

### Principle

Ammonium ions react at pH 12,6 with hypochlorite ions and salicylate ions in the presence of sodium nitroprusside as a catalyst to form indophenol blue.

### Range of Application

Surface water, waste water, drinking water, swimming bath water

### Interferences

T1
1000 mg/l: Cl <sup>-</sup> , SO <sub>4</sub> <sup>2-</sup>
500 mg/l: K <sup>+</sup> , Na <sup>+</sup> , Ca <sup>2+</sup>
50 mg/l: CO <sub>3</sub> <sup>2-</sup> , NO <sub>3</sub> <sup>-</sup> , Fe <sup>3+</sup> , Cr <sup>3+</sup> , Cr <sup>6+</sup> , Zn <sup>2+</sup> , Cu <sup>2+</sup> , Co <sup>2+</sup> , Ni <sup>2+</sup> , Hg <sup>2+</sup>
25 mg/l: Fe <sup>2+</sup>
10 mg/l: Sn <sup>2+</sup>
5 mg/l: Pb <sup>2+</sup>
2 mg/l: Ag <sup>+</sup>

The ions listed in T1 have been individually checked up to the given concentrations and do not cause interference. We have not determined cumulative effects and the influence of other ions.

Primary amines are also determined and cause high-bias results. A10000-fold excess of urea does not interfere. All reducing agents interfere and cause low-bias results.

A large excess of ammonium can cause result displays within the measuring range. It is advisable to carry out a plausibility check by making dilutions.

The measurement results must be subjected to plausibility checks (dilute and/or spike the sample).

Sample Volume	4 mL
Sample/sample cuvette temperature	20°C
pH sample	4 - 9

## Method Library:

APC304 is pre-programmed in the method library. Please check under Settings/Software/Application/Methods **Ammonium** and Tests **APC304**

The screenshot shows the 'Settings' window with the 'Methods/Tests' tab selected. The 'Methods definitions' list on the left includes 'Ammonium', 'Chloride', 'COD', 'COD high', 'Formaldehyde', 'ISO-COD', 'LCA722', 'LCA722\_Reagent', 'LCK Ammonium', 'Nitrate', 'Nitrite', 'Orthophosphate', 'Phenol', 'Phosphate', 'Reagent Volume', 'Sample Volume', and 'TNb'. The 'Ammonium' method is selected. The 'Reading 1 (Concentration)' section shows the following settings: Low-range test: APC304, Underrange: 0.015, Overrange: 2.000; Middle-range test: None, Underrange: 0.000, Overrange: 0.000; High range test: APC303, Underrange: 2.000, Overrange: 47.000. There are checkboxes for 'Redo samples with underrange error if possible.', 'Redo samples with overrange error if possible.', 'Use default samplevolume if sample is diluted for the test before using lower range test.', and 'Redo samples with other error (barcode/absorbion error)'. The 'Method priority level' is set to 0. The 'Stir sample in samplecup by default' checkbox is checked. The 'Always clean/flush needle after aspirating/dispensing sample' checkbox is unchecked. The 'Waiting time after start processing cuvet before starting processing next cuvet of test' is set to 0 sec.

The screenshot shows the 'Settings' window with the 'Tests' tab selected. The 'Tests definitions' list on the left includes 'APC114', 'APC138', 'APC238', 'APC303', 'APC304', 'APC314', 'APC338', 'APC339', 'APC340', 'APC341', 'APC342', 'APC346 I', 'APC346 II', 'APC348', 'APC348o', 'APC349', 'APC349o', 'APC350', 'APC350o', 'APC400', 'APC500', 'LCA722\_0\_5', 'LCA722\_2\_0', 'LCA722\_R\_0\_5', 'LCA722\_R\_2\_0', 'LCK014', and 'LCK302'. The 'APC304' test is selected. The '1. Add sample to cuvette' step is configured with Volume (µl): 4000 and Speed (µl/s): 500. The '2. Rotate cap of cuvette' step is configured with Time (sec): 5 and Speed (%): 40. The '3. Shake cuvette vertical' step is configured with Time (min): 15. The '4. (Cooling) delay cuvette' step is configured with Priority: Normal. The '5. Measure cuvette' step is configured. The '6. None' step is configured. The '7. None' step is configured. The '8. None' step is configured. The '9. None' step is configured. The '10. None' step is configured. The '11. None' step is configured. The '12. None' step is configured. There are checkboxes for 'Blank measurement needed for test.', 'Only measure blank.', and 'Re-create blank if re-measurement is needed for test.'. The 'Use reaction-cuvette' checkbox is unchecked. The 'Final capping overload (0-99%)' is set to 40.

## Run the APC 304 Ammonium method

Create a Run like described in the QUICK GUIDE

- Place the APC304 cuvettes according to the settings in the Software in the cuvette racks.
- Place the samples according to the settings in the Software in the sample racks
- Check if enough Rinsing/Dilution water is available
- Initialize the AP 3900 multi and the Dispenser



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