

Table I, Gas and Vapor Detector Tubes

Gas or Vapor to be Measured	TLV-TWA (ACGIH)	Part No. (Box of 10 Tubes)	Detector Tube to be Used	Measurable Concentration Range	Shelf Life (years)***
Acetone	750 ppm	SG4101-151 SG4102-151L*	Acetone	0.01–2.0%	3
			Acetone, Low Range	0.005–1.2%	2
Acetylene	—	SG4102-171	Acetylene	0.05–4.0%	3
Ammonia	25 ppm	SG4102-3H SG4104-3HM SG4101-3M SG4103-3La SG4101-3L	Ammonia, High Range	0.2–32%	3
			Ammonia, Middle Range	0.05–3.52%	3
			Ammonia, Middle Range	10–1000 ppm	3
			Ammonia, Low Range	2.5–200 ppm	3
			Ammonia, Low Range	0.5–60 ppm	3
Arsine	0.05 ppm	SG4102-19La	Arsine, Low Range	0.04–10 ppm	2
Benzene	10 ppm	SG4102-121S†† SG4100-121 SG4104-121SL SG4104-121L†† SG4104-121SP††	Benzene	2–312 ppm	3
			Benzene	2.5–120 ppm	3
			Benzene, Low Range	1–100 ppm	2
			Benzene, Low Range	0.125–60 ppm	2
			Benzene, Low Range	0.5–10 ppm	2
Boron Trichloride	—	SG4100-12L	Hydrogen Cyanide, Low Range	1–14 ppm	2
Bromine	0.1 ppm	SG4100-9L SG4100-8La	Nitrogen Dioxide, Low Range	2–23 ppm	2
			Chlorine, Low Range	0.1–1.6 ppm	2
Butadiene	2 ppm	SG4102-174 SG4103-174L SG4103-174La	Butadiene	50–800 ppm	3
			Butadiene	2.5–100 ppm	2
			Butadiene	5–100 ppm	1
Butane	800 ppm	SG4102-104 SG4104-103†*	n-Butane	25–1400 ppm	3
			Hydrocarbons, Low Class	0.035–1.68%	2
tert-Butyl Mercaptan	0.5 ppm	SG4104-75 SG4105-75L	tert-Butyl Mercaptan	2.5–30 mg/m ³	2
			tert-Butyl Mercaptan, Low Range	0.5–30 mg/m ³	2
Carbon Dioxide	5000 ppm	SG4104-2HH SG4100-2H SG4100-2L SG4100-2LL	Carbon Dioxide, Extra High Range	2.5–40%	3
			Carbon Dioxide, High Range	0.5–20%	3
			Carbon Dioxide, Low Range	0.13–6.0%	3
			Carbon Dioxide, Extra Low Range	0.01–1.15%	3
Carbon Monoxide	25 ppm	SG4103-1HH SG4102-1H SG4102-1M SG4100-1L SG4100-1La SG4103-1LM SG4100-1LL	Carbon Monoxide, Extra High Range	1–40%	2
			Carbon Monoxide, High Range	0.1–10%	2
			Carbon Monoxide, Middle Range	0.05–4.0%	2
			Carbon Monoxide, Low Range	5–2000 ppm	3
			Carbon Monoxide, Low Range	25–1000 ppm	2
			Carbon Monoxide, Low Range	8–1000 ppm	2
			Carbon Monoxide, Extra Low Range	5–50 ppm	2
Carbon Monoxide in Hydrogen	—	SG4102-1LK	Carbon Monoxide in Hydrogen	5–300 ppm	2
Chlorine	0.5 ppm	SG4103-8HH SG4102-8H SG4100-8La SG4103-8LL*	Chlorine, Extra High Range	0.25–10%	2
			Chlorine	25–1000 ppm	2
			Chlorine, Low Range	0.05–16 ppm	2
			Chlorine, Extra Low Range	0.025–2 ppm	2
Chloroform	10 ppm	SG4102-137††	Chloroform	4–400 ppm	2
Diborane	0.1 ppm	SG4103-22	Diborane	0.02–5 ppm	2
Dimethyl Ether	—	SG4103-161	Ethyl Ether (Ether)	300–9000 ppm	3
Dimethylformamide	10 ppm	SG4106-183	Dimethylformamide	0.8–90 ppm	2
Ethyl Bromide	5 ppm	SG4102-136L††	Methyl Bromide	2.5–200 ppm	2

* Tubes must be stored at or 40–50°F or below.

** Use of these tubes requires the Pyrotec Pyrolyzer (Part No. SG4016).

*** Due to stocking and distribution procedures, tubes may be shipped with less than their full shelf life available. Typical shelf life when shipped will be 2–6 months below that indicated in the above table.

† Consists of nine analyzer tubes and one humidity control pretube, allowing nine tests.

†† Requires two tubes per test. Box of ten tubes will allow five tests.

