## **Formaldehyde**

### **Methods**

Formaldehyde, a toxic substance, is used in the following applications: metal plating baths, textile treatments, biological specimen preservatives, and disinfectants of medical equipment. Commercial formaldehyde gas is readily soluble in water.

### **The Purpald Method**

Reference: Purpald® developed by Aldrich Chemical Co. Purpald® is subject to fewer interferences than Shiffs' reagent or chromotropic acid procedures. A purple-colored complex is formed when Purpald in alkaline solution reacts with formaldehyde. Results are expressed as ppm (mg/L) CH<sub>2</sub>O.

Shelf-life of the Purpald Reagent: 5 months. We recommend stocking quantities that will be used within four months.

### The Acid Titrimetric Method

Reference: ASTM D 2194-79, Concentration of Formaldehyde Solutions.

CHEMetrics offers a titrimetric method for formaldehyde, which uses sulfuric acid and sodium sulfite. The end point indicator, thymolphthalein, provides a sharp color change from colorless to bright blue. Results are expressed as percent (%) formaldehyde.

# Visual Kits

Range: 0-1 & 1-5 ppm MDL: 0.1 ppm / Method: Purpald	
	Cat#
CHEMets Kit	K-4605
CHEMets Refill, 30 ampoules, Shelf-life 5 months	R-4605
Activator Solution Pack, six 20 mL bottles	A-4201 <sup>1, 2</sup>
Activator Solution Pack, six 10 mL bottles	A-42021
Low Range Comparator 0, 0.1, 0.2, 0.3, 0.4, 0.6, 0.8, 1.0 ppm	C-4601
High Range Comparator 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0 ppm	C-4605

Kit comes in a plastic case and contains everything needed to perform 30 tests (except distilled water): Refill, Low and High Range Comparators, Activator Solutions, 25 mL sample cup, instructions, and MSDS.

MDL: 5 ppm / Method: Purpald	C.1#
MACH WAR IC'S	Cat#
VACUettes Kit	K-4605D
VACUettes Refill, 30 ampoules, Shelf-life 5 months	R-4605D
Activator Solution Pack, six 20 mL bottles	A-4201 <sup>1, 2</sup>
Activator Solution Pack, six 10 mL bottles	A-42021
Low Range Comparator 0, 5, 7.5, 10, 15, 20, 25, 30 ppm	C-4601D
High Range Comparator 30, 45, 60, 75, 87.5, 100, 112.5, 125, 150 ppm	C-4605D
Kit comes in a plastic case and contains everything needed to (except distilled water): Refill, Low and High Range Compar Solutions, dilutor snapper cup, micro test tube, instructions,	ators, Activator

	Cat#
VACUettes Kit	K-4605A
VACUettes Refill, 30 ampoules, Shelf-life 5 months	R-4605A
Activator Solution Pack, six 20 mL bottles	A-42011,
Activator Solution Pack, six 10 mL bottles	A-42021
Low Range Comparator 0, 10, 15, 20, 30, 40, 50, 60 ppm	C-4601 <i>A</i>
High Range Comparator 60, 90, 120, 150, 175, 200, 225, 250, 300 ppm	C-4605 <i>A</i>

Kit comes in a plastic case and contains everything needed to perform 30 tests (except distilled water): Refill, Low and High Range Comparators, Activator Solutions, dilutor snapper cup, micro test tube, instructions, and MSDS.

Range: 0-120 & 120-600 ppm MDL: 20 ppm / Method: Purpald	
VACUettes Kit	Cat# K-4605B
VACUettes Refill, 30 ampoules, Shelf-life 5 months	R-4605B
Activator Solution Pack, six 20 mL bottles	A-4201 <sup>1, 2</sup>
Activator Solution Pack, six 10 mL bottles	A-42021
Low Range Comparator, 0, 20, 30, 40, 60, 80, 100, 120 ppm	C-4601B
High Range Comparator 120, 180, 240, 300, 350, 400, 450, 500, 600 ppm	C-4605B
Kit comes in a plastic case and contains everything needed to perform 30 tests (except distilled water): Refill, Low and High Range Comparators, Activator Solutions, dilutor snapper cup, micro test tube, instructions, and MSDS.	

- <sup>1</sup>The accessory pack supplies enough solution to perform at least
- <sup>2</sup> The Activator Solution, A-4201, is supplied as a dry chemical with NO expiration date. Once reconstituted, it has a shelf-life of 6 weeks that can be extended to 4 months if stored in the refrigerator when not in use.



Range: 0-1200 & 1200-6000 ppm MDL: 00 ppm / Method: Purpald	
VACUettes Kit	Cat# K-4605C
VACUettes Refill, 30 ampoules, Shelf-life 5 months	R-4605C
Activator Solution Pack, six 20 mL bottles	A-4201 <sup>1, 2</sup>
Activator Solution Pack, six 10 mL bottles	A-42021
Low Range Comparator 0,200, 300, 400, 600, 800, 1000, 1200 ppm	C-4601C
High Range Comparator	C-4605C

Kit comes in a plastic case and contains everything needed to perform 30 tests (except distilled water): Refill, Low and High Range Comparators, Activator Solutions, 25 mL sample cup, instructions, and MSDS.

Range: 🛚	U	.5	-5	%	o
----------	---	----	----	---	---

MDL: 0.50% / Method: Acid Titrant with Thymolphthalein Indicator

	Cat#
Titrets Kit	K-425

ncrements:

 $0.50,\,0.55,\,0.60,\,0.65,\,0.70,\,0.75,\,0.80,\,0.90,\,1.0,\,1.25,\,1.5,\,1.75,\,2.0,\,2.5,\,3.5,\,5.0\%$ 

Kit comes in a cardboard box and contains everything needed to perform 30 tests (except distilled water): thirty ampoules, Activator Solutions, 25 mL sample cup, ampoule blank, instructions, calibration table, and MSDS.



## **Instrumental Kits**

## V-2000 Multi-Analyte Photometer

(See page 12 for instrumental features)

Range:	0.40-8.00	ppm
Method:	Purpald	

Vacu-vials Kit, Shelf-life 5 months K-4203<sup>2</sup>

Kit comes in a cardboard box and contains everything needed to perform 30 tests (except distilled water): thirty ampoules, Activator Solutions, 25 mL sample cup, ampoule blank, instructions, calibration table, and MSDS.

Vacu-vials Kits require the use of the V-2000 Photometer or a spectrophotometer capable of accepting a 13 mm diameter round cell. Instrument sold separately.

Kit Components common to Formaldehyde	
Description	Cat#
Sample Cup Pack, 25 mL (6 ea) Micro Test Tube Pack (10 ea) Dilutor Snapper Cup Pack (6 ea) Ampoule Blank Pack (5 ea) Titrettor Pack (1 ea)	A-0013 A-0015 A-0018 A-0023 A-0053

- <sup>1</sup>The accessory pack supplies enough solution to perform at least 200 tests.
- <sup>2</sup>The Activator Solution, A-4201, is supplied as a dry chemical with NO expiration date. Once reconstituted, it has a shelf-life of 6 weeks that can be extended to 4 months if stored in the refrigerator when not in use.

#### Instructions are posted on our website.

If no shelf-life is listed for a product, then the shelf-life is at least 2 years.

