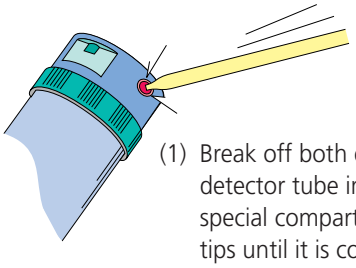
Detector Tube Listing

for MATHESON-Kitagawa Toxic Gas Detector System

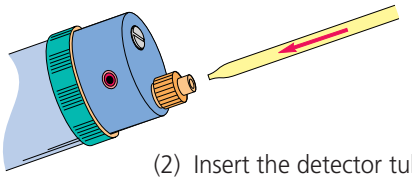
Description

MATHESON-Kitagawa Precision Detector Tubes are formulated with high purity reagents that absorb and react with the gas or vapor being measured. The reaction causes a colorimetric stain that varies in length proportional to the concentration of the gas or vapor being measured. For most tubes, the concentration is read directly from the measurement scale etched on each tube.

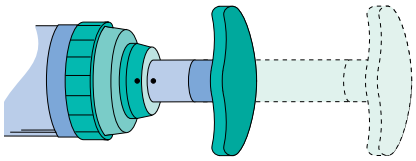
Just three easy steps are required to operate the detector:



(1) Break off both ends of a sealed, fresh detector tube in the pump's tip cutter. A special compartment retains the broken tips until it is convenient to discard them.

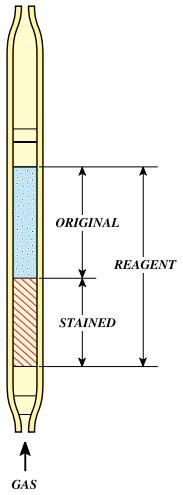


(2) Insert the detector tube into the pump's sample inlet, with the air flow arrow pointing toward the pump.



(3) Line up the red dots on the pump shaft and pump end collar, and pull the pump handle all the way out. The handle automatically locks and the pump begins to draw a 100cc sample through the detector tube. A proprietary Sample Vue™ indicator shows when sampling is complete (typically less than thirty seconds).

MATHESON-Kitagawa Toxic Gas Detector Tubes



MATHESON-Kitagawa Toxic Gas Detector

SAFETY EQUIPMENT INSTITUTE
Certified Model
(ANSI - ISEA 102 - 1990)

SEI Certification – The MATHESON-Kitagawa precision sampling pump and several detector tubes are certified by the Safety Equipment Institute (SEI). SEI is a recognized organization that offers certification programs to assist the industrial safety equipment industry in providing the American worker protective equipment that meets recognized standards and current state-of-the-art.

MATHESON
ask. . .The Gas Professionals™

Other Detector Tube Products From MATHESON

Qualitative Analysis Tubes And HazMat Kit for Determination Of Unknown Gases And Vapors

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

Unlike other manufacturer's detector tube products that involve an expensive and time consuming "decision-tree" sampling matrix, the MATHESON system uses just two detector tubes: one that detects organic substances and one that detects inorganics.

Indoor Air Quality Test Kit For Conducting IAQ Investigations

The MATHESON Model 8078 is a complete kit for analyzing many parameters relevant to indoor air quality. IAQ is normally associated with non-industrial environments such as office buildings, schools, hotels, residences, etc. where hazardous materials are not typically used, making it difficult to determine the cause of poor air quality.

In addition to the Kitagawa sampling pump, the kit includes detector tubes for measuring concentrations of carbon dioxide, formaldehyde, organic hydrocarbons and carbon monoxide. Qualitative tubes are also provided for unknown identification. An air flow indicator kit determines ventilation patterns. A ten meter sampling hose enables sampling in remote places.