Table I, Gas and Vapor Detector Tubes (continued)

Gas or Vapor to be Measured	TLV-TWA (ACGIH)	Part No. (Box of 10 Tubes)	Detector Tube to be Used	Measurable Concentration Range	Shelf Life (years)***
Ethyl Chloride	100 ppm	SG4101-138††	Methylene Chloride	0.025–1.0%	1
Ethylene	—	SG4102-172 SG4102-172L	Ethylene Ethylene, Low Range	25–800 ppm 0.2–50 ppm	3 2
Ethylene Glycol	Ceiling of 50 ppm	SG4102-165L††*	Ethylene Glycol	10–150 mg/m ³	2
Ethylene Oxide	1 ppm	SG4102-163 SG4102-163L††	Ethylene Oxide Ethylene Oxide, Low Range	0.05–3.0% 0.4–100 ppm	3 1
Halocarbon 11 (Trichlorofluoromethane)	Ceiling of 1000 ppm	SG4102-51L††** SG4102-51††** SG4102-51H††**	Fluorochlorocarbons, Low Range Fluorochlorocarbons Fluorochlorocarbons, High Range	0.8–43 ppm 8–320 ppm 275–6600 ppm	2 2 2
Halocarbon 12 (Dichlorodifluoromethane)	1000 ppm	SG4102-51L††** SG4102-51††** SG4102-51H††**	Fluorochlorocarbons, Low Range Fluorochlorocarbons Fluorochlorocarbons, High Range	1.8–97 ppm 11–440 ppm 325–7800 ppm	2 2 2
Halocarbon 22 (Chlorodifluoromethane)	1000 ppm	SG4102-51L††** SG4102-51††** SG4102-51H††**	Fluorochlorocarbons, Low Range Fluorochlorocarbons Fluorochlorocarbons, High Range	2.5–135 ppm 25–1000 ppm 1000–24000 ppm	2 2 2
Halocarbon 113 (1,1,2-Trichloro-1,2,2-Trifluoroethane)	1000 ppm	SG4102-51L††** SG4102-51††** SG4102-51H††**	Fluorochlorocarbons, Low Range Fluorochlorocarbons Fluorochlorocarbons, High Range	1.0–54 ppm 10–400 ppm 250–6000 ppm	2 2 2
Halocarbon 114 (Dichlorotetrafluoroethane)	1000 ppm	SG4102-51L††** SG4102-51††** SG4102-51H* **	Fluorochlorocarbons, Low Range Fluorochlorocarbons Fluorochlorocarbons, High Range	1.8–97 ppm 20–800 ppm 475–11400 ppm	2 2 2
Hydrogen	—	SG4103-30	Hydrogen (Color Intensity Tube)	0.5–2.0%	3
Hydrogen Chloride	Ceiling of 5 ppm	SG4102-14M SG4101-14L	Hydrogen Chloride, Middle Range Hydrogen Chloride, Low Range	10–1000 ppm 0.2–40 ppm	3 3
Hydrogen Cyanide (Hydrocyanic Acid)	Ceiling of 4.7 ppm	SG4102-12H SG4105-12M SG4100-12L SG4103-12LL	Hydrogen Cyanide, High Range Hydrogen Cyanide, Middle Range Hydrogen Cyanide, Low Range Hydrogen Cyanide, Extra Low Range	0.05–2.0% 17–2400 ppm 0.36–120 ppm 0.2–7 ppm	3 2 2 2
Hydrogen Fluoride	Ceiling of 3 ppm	SG4102-17	Hydrogen Fluoride	0.25–100 ppm	3
Hydrogen Sulfide	10 ppm	SG4102-4HT SG4104-4HP SG4101-4HH SG4100-4H SG4102-4HM SG4102-4M SG4100-4L SG4100-4LL SG4102-4LT*	Hydrogen Sulfide, Ultra High Range Hydrogen Sulfide, High Range Hydrogen Sulfide, Extra High Range Hydrogen Sulfide, High Range Hydrogen Sulfide, High Range Hydrogen Sulfide, Middle Range Hydrogen Sulfide, Low Range Hydrogen Sulfide, Extra Low Range Hydrogen Sulfide, Extra Low Range	1–40% 0.25–20% 0.1–4.0% 10–3200 ppm 25–1600 ppm 12.5–500 ppm 1–240 ppm 0.25–60 ppm 0.1–4 ppm	3 3 3 3 3 3 3 3 2
Hydrogen Sulfide/ Sulfur Dioxide (Total Sulfur Tube)	—	SG4104-45H	Hydrogen Sulfide/Sulfur Dioxide	0.02–8.0%	2
(Simultaneous Tube)	—	SG4104-45S†	Hydrogen Sulfide and Sulfur Dioxide	H ₂ S: 1.25–120 ppm SO ₂ : 0.25–20 ppm	3
Isobutane	—	SG4104-103†	Hydrocarbons, Low Class	0.035–1.68%	2
Liquefied Petroleum Gas	1000 ppm	SG4105-100A	Liquefied Petroleum Gas	0.02–0.8%	3
Mercaptans, Total	—	SG4103-70	Total Mercaptans	0.5–120 ppm	3

