

### Principle

Phosphate ions react with molybdate and antimony ions in an acidic solution to form an antimonyl phosphomolybdate complex, which is reduced by ascorbic acid to phosphormolybdenum blue

### Range of Application

Waste water, drinking water, boiler water, surface water, process analysis

### Interferences

T1	
5000 mg/l: SO <sub>4</sub> <sup>2-</sup>	50 mg/l: Co <sup>2+</sup> , Fe <sup>2+</sup> ,
2000 mg/l: Cl <sup>-</sup>	Fe <sup>3+</sup> , Zn <sup>2+</sup> , Cu <sup>2+</sup> , Ni <sup>2+</sup> ,
1000 mg/l: K <sup>+</sup> , Na <sup>+</sup>	I <sup>-</sup> , NO <sub>2</sub> <sup>-</sup> , Cd <sup>2+</sup> , NH <sub>4</sub> <sup>+</sup> ,
500 mg/l: NO <sub>3</sub> <sup>-</sup>	Mn <sup>2+</sup> , Al <sup>3+</sup> , CO <sub>3</sub> <sup>2-</sup> , SiO <sub>2</sub>
250 mg/l: Ca <sup>2+</sup>	5 mg/l: Sn <sup>4+</sup> , Hg <sup>2+</sup>
100 mg/l: Mg <sup>2+</sup>	2.5 mg/l: Ag <sup>+</sup> , Pb <sup>2+</sup>
	1 mg/l: Cr <sup>3+</sup>
	0.5 mg/l: Cr <sup>6+</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.

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

<b>Sample Volume</b>	<b>2,0 mL</b>
<b>Reagent B Volume</b>	<b>0,2 mL</b>
<b>Reagent C Volume</b>	<b>0,2 mL</b>
<b>Reagent B Filling</b>	<b>60 mL</b>
<b>Reagent C Filling</b>	<b>30 mL</b>
<b>Reagent D Filling</b>	<b>12 g</b>
<b>Temperature Sample/sample cuvette</b>	<b>15 – 25°C</b>
<b>pH sample</b>	<b>2 - 10</b>

**Settings**

General | Methods/Tests | QC/Blanks | Reagents trays | Colors | Remote messaging | Other parameters

Sample profiles | **Methods** | Tests | Other parameters

Methods definitions:

- Ammonium
- Chloride
- COD
- COD high
- Formaldehyde
- ISO-COD
- LCA722
- LCA722\_Reagent
- LCK Ammonium
- Nitrate
- Nitrite
- Orthophosphate**
- Phenol
- Phosphate
- Reagent Volume
- Sample Volume
- TNb

Buttons: Add Method, Delete Method

**Reading 1 (Concentration):**

Low-range test: APC349o Underrange: 0.050 Overrange: 1.500

Middle-range test: APC348o Underrange: 0.500 Overrange: 5.000

High-range test: APC350o Underrange: 2.000 Overrange: 20.000

Redo samples with underrange error if possible.

Redo samples with overrange error if possible.

-> High-range cuvette overrange dilution factor: 2

Use default samplevolume if sample is diluted for the test before using lower range test.

Redo samples with other error (barcode/absorption error).

Method priority level: 0

Stir sample in samplecup by default.

Always clean/flush needle after aspirating/dispensing sample.

Waiting time after start processing cuvet before starting processing next cuvet of test: 0 sec.

Buttons: OK, Cancel

## Method Library:

APC349 ortho is pre-programmed in the method library. Please check under Settings/Software/Application/Methods **Orthophosphate** and Tests **APC349o**

The screenshot shows the 'Settings' dialog box with the 'Tests' tab selected. The 'Tests definitions:' list on the left includes various test names, with 'APC349o' highlighted. The main configuration area shows 12 steps for the test procedure:

Step	Action	Volume (µl)	Speed (µl/s)	Time (sec/min)	Reagent	Speed rot. (%)	Speed inv. (%)	Priority
1.	Add sample to cuvette	2000	500					
2.	Add reagent to cuvette	200	400		B 348/349/350			
3.	Add reagent to cuvette	200	400		C 348/349/350			
4.	Shake cuvette by inversion			10		50		
5.	(Cooling) delay cuvette			10				Normal
6.	Measure cuvette							
7.	None							
8.	None							
9.	None							
10.	None							
11.	None							
12.	None							

Additional options at the bottom:

- Blank measurement needed for test.
- Only measure blank.
- Re-create blank if re-measurement is needed for test.
- Use reaction-cuvette:
- Final capping overload (0-99%): 40

## Note

The APC349 ortho need a preparation of Reagent C:

Use the delivered spoon and take 2 spoonful of Reagent D into Solution C. Invert it for approximately 30 seconds (until it's solved). This solution is stable for 5 days at room temperature.

## Run the APC349 ortho Phosphorous method

Create a Run like described in the QUICK GUIDE

- Place the APC349 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
- Place the Reagent B and C according to the settings in the Reagent trays

	Name:	Volume:	Re-filled:
Position 1:	A 339	50.00	<input checked="" type="checkbox"/>
Position 2:	A 340	5.20	<input type="checkbox"/>
Position 3:		0.00	<input type="checkbox"/>
Position 4:		0.00	<input type="checkbox"/>
Position 5:	B 348/349/350	27.00	<input type="checkbox"/>
Position 6:	C 348/349/350	29.60	<input type="checkbox"/>

Volume in reagents cup:

Volume in filled reagents cup:  ml.

Warning level reagents cup:  ml.

Other liquid level settings:

Tray definition -> Max. Liquid level:

10th of mm -> ml:

- Check if fresh and enough pipette tips are available
- Check if enough Rinsing/Dilution water is available
- Initialize the AP 3900 multi and the Dispenser



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