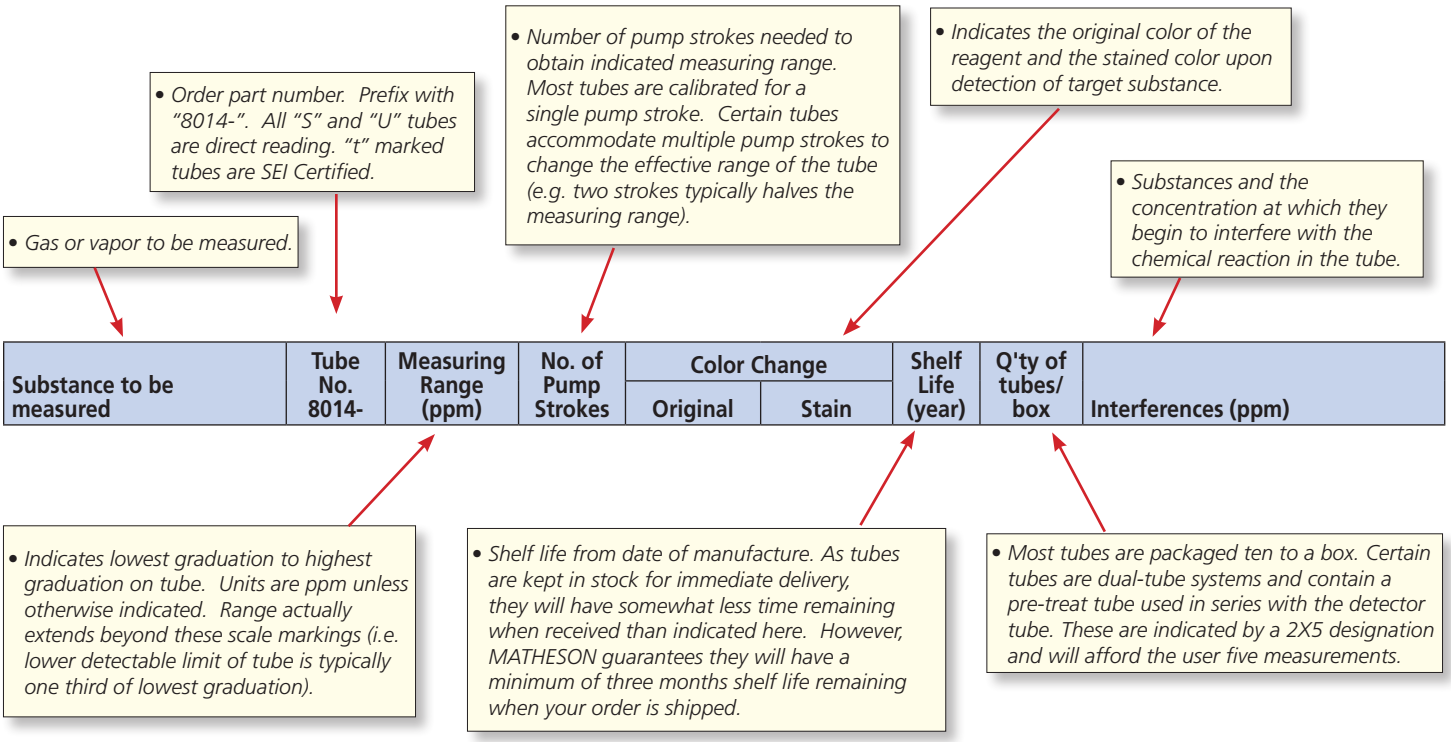
Compressed Breathing Air Analysis Kit

The MATHESON Model 8014BAK is ideal for anyone involved with the filling, generating or usage of compressed breathing air. It has been proven through use in a variety of industries and applications, including emergency air packs/respirators, fire departments/rescue squads, scuba diving, hazardous waste cleanups, etc.

Unlike other methods, there is no need to take a grab sample and analyze it off line. The 8014BAK is designed to connect directly to the compressed breathing air source. It is available with a choice of three connections: CGA346, CGA347 and 1/4"NPTF. Detector tubes are available to measure the concentration of carbon monoxide, carbon dioxide, oil mist, water vapor and oxygen.

For more information on any of these three products, please request MATHESON Brochure BR-56.

