

Methods

Ozone is a strong oxidizing agent and is used as an alternative to chlorine as a biocide in the disinfection of drinking water. Ozone is used to remove odor, decolorize, and to control algae and other aquatic growths.

Ozone is also used in various disinfectant/sterilization processes in the food & beverage and pharmaceutical industries.

The DDPD Method

Reference: Developed by CHEMetrics, Inc.

The DDPD chemistry employs a methyl-substituted form of the DPD reagent. The A-7400 activator solution (potassium iodide) is added to the sample before analysis. Ozone reacts with the iodide to liberate iodine. The iodine then reacts with the reagent to give a purple color.

Various free halogens and halogenating agents produce color with the reagent. Chromate in samples below 25 ppm will not interfere with results. Results are expressed as ppm (mg/L) O₃.

The Indigo Method

References: Bader H. and J. Hoigne, "Determination of Ozone in Water by the Indigo Method," *Water Research Vol. 15*, pp. 449-456, 1981. *APHA Standard Methods*, 21st ed., Method 4500-O₃ B (2005).

With the indigo method, indigo trisulfonate reacts instantly and quantitatively with ozone, bleaching the blue color in direct proportion to the amount of ozone present. Malonic acid is included in the ampoule to prevent interference from up to 3 ppm chlorine. Results are expressed as ppm (mg/L) O₃.

Visual Kits

Range: 0-0.6 & 0.6-2 ppm
MDL: 0.025 ppm / Method: DDPD

CHEMets Kit	Cat#
CHEMets Refill, 30 ampoules	R-7402
Activator Solution Pack, six 10 mL bottles	A-7400 ¹
Low Range Comparator 0, 0.05, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6 ppm	C-7401
High Range Comparator 0.6, 0.7, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0 ppm	C-7402

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

Instrumental Kits

SAM Single-Analyte Photometer

(See page 15 for instrumental features)

Range: 0.20-3.00 ppm
Method: DDPD

SAM Kit	Cat#
Vacu-vials Kit, 30 ampoules, Activator Solution, 25 mL sample cup, ampoule blank, instructions, calibration table, and MSDS.	I-2007 K-7403

SAM Kit comes in a plastic case and contains everything needed to perform 30 tests: Vacu-vials Kit, SAM Photometer, 2 AA batteries, and instructions.

¹The accessory pack supplies enough solution to perform at least 200 tests.



Range: 0.15-0.75 ppm
Method: Indigo

	Cat#
SAM Photometer (Instrument only)	I-2018

SAM comes in a cardboard box with 4 AA batteries, and instructions.

TRACE Vacu-vials Kit (for use with I-2018), Shelf-life 6 months	K-7463
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Kit comes in a cardboard box and contains 86 TRACE Vacu-vials, instructions and MSDS.

NOTE: K-7463 TRACE Vacu-vials Kit must be purchased separately from I-2018 photometer.

V-2000 Multi-Analyte Photometer
(See page 12 for instrumental features)

Range: 0.30-1.00 ppm
Method: Indigo

	Cat#
Vacu-vials Kit, Shelf-life 6 months	K-7413²

Kit comes in a cardboard box and contains everything needed to perform up to 29 tests (except distilled water): thirty ampoules, 25 mL sample cup, ampoule blank, instructions, calibration table, and MSDS.

Range: 0.20-2.50 ppm
Method: DDPD

	Cat#
Vacu-vials Kit	K-7403

Kit comes in a cardboard box and contains everything needed to perform 30 tests: thirty ampoules, Activator Solution, 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 Ozone	
Description	Cat#
Sample Cup Pack, 25 mL (6 ea)	A-0013
Ampoule Blank Pack (5 ea)	A-0023

²Although the test kit contains 30 ampoules, a fresh reagent ampoule blank must be prepared for each series of tests; therefore, the number of samples that can be tested with each kit will vary from a maximum of 29 to a minimum of 15.

Instructions are posted on our website.
If no shelf-life is listed for a product, then the shelf-life is at least 2 years.