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Table I, Gas and Vapor Detector Tubes (continued)

Gas or Vapor to be Measured	TLV-TWA (ACGIH)	Part No. (Box of 10 Tubes)	Detector Tube to be Used	Measurable Concentration Range	Shelf Life (years)***
Mercury Vapor	0.025 mg/m ³	SG4103-40	Mercury Vapor	0.05–13.2 mg/m ³	2
Methyl Bromide	5 ppm	SG4102-136L††	Methyl Bromide	2–200 ppm	2
		SG4104-136La††	Methyl Bromide, Low Range	1–36 ppm	2
		SG4105-136H††	Methyl Bromide, High Range	10–600 ppm	3
Methyl Chloride	50 ppm	SG4102-51**	Fluorochlorocarbons	12–480 ppm	2
		SG4102-51L**	Fluorochlorocarbons, Low Range	1.6–86 ppm	2
Methylene Chloride (Dichloromethane)	50 ppm	SG4101-138††	Methylene Chloride	25–1500 ppm	1
		SG4102-51L**	Fluorochlorocarbons, Low Range	1.0–54 ppm	2
Methyl Mercaptan	0.5 ppm	SG4104-71	Methyl Mercaptan	0.25–70 ppm	3
		SG4104-71H	Methyl Mercaptan, High Range	20–2700 ppm	3
Nitric Oxide	25 ppm	SG4101-10††	Nitric Oxide	5–200 ppm	1
Nitrogen Dioxide	3 ppm	SG4100-9L	Nitrogen Dioxide, Low Range	0.5–125 ppm	2
		SG4101-10††	Nitric Oxide	5–200 ppm	1
Nitrogen Oxides	—	SG4101-10††	Nitric Oxide	NO: 5–200 ppm NO ₂ : 2–200 ppm	1
		SG4103-11L	Nitrogen Oxides, Low Range	0.08–5 ppm	2
		SG4102-11S	Nitrogen Oxides	5–575 ppm	1
		SG4102-11HA	Nitrogen Oxides, High Range	50–2500 ppm	1
Oxygen	—	SG4105-31B††	Oxygen	3–24%	2
Ozone	Ceiling of 0.1 ppm	SG4103-18L	Ozone, Low Range	0.025–3 ppm	3
		SG4104-18M	Ozone, Middle Range	4–400 ppm	2
Phosgene	0.1 ppm	SG4103-16*	Phosgene	0.05–20 ppm	1
Phosphine	0.3 ppm	SG4103-7J	Phosphine, High Range	2.5–1000 ppm	3
		SG4103-7	Phosphine	2.5–100 ppm	3
		SG4103-7L	Phosphine, Low Range	0.15–5 ppm	3
		SG4103-7La	Phosphine, Low Range	0.05–9.5 ppm	2
Propane	—	SG4104-103††	Hydrocarbons, Low Class	0.05–2.4%	2
Propylene	—	SG4105-100A	Liquefied Petroleum Gas	0.02–0.8%	3
Propylene Oxide	20 ppm	SG4102-163	Ethylene Oxide	0.3–3.6%	3
		SG4102-163L††	Ethylene Oxide, Low Range	0.4–100 ppm	1
Sulfur Dioxide	2 ppm	SG4102-5H	Sulfur Dioxide, High Range	0.05–8.0%	3
		SG4102-5M	Sulfur Dioxide, Middle Range	20–3600 ppm	3
		SG4101-5L	Sulfur Dioxide, Low Range	1.25–200 ppm	3
		SG4100-5La	Sulfur Dioxide, Low Range	0.5–60 ppm	3
		SG4102-5Lb	Sulfur Dioxide, Low Range	0.05–10 ppm	3
Sulfur Dioxide in Carbon Dioxide	—	SG4104-5LC	Sulfur Dioxide in Carbon Dioxide	0.1–26 ppm	2
Toluene	50 ppm	SG4103-161	Ethyl Ether	0.02–0.85%	3
		SG4102-122	Toluene	5–600 ppm	3
		SG4102-122L	Toluene, Low Range	1–100 ppm	3
Vinyl Chloride	5 ppm	SG4103-131	Vinyl Chloride	0.025–2.0%	3
		SG4102-131La††*	Vinyl Chloride, Low Range	0.25–54 ppm	2
		SG4103-131L††	Vinyl Chloride, Low Range	0.1–6.6 ppm	2
Water Vapor	—	SG4103-6	Water Vapor	0.5–32 mg/L	3
		SG4102-6L	Water Vapor, Low Range	0.1–2.0 mg/L	3
		SG4102-6LP	Pipeline Dewpoint Water Vapor	3–100 lb./MMCF	3

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