How To Read The MATHESON-Kitagawa Toxic Gas Detector Tubes Chart



List of MATHESON-Kitagawa Toxic Gas Detector Tubes

Substance to be measured	Tube No. 8014-	Measuring Range (ppm)	No. of Pump Strokes	Color Change		Shelf Life (year)	Q'ty of tubes/ box	Interferences (ppm)
				Original	Stain			
Acetaldehyde	133A	0.004~1.0%	1	yellow	pink	1	10	Acetone (1,400), Acrolein (35), Methyl ethyl ketone (900), Methyl isobutyl ketone (2,900), SO_2 (10)
	133SB	5~140	1	yellow	pink	2	10	Other Aldehydes, Ethanol
Acetic Acid	216S∞	1~50	1	pale pink	yellow	3	10	SO_2 (1/20 Acetic acid*), NO_2
Acetic anhydride	216S◊	1~15	1	pale pink	yellow	3	10	(10), HCl (2 Acetic acid*), Cl_2 (5)
Acetone	102SA	0.1~2.0% 1.0~5.0%	1 1/2	orange	dark brown	3	10	Alcohols, Other Ketones, Aromatic hydrocarbons, Esters, Halogenated hydrocarbons (0.5%)
	102SC	0.01~4.0%	1	yellow	pink	1	10	Acetaldehyde (30), Acrolein (20), Methy ethyl ketone (150), Methyl isobutyl ketone (400)
	102SD∞	125~5,000 50~2,000 20~800	1/2 1 2	yellow	dark brown	2	10	Alcohols, Esters, Ketones, Aromatic hydrocarbons
Acetylene	101S	50~1,000	1	pale yellow	brownish blue	3	10	Olefins (10), H_2S (10), CO (50), NH_3 , Butadiene (25), HCN, Cl_2, NO_2, CS_2, Benzene
(Acetylene dichloride)	see 1,2-Dichloroethylene							
Acetylene - Ethylene separately measureable	280S	C_2H_2; 20~300	1	yellow	dark brown	1	2X5	Tube for C_2H_2; CO (10), H_2 (5,000), Ethylene (2,000),
		C_2H_4; 200~2,000		pale yellow	blue			Tube for C_2H_4; CO (1,350), Acetylene (370), Propylene (20)
Acrolein	136	0.005~1.8%	1	yellow	pink	1	10	Acetone (20), Acetaldehyde (70), Methyl ethyl ketone (60), Methyl isobutyl ketone (500)
(Acryl aldehyde)	see Acrolein							
Acrylic acid	216S	1~50	1	Pale pink	Yellow	3	10	
Acrylonitrile	128SA	0.1~3.5%	1	orange	dark green	3	10	Acetylene (3%), Propane
	128SB	10~500	1	yellow	pale blue	2	10	(0.2%), Other organic gases or vapors except halogenated hydrocarbons (50)
	128SC	1~120	2	yellow	pink	1	2X5	Methyl ethyl ketone (600), Styrene (250), HCN (2), Butadiene (200)
	128SD	1~20 0.5~10 0.25~5 0.2~4	1 2 4 5	yellow	red	1	2X5	HCN
Allyl alcohol	184S◊	20~500	1	yellow	pale blue	2	10	Esters, Ketones, Alcohols, Aromatic hydrocarbons, Halogenated hydrocarbons
(Amidrazone)	see Hydrazine							
(Aminobenzene)	see Aniline							
(2-Aminoethanol)	see Monoethanol amine							
Ammonia	105SA	0.5~10%	1	pink	grey or yellow	3	10	Amines
	105SB	50~900	1	pale purple	pale yellow	3	10	SO_2 (1/4 NH_3*), Cl_2 (2), Amines
	105SC	10~260 5~130	1 2	pale purple	pale yellow	3	10	
	105SD	1~20 0.5~10 0.2~4	1 2 5	pale purple	pale yellow	3	10	Amines
	105SE	10~200 5~100 1~20	1/2 1 5	pale purple	pale yellow	3	10	
	105SH	0.5~30%	1	pink	blue brownish green	3	10	H_2S (3,000)
	105SM	0.1~1.0%	1	pale purple	pale yellow	2	10	Amines

∞ SEI certified
** Interference by coexistence of indicated substance at more than the parenthesized rate*
◊ With conversion chart
• New tubes

