

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 and sterilization processes in the food & beverage and pharmaceutical industries.

The DPD Method

References: USEPA Methods for Chemical Analysis of Water and Wastes, Method 330.5 (1983). APHA Standard Methods, 22nd ed., Method 4500-Cl G - 2000.

Potassium iodide is added to the sample before analysis. Ozone reacts with the iodide to liberate iodine. The iodine reacts with DPD (N, N-diethyl-p-phenylenediamine) to form a pink color. Results are expressed as ppm (mg/L) O₃.

The Indigo Method

References: Bader H. and J. Hoigné, Determination of Ozone in Water by the Indigo Method," Water Research Vol. 15, pp. 449-456, 1981. APHA Standard Methods, 22nd ed., Method 4500-O₃ B – 1997.

With the indigo method, indigo trisulfonate dye immediately reacts with ozone. The color of the blue dye decreases in intensity in proportion to the amount of ozone present in the sample. The test reagent is formulated with malonic acid to prevent interference from up to at least 10 ppm chlorine. Results are expressed as ppm (mg/L) O₃.

The CHEMetrics Ozone (indigo) Vacu-vials® Kit employs an innovative "self-zeroing" feature to eliminate the need to generate a reagent blank. Each Vacu-vials® ampoule is measured before and after being snapped in sample. The change in color intensity, measured in absorbance, between reagent in the un-snapped and snapped ampoule is used to determine the ozone concentration of the sample.



Visual Kit

Range: 0-0.60 & 0.6-3.0 ppm
MDL: 0.025 ppm / Method: DPD

| | Cat# |
|--|---------------------|
| CHEMets Kit | K-7404 |
| CHEMets Refill, 30 ampoules | R-7404 |
| Activator Solution Pack, six 10 mL bottles | A-7400 ¹ |
| Low Range Comparator 0, 0.05, 0.10, 0.20, 0.30, 0.40, 0.50, 0.60 ppm | C-7404 |
| High Range Comparator 0.6, 0.8, 1.0, 1.25, 1.5, 1.75, 2.0, 2.5, 3.0 ppm | C-7405 |

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 and instructions.



Instrumental Kits

Multi-Analyte Photometers
V-2000 / V-3000 Series
(See page 14 for instrumental features)

Range: 0-5.00 ppm
Method: DPD

| | Cat# |
|---|---------------|
| Vacu-vials Kit | K-7423 |
| Kit comes in a cardboard box and contains everything needed to perform 30 tests: thirty ampoules, Activator Solution, 25 mL sample cup, ampoule blank and instructions. | |

Multi-Analyte Photometer
V-3000 Series
(See page 14 for instrumental features)

Range: 0-0.75 ppm
Method: Indigo

| | Cat# |
|--|---------------|
| Vacu-vials Kit, Shelf-life 8 months | K-7433 |
| Kit comes in a cardboard box and contains everything needed to perform 30 tests: thirty ampoules, 25 mL sample cup, ampoule blank, and instructions. | |

Vacu-vials Kits require the use of a CHEMetrics Direct-Readout Photometer (photometers sold separately) or a spectrophotometer capable of accepting a 13 mm diameter round cell. See page 14 for details.

SAM Single Analyte Photometer

(See page 17 for instrumental features)

Range: 0-0.75 ppm

Method: Indigo

| | Cat# |
|---|---------------|
| SAM Kit | I-2022 |
| Vacu-vials Kit, 30 ampoules, 25 mL sample cup, ampoule blank and instructions. Shelf-life 8 months. | K-7433 |
| SAM Kit comes in a plastic case and contains everything needed to perform 30 tests: Vacu-vials Kit, SAM Photometer, light shield, 4 AAA batteries, screwdriver, and instructions. | |

Range: 0-5.00 ppm

Method: DPD

| | Cat# |
|---|---------------|
| SAM Kit | I-2019 |
| Vacu-vials Kit, 30 ampoules, Activator Solution, 25 mL sample cup, ampoule blank and instructions. | K-7423 |
| SAM Kit comes in a plastic case and contains everything needed to perform 30 tests: Vacu-vials Kit, SAM Photometer, light shield, 4 AAA batteries, screwdriver, and instructions. | |

Kit Components common to Ozone

| Description | Cat# |
|-------------------------------|--------|
| Sample Cup Pack, 25 mL (6 ea) | A-0013 |
| Ampoule Blank Pack (5 ea) | A-0023 |

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

Instructions and SDSs are posted on our website.

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

