926 CHLORIDE ANALYZER SETUP, CALIBRATION & PROCEDURES

Setup

Install electrodes & stirrer (7803910, 7803911, 7803950). Connect analyzer to power cord (7803153), surge suppressor (4813016), and grounded outlet. Move back panel power switch to **'1' / ON**, analyzer performs start up function. User prompts will be displayed during operation. Allow 5 - minutes before use.

Condition Cycle

Add to the scribed mark on a clean beaker (7803010) approximately 14 ml Combined Acid Buffer (1313751). Pour a small amount of Chloride Standard 200 mg/L Cl (7803750) to a separate clean beaker. Add 500 ul Chloride Standard to the Acid Buffer. Place beaker with solution on the analyzer's platform, raise fully up to locked position. Press **CONDITION**, allow approximately 2 - minutes to complete the cycle.

If the analyzer stops at 15 - seconds, the electrodes require further conditioning. Press **CONDITION** again, a 3rd prompt may be required. After completion of the conditioning cycle keep the platform raised.

Calibration

Press **SELECT** to display mg/L. Using established pipette procedures fill calibrated pipette (2713006) set at 250 ul with chloride standard and deliver to the conditioned acid buffer. Press **TITRATE**. After 5 - seconds the display will show a count in mg/L until automatic stop, end of titration. The displayed target value is 100 mg/L, with an acceptable tolerance of ± 3 mg/L. Keeping the platform raised, perform five additional consecutive titrations, average results. The acceptable average is 98.5 to 101.5 mg/L. If within spec proceed with sample tests. If out of spec ensure proper technique and check pipette for accuracy. Adjust pipette if necessary, perform calibration procedure again. If using a pipette set at 500 ul the target value is 200 mg/L, the acceptable average is 198.5 to 201.5 mg/L.

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PROCEDURE FOR CHEESE

For this example the sample contains approximately 40% moisture content.

Carefully weigh a 5.00 gram sample from a mixed, blended or homogenized best representation of the cheese to be tested. Using a clean container blend a minimum 45 - seconds with 98.0 gram / mls distilled water heated to approximately 140 F. Using a blunt object such a clean 2 - ounce milk vial, press a coffee or other suitable filter into the blended solution.

Press **SELECT** to display mg% salt NaCl. Fill calibrated pipette set at 250 ul with filtered solution. Deliver the sample to the conditioned acid buffer, press **TITRATE**. Record result. Keep the beaker raised allowing seven consecutive tests before replenishment of acid buffer and a new conditioning cycle is required. Perform duplicate or triplicate tests of the same sample and average results.

Calculation for an average of 31 mg% salt:

$$31 \text{ mg\% (0.031)} \times 20 \text{ (dilution)} \times 2 \text{ (250 ul pipette)} = 1.24\% \text{ salt NaCl}$$

Another expression: 31 = 1.24% salt. More examples: 23 = 0.92% salt, 49 = 1.96% salt, etc.

To achieve repeatable results, by experimentation determine the best amount of time required for blending and / or setting. When the analyzer is selected to display mg% this is applicable for samples containing sodium chloride NaCl. For measuring chloride salts other than NaCl select analyzer to display mg/L and perform a custom calculation to determine 'percent salt'. Review COA's for the type(s) of salt being added.

Samples containing high and low chloride / salt content can be tested by varying the amount of sample, dilution or volume delivered for tests. Adjust calculations accordingly.

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MAINTENANCE and TIPS for SUCCESSFUL ANALYSIS

Calibrations are recommended at the start of days or shifts, or after 40 - 50 tests.

After tests are complete or when the analyzer is not in use for more than one hour, with electrodes and stirrer in place, lower the beaker, rinse electrodes with distilled water, blot off excess and allow electrodes to air dry.

Flush the pipette by discarding to waste the first sample to help ensure there is no residue from a previous test. Fill pipette from below any fat layer that may be present in the blended solution. Ensure pipette is completely filled with no voids or any excess visible at its tip, and the sample is fully delivered to the conditioned acid buffer.

The longer anode electrode (7803911) installed on the front right side of the analyzer shortens with use. Adjust it by pulling downward to a position in line with the other electrodes. Ensure its non-worn end is installed up into the electrode holder. Replace when it is less than 57 mm / 2.25" in length.

It is common that electrodes will have a colored / blackish appearance during tests. To clean electrodes, pull them and the stirrer straight down from the holder and clean to a bright appearance using silver cleaner (7803730) and a soft cloth or wipe. Spinning electrodes helps in the cleaning process. Ensure all silver cleaner is removed.

The back two sleeved electrodes (7803910) will require replacement after many tests, when their sleeves are loose or when normal results cannot be attained.

Contact our Customer Service Team for technical assistance and requests for preventative maintenance, service or to secure a loaner chloride analyzer stock# 4833535 from our Corporate Headquarters in Marshfield, WI.

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