List of MATHESON-Kitagawa Toxic Gas Detector Tubes

Substance to be measured	Tube No. 8014-	Measuring Range (ppm)	No. of Pump Strokes	Color Change		Shelf Life (year)	Q'ty of tubes/ box	Interferences (ppm)
				Original	Stain			
(Amyl acetate)	see Pentyl acetate							
Aniline	181S	2~30 1~15	1 2	white	yellow	3	10	Toluidine (1/3 Aniline*), NH_3, Aliphatic amines, or Aromatic amines (the same concentration of Aniline)
Arsine	140SA	5~160	1	white	dark brown	2	10	H_2S (5), Hydrogen selenide (5), Phosphine (5)
	121U	0.1~2.0 0.05~1.0	1 2	pale yellow	pink	2	10	Hydrogen selenide, Mercaptans, H_2S, HCN, SO_2
Benzene - in presence of gasoline and other aromatic hydrocarbons	118SB	5~300	1	white	greenish brown	2	2X5	Toluene (over 150), Hexane (800), Xylene (over 300)
	118SE	1~80 0.2~1	1 5	white	greenish brown	2	2X5	
Benzene	118SC	4~100 2~50 1~25	1 2 4	white	greenish brown	2	10	Toluene, Xylene, CO (50), Hexane (100)
	118SD	1~75 0.2~15 0.1~7.5	1 5 10	white	greenish brown	2	2X5	
Bromine	114	1~20	1	white	orange	2	10	Cl_2 (1), ClO_2, NO_2
(Bromomethane)	see Methyl bromide							
1,3-Butadiene	168SA	0.03~2.6%	1	brownish orange	dark brown	3	10	Other organic gases or vapors except halogenated hydrocarbons (50), Propane (0.2%), Acetylene (3%)
	168SB	30~600	1	pale yellow	white	3	10	CO, Butane, Pentane, Ethylene, Propylene, Butylene, H_2S, Benzene, NH_3, HCN
	168SC	5~100 2.5~50	1 2	pale yellow	pale blue	1	10	Alcohols, Esters, Ketones, Aromatic hydrocarbons
	168SE	0.5~10.0 0.1~2.0	1 4	pink	white	3	2X5	
n-Butane	221SA	0.05~0.6%	1	orange	brown	3	10	Toluene, Hexane, Trichloroethylene
1-Butanol	190U◊	5~100	3	yellow	pale blue	2	10	Alcohols, Esters, Paraffin hydrocarbons, Aromatic hydrocarbons, Ketones, Halogenated hydrocarbons
2-Butanol	189U	10~300 4~120	2 4	yellow	pale blue	2	10	Alcohols, Esters, Paraffin hydrocarbons, Aromatic hydrocarbons, Ketones
tert-Butanol	111U◊	20~500	1	yellow	brown	2	10	Halogenated hydrocarbons
(2-Butanone)	see Methyl ethyl ketone							
Butyl acetate	139SB◊	0.01~1.0%	2	orange	brownish green	3	10	Acetylene (3%), Propane (0.2%), Other organic gases or vapors except halogenated hydrocarbons (50)
	138U	10~400	1	pale yellow	pale blue	1	10	Other organic gases or vapors
Butyl acrylate	211U	2~60	2	yellow	pale blue	2	10	Alcohols, Esters, Paraffin hydrocarbons, Aromatic hydrocarbons, Ketones, Halogenated hydrocarbons
(n-Butyl alcohol)	see 1-Butanol							
(sec-Butyl alcohol)	see 2-Butanol							
Butyl amine	105SD◊	1~20	1	pale purple	pale yellow	3	10	
Butyl cellosolve	190U◊	10~1,000	3	yellow	pale blue	2	10	Alcohols, Esters, Paraffin hydrocarbons, Aromatic hydrocarbons, Ketones, Halogenated hydrocarbons
Butyl ether	111U◊	10~1,200	1	yellow	brown	2	10	Alcohols, Esters, Ketones, Aromatic hydrocarbons
tert-Butyl mercaptan	130U	0.5~5 1~10	1 1/2	pale yellow	pink	2	10	Arsine, Hydrogen selenide, H_2S, HCN
Butyl methacrylate	111U◊	20~1,000	1	yellow	brown	2	10	

