



## Model 8070

### Qualitative Analysis Tubes and HazMat Kit



#### Description

Matheson's Qualitative Detector Tubes provide fast on-the-spot identification of unknown gases and vapors. There is no need for cumbersome grab samples, time delayed laboratory analyses, expensive analytical instrumentation or complex decision-tree matrix approaches. And since calibration, electricity and battery charging are not necessary, the tubes are always ready for immediate use.

Two types of tubes are available. Model 8014-186B identifies a broad range of organic compounds, such as gasoline, alcohols, hydrocarbons, etc. Model 8014-131 identifies inorganic compounds, such as carbon monoxide, sulfur dioxide, chlorine, etc. Typically, both models are used in concert, to assure detection of both organic and inorganic compounds.

#### Principle of Operation

In operation, Matheson's Qualitative Tubes are used in the same way as conventional detector tubes. That is, the high precision Kitagawa pump, Model 8014-400A, is used to draw the sample air through the tubes.

However, unlike conventional tubes which are "length of stain" providing quantitative measurements, these tubes are comprised of several sections. Each section contains a unique, high purity blend of reagents that will absorb and react with a particular gas or vapor, or family of gases and vapors. The resulting reaction causes a color change. The unknown gas or vapor is determined by which section(s) changed color, and to what color they changed to.



Model 8014-131 is used to detect inorganic compounds and consists of 5 sections, labelled "A" to "E". Only one tube is needed to provide a complete analysis for inorganics.

Model 8014-186B is used to detect organic compounds and consists of 4 sections, labelled "A" to "D". Because of the extensive number of detectable organic compounds, two tubes are required for a complete analysis. One tube is used for "A" side sampling (section A closest to pump), and is followed by a second, fresh tube for "D" side sampling (section D closest to pump). The combined results are used to identify unknown substances.

#### Compounds Detected and Detectable Limits (parts-per-million)

##### Inorganic Tube Model 8014-131

Acetic Acid (15)	Hydrogen Chloride (20)
Acetylene (10)	Hydrogen Sulfide (10)
Amines (5)	Methyl Mercaptan (10)
Ammonia (5)	Nitrogen Dioxide (5)
Carbon Monoxide (10)	Phosphine (2)
Chlorine (5)	Sulfur Dioxide (10)

##### Organic Tube Model 8014-186B

Acetaldehyde (100)	Heptane (10)
Acetone (500)	Hexane (10)
Acetylene (100)	Isopropyl Alcohol (500)
Aniline (50)	Kerosene (0.1 mg/l)
Benzene (100)	Methyl Alcohol (100)
Butadiene (1000)	Methyl Ethyl Ketone (100)
Butane (10)	Methyl Isobutyl Ketone (100)
1-Butanol (100)	Methyl Mercaptan (20)
Butyl Acetate (100)	Pentane (10)
Carbon Disulfide (100)	Phenol (10)
Cresol (20)	Propane (100)
Ethyl Acetate (500)	Styrene (100)
Ethylamine (100)	Tetrachloroethylene (100)
Ethyl Benzene (400)	Tetrahydrofuran (100)
Ethyl Cellosolve (100)	Toluene (200)
Ethylene (10)	Trichloroethane (1000)
Ethylene Oxide (100)	Trichloroethylene (1000)
Formaldehyde (10)	Vinyl Chloride (10)
Gasoline (0.1 mg/l)	Xylene (1000)

#### Ordering Information

Model Number	Description
8070	Basic Qualitative Analysis Kit, Complete with 8014-400A Sampling Pump, Maintenance Items, 1 box 8014-131 Inorganic Tubes, 2 boxes 8014-186B Organic Tubes, and Hard Shell Carrying Case with Shoulder Strap
8014-131	Inorganic Gas Detector Tubes, 10/box
8014-186B	Organic Gas Detector Tubes, 10/box
8014-017	5 Meter Extension Sampling Hose
8014-018	10 Meter Extension Sampling Hose
8014-300	Air Flow Indicator Tubes, 10/box
8014-300K	Air Flow Indicator Kit - with Aspirator Bulb, Case, and one box 8014-300 Tubes