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				Original	Stain			
tert-Butyl methyl ether	111U◊	20~500	1	yellow	brown	2	10	
Butyric acid	216S◊	3~60	1	pale pink	yellow	3	10	
Carbon dioxide	126B	0.03~0.7% 100~1,500	1 3	purplish blue	pale pink	2	10	HCN (100), Cl_2 (200), SO_2, H_2S (150), NO_2
	126SA	0.1~2.6% 0.2~5.2%	1 1/2	purplish blue	pale pink	2	10	HCN (200), Cl_2 (100), SO_2 (500), H_2S (100)
	126SB	0.05~1.0%	1	purplish blue	pale pink	2	10	HCN (100), Cl2 (200), SO_2, H_2S (150), NO_2
	126SF	100~2000 200~4000	1 1/2	pink	yellow	2	10	
	126SG	0.02~0.7% 0.04~1.4%	1 1/2	pink	yellow	2	10	HCN
	126SH	1~20%	1	pink	yellow	2	10	SO_2 (3,000), H_2S (3,000), NO_2 (50)
	126UH	5~50%	1/2	white	purple	2	10	
Carbon disulfide	141SA	30~500	1	pink	yellow	2	2X5	H_2S (400), SO_2, Cl_2
	141SB∞	2~50 0.8~20	2 4	pink	yellow	3	2X5	H_2S (120), SO_2, Cl_2
Carbon monoxide	100	25~1,000 5~300	1 3	yellow	dark brown	3	10	Ethylene (5,000), H_2 (5,000), Acetylene, SO_2 or NO_2 (1/5 CO*)
	106S∞	10~250	3	yellow	dark brown	2	10	Acetylene (5), H_2S (20), SO_2 (1/5 CO*), NO_2 (1/10 CO*)
	106SA	40~2,000 5~50 20~1,000	1/2 4 1	yellow	dark brown	3	10	Ethylene or H2 (5,000), Acetylene (1/5 CO*), SO2 (1/5 CO*), NO_2 (1/5 CO*)
	106SC	1~50	1	orange	reddish purple	1	10	SO_2, NO_2 or Acetylene (1/50 CO*), Ethylene (1,000)
	106SH	0.1~2.0%	1	white	brown	1	10	Propane (0.15%), Isobutane (0.2%), Hexane (0.1%), Acetylene (0.3%), Ethylene (0.15%)
	106SS	30~500	1	yellow	dark brown	1.5	10	Acetylene (1/20 CO*), SO_2 (1/2 CO*), NH_3 (100 CO*), H_2S (1/2 CO*)
	106UH	0.1~10% 0.2~20%	1 1/2	white	dark brown	3	10	Propane, Isobutane, Acetylene, Ethylene, Hexane
Carbon monoxide - in presence of ethylene, colour intensity	106B	Measurement for 30~300 seconds 10~1,000	1	pale yellow	green to blue	3	10	H_2S (1,000), NO_2 (1), H_2 (10%)
Carbon monoxide - in presence of ethylene and/ or nitrogen oxides, colour intensity	106C	Measurement for 30~300 seconds 10~1,000	1	pale yellow	green to blue	2	10	H_2 (10%), H_2S (1,000)
Carbon tetrachloride	147S	1~60 0.5~1	1 2	white	red	1	2X5	Phosgene, Halogens, Cl_2, Trichloroethylene Halogenated hydrocarbons
(Carbonyl chloride)	see Phosgene							
Carbonyl sulfide	239S	5~60	1	pink	yellow	3	2X5	SO_2 (1/5 COS*), CS_2 (1/10 COS*), H_2S (1/2 COS*), C_4H_9 (0.1%)
Chlorine	109SA	1~40	1	white	yellowish orange	2	10	Br_2 (1), Cl_2O (1), NO_2 (1/2 Cl_2*)
	109SB∞	0.5~10 0.125~2.5 0.1~2.0	1 4 5	white	pale orange	2	10	Br_2 (1), Cl_2O (1), NO_2 (1/5 Cl_2*), NCl_3 (5)
	109U	0.1~2 0.05~1	1 2	white	pale purple	2	10	HCl (20 Cl_2*), NO_2
Chlorine dioxide	116	1~20	1	white	reddish orange	2	10	Br_2, Cl_2 or NO_2 (1)
(1-Chloro-2,3-epoxypropane)	see Epichlorohydrine							
Chlorobenzene	178SB	5~140 1~5	1 5	white	pale brown	2	2X5	Toluene, Xylene, CO (50), n-Hexane (100), Benzene, Ethyl benzene

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• New tubes

List of MATHESON-Kitagawa Toxic Gas Detector Tubes

Substance to be measured	Tube No. 8014-	Measuring Range (ppm)	No. of Pump Strokes	Color Change		Shelf Life (year)	Q'ty of tubes/ box	Interferences (ppm)
				Original	Stain			
(2-Chlorobutadiene)	see Chloroprene							
(Chloroethylene)	see Vinyl chloride							
Chloroform	152S	70~500 32~250 23~167	2 3 4	white	yellowish orange	2	2X5	Halogens, Halogenated hydrocarbons, n-Hexane (200)
Chloropicrin	172S	0.1~16.0 0.05~8.0	1 2	white	pink	1	2X5	Carbon tetrachloride, Phosgene
Chloroprene	169S	1.0~20 0.5~10	1 2	greenish yellow	pink	3	2X5	Cl_2, HCl (2,000), Vinyl chloride, Acetylene, Ethylene
Cresol	183U	0.5~25.0	2	pale yellow	pale brown	2	10	NH_3 (200), Aliphatic amines (50), Aromatic hydrocarbons (50), Phenols (2.5)
Cumene	111U◊	20~140	1	yellow	brown	2	10	
Cyclohexane	115S	0.01~0.6%	1	orange	dark green	3	10	Paraffin hydrocarbons, Acetylene, Ethylene, Benzene (400), Toluene (800), Xylene (2,000)
Cyclohexanol	206U	5~500	2	yellow	pale blue	2	10	Other Alcohols
Cyclohexanone	197U	2~100	3	yellow	pale blue	3	10	Alcohols
Cyclohexene	111U◊	20~300	1	yellow	brown	2	10	
Cyclohexyl amine	105SD	1~20	1	pale purple	pale yellow	3	10	
Decahydronaphthalene	111U◊	20~200	1	yellow	brown	2	10	
n-Decane	111U◊	5~90	1	yellow	brown	2	10	
Diacetone alcohol	190U◊	10~250	3	yellow	pale blue	2	10	Alcohols, Halogenated hydrocarbons, Paraffin hydrocarbons, Aromatic hydrocarbons, Esters
Diborane	242S	0.1~5.0 0.05~2.5 0.02~1.0	1 2 5	pale yellow	reddish purple	2	10	Arsine, Phosphine, Silane, Disilane
(Dibromoethane)	see Ethylene dibromide							
Dibutyl amine	105SD◊	2~20	1	pale purple	pale yellow	3	10	
o-Dichlorobenzene	214S	5~100	1	white	yellow	2	10	Alcohols, Paraffin hydrocarbons, Halogenated hydrocarbons, Esters, Aromatic hydrocarbons
p-Dichlorobenzene	215S	10~150	1	white	purplish brown	1	10	Benzene, Toluene, Hexane
1,1-Dichloroethane	235SA	10~160	1	white	purple	1	3X5	Nitrogen oxides, Halogens, Halogenated hydrocarbons, Hexane (20), Alcohols (400), Toluene (20)
1,2-Dichloroethane	230SA	5~50	1	white	purple	1	3X5	Nitrogen oxides, Halogens, Halogenated hydrocarbons, Hexane (100)
2,2-Dichloroethyl ether	223S	2~30	1	yellowish green	pink	1	2X5	Halogenated hydrocarbons
1,2-Dichloroethylene	145SA	42~840 20~400 9.2~184 4.2~84	1/2 1 2 4	yellow	red	1	10	Cl_2 (15), Vinyl chloride (5), Tetrachloroethylene (3), Trichloroethylene (3)
Dichloromethane	180S	30~1,000 10~200	2 4	white	reddish orange	2	2X5	Halogens, Halogenated hydrocarbons
1,3-Dichloropropane	194S	10~500	1	white	purple	1	2X5	Halogenated hydrocarbons
Diethyl amine	222S	1~20	1	pale purple	pale yellow	3	10	NH_3, Other Amines
Diethylbenzene	111U◊	10~180	1	yellow	brown	2	10	
Diethyl ether	107SA	0.04~1.4%	1	orange	dark green	3	10	Acetylene (3%), Propane (0.2%), Other organic gases or vapors except halogenated hydrocarbons (50)
	107U	20~400	1	pale yellow	pale blue	2	10	Alcohols, Ketones, Esters, Aromatic hydrocarbons

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• New tubes

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Substance to be measured	Tube No. 8014-	Measuring Range (ppm)	No. of Pump Strokes	Color Change		Shelf Life (year)	Q'ty of tubes/ box	Interferences (ppm)
				Original	Stain			
(Dimethyl benzene)	see Xylene							
Diisobutyl ketone	139U◊	20~1,000	1	yellow	pale blue	2	10	
Diisopropyl amine	105SD◊	1~16	1	pale purple	pale yellow	3	10	
N,N-Dimethylacetamide	229S	5~70	2	pale purple	pale yellow	1	10	CO_2, NH_3, Amines, Hydrazine
N,N-Dimethylformamide	196S	2~30 1~15	1 2	pale purple	pale yellow	2	10	SO_2 (200), CO_2 (0.1%), NH_3, Amines, Hydrazine
Dimethyl amine	227S	1~20	1	pale purple	pale yellow	3	10	NH_3, Other Amines
Dimethyl ether	123S	0.01~1.2%	1	orange	dark brown	3	10	Acetylene (3%), Propane (0.2%), Other organic gases or vapors except halogenated hydrocarbons
1,4-Dioxane	139SB◊	0.05~2.5%	2	orange	brownish green	3	10	Acetylene (3%), Propane (0.2%), Other organic gases or vapors except halogenated hydrocarbons (50)
	119U◊	20~500	1	yellow	pale blue	2	10	Alcohols, Toluene (500)
Dipropyl amine	105SD◊	1~14	1	pale purple	pale yellow	3	10	
Epichlorohydrine	192S	5~50	3	greenish yellow	pink	1	2X5	Halogenated hydrocarbons
(1,2-Epoxypropane)	see Propylene oxide							
(Ethanethiol)	see Ethyl mercaptan							
(Ethanol)	see Ethyl alcohol							
(2-Ethoxyethanol)	see Ethyl cellosolve							
Ethyl acetate	111SA	0.1~5.0%	1	orange	brownish green	3	10	Acetylene (3%), Propane (0.2%), Other organic gases orvapors except halogenated hydrocarbons (50)
	111U	10~1,000	1	yellow	brown	2	10	Other Esters, Ketones, Alcohols, Aromatic hydrocarbons, Hydrocarbons
Ethyl acrylate	211U◊	5~60	2	yellow	pale blue	2	10	Alcohols, Paraffin hydrocarbons, Esters, Halogenated hydrocarbons, Aromatic hydrocarbons
Ethyl alcohol	104SA	0.05~5.0%	1	yellowish orange	pale green	3	10	Paraffin hydrocarbons, Alcohols, Esters, Ketones, Aromatic hydrocarbons, Halogenated hydrocarbons
Ethyl amine	227S	1~20	1	pale purple	pale yellow	3	10	
Ethyl benzene	179S	10~500	1	white	brown	1.5	10	Toluene (25), Xylene (50), Benzene (10), Methanol (1%), Hexane (0.1%)
Ethyl cellosolve	190U	5~500	3	yellow	pale blue	2	10	Alcohols, Esters, Paraffin hydrocarbons, Aromatic hydrocarbons, Ketones, Halogenated hydrocarbons
Ethyl cellosolve acetate	190U◊	5~150	3	yellow	pale blue	2	10	Alcohols, Esters, Paraffin hydrocarbons, Aromatic hydrocarbons, Ketones, Halogenated hydrocarbons
(Ethyl ether)	see Diethyl ether							
Ethylene	108SA	20~1,200	1	yellow	blue	2	10	CO, H_2S, Acetylene, Propylene
	108SC•	1 - 200 ppm	4	Yellow	Blue	2	2x5	Acetylene, Carbon monoxide, Propylene, Hydrogen sulphide
Ethylene - color intensity	108B	0.5~100 0.1~20	1 5	pale yellow	blue	3	10	CO, NO_2 (1), Cl_2, Butane, Pentane, Acetylene, H_2S (1,000), HCN, CS_2, NH_3, H_2 (10%)
Ethylene dibromide	166S	1~50	1	white	yellow	1	2X5	Halogens or Halogenated hydrocarbons, Hexane (200)
(Ethylene dichloride)	see 1,2-Dichloroethane							
Ethylene glycol	232SA	20~250 mg/m³	2	pink	yellow	1.5	2X5	Ethylene oxide, SO_2, Aldehydes, H_2S
	232SB	3~40 mg/m³	3	pale pink	yellow	2	2X5	Aldehydes, SO_2, H_2S

∞ SEI certified
** Interference by coexistence of indicated substance at more than the parenthesized rate*
◊ With conversion chart
• New tubes

List of MATHESON-Kitagawa Toxic Gas Detector Tubes

Substance to be measured	Tube No. 8014-	Measuring Range (ppm)	No. of Pump Strokes	Color Change		Shelf Life (year)	Q'ty of tubes/ box	Interferences (ppm)
				Original	Stain			
(Ethylene glycol ethyl ether acetate)	see Ethyl cellosolve acetate							
(Ethylene glycol monobuthyl ether/2-Butoxyethanol)	see Butyl cellosolve							
(Ethylene glycol monoethyl ether)	see Ethyl cellosolve							
(Ethylene glycol monomethyl ether)	see Methyl cellosolve							
Ethylene oxide	122SA	0.01~1.8% 1.0~4.0%	1 1/2	orange	dark brown	3	10	Alcohols, Ketones, Aromatic hydrocarbons, Esters, Halogenated hydrocarbons (0.5%) Ether (10 Ethylene oxide*), Acetone or Isopropyl alcohol (200)
	122SM	5~100	3	pink	yellow	3	10	
	122SC	1~15	3	pale pink	yellow	2	2X5	
	122SD	0.7~14.0 0.1~2.0	1 4	yellow	pale pink	1 1	2X5 2X5	
	122SL	130~2,600 50~1,000	1/2 1	yellow	pale blue	3	10	
(Ethylidene chloride)	see 1,1-Dichloroethane							
Ethyl mercaptan	165SA	4~160 2~80 1~40	1 2 4	white	yellow	2	10	Methyl sulfide (1), NO_2 (1), Cl_2 (0.2)
	130U	0.5~5 1~10	1 1/2	pale yellow	pink	2	10	Arsine, Hydrogen selenide, H_2S, HCN
Ethyl mercaptan (in LPG)	165SB	2.5~40 5~80	1 1/2	yellow	pink	2	10	
	130U	0.5~5 1~10	1 1/2	pale yellow	pink	2	10	
Ethyl methacrylate	111U◊	20~500	1	yellow	brown	2	10	
Formaldehyde	713•	0.01 - 0.50 ppm	3.5L	Yellowish Orange	Pink	1	10	Ammonia, Amines and Nitrogen dioxide more than 1.0ppm
	171SA	20~1,500	1	yellow	pink	2	2X5	Other Aldehydes
	171SB	1~35	3	white	brownish orange	3	2X5	Other Aldehydes (1), Styrene, Ether (1,000), Ethyl acetate (1,000), Trichloroethylene (500)
	171SC	0.1~4.0 0.05~2.0	5 10	yellow	pink	1	10	Acetaldehyde, NH_3, (10), NO_2 (3) 3
Formic acid	216S	1~50	1	pale pink	yellow	3	10	SO_2 (1/20 HCOOH), NO_2 (10), HCl (2 HCOOH), Cl_2 (5), Acetic acid
(2-Furaldehyde)	see Furfural							
Furan	122SA◊	0.01~0.9% 0.2~2.0%	1 1/2	orange	dark brown	3	10	Aromatic hydrocarbons, Esters, Ketones, Alcohols, Halogenated hydrocarbons
Furfural	190U◊	2~60	3	yellow	pale blue	2	10	Alcohols, Esters, Paraffin hydrocarbons, Aromatic hydrocarbons, Ketones, Halogenated hydrocarbons
(Furfuran)	see Furan							
Furfuryl alcohol	238S	2~25	5	white	black	1	10	
Gasoline	110S	0.05~0.6%	1	orange	dark green	3	10	Paraffin hydrocarbons, Acetylene, Ethylene, Cyclohexane, Benzene (400), Toluene (800), Xylene (2,000)
General hydrocarbons iso-C_4H_{10}, n-C_5H_{12}, n-C_8H_{18}, n-C_6H_{14}, mineral turpentine	187S	50~1,400	1	orange	yellowish green	2	10	Aromatic hydrocarbons
Heptane	113SB◊	100~2,000	1	orange	yellowish green	2	10	Paraffin hydrocarbons, Aromatic hydrocarbons, Alcohols (6%), Ketones (6%), Esters (6%)

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List of MATHESON-Kitagawa Toxic Gas Detector Tubes

Substance to be measured	Tube No. 8014-	Measuring Range (ppm)	No. of Pump Strokes	Color Change		Shelf Life (year)	Q'ty of tubes/ box	Interferences (ppm)
				Original	Stain			
n-Hexane	113SA	0.05~0.6% 0.11~1.32%	1 1/2	orange	dark green	3	10	Paraffin hydrocarbons, Acetylene, Ethylene, Cyclohexane, Benzene (400), Toluene (800), Xylene (2,000)
	113SB	50~1,400	1	orange	yellowish green	2	10	Paraffin hydrocarbon, Aromatic hydrocarbons
	113SC	20~800 5~200	1 3	yellow	pale blue	2	10	Toluene
Hydrazine	219S	0.2~10 0.1~5 0.05~2.5	2 4 8	yellow	blue	2	10	NH_3, Amines
Hydrogen	137U	0.05~0.8%	1/2	yellow	green	3	5	Ethanol (0.4%), CO (500)
Hydrogen chloride	173SA	20~600 40~1,200	1 1/2	purple	pink	2	2X5	SO_2, Cl_2
	173SB∞	4~40 2~20 0.4~4	1/2 1 5	yellowish green	pink	3	2X5	Cl_2
Hydrogen cyanide	112SA	0.01~3%	1	yellow	brownish red	3	10	Acetone, CS_2, SO_2 (200), H_2S (100), Dicyanide SO_2 (1), H_2S (3), NH_3 (5)
	112SB∞	2~100 0.5~25	1 4	yellow	red	2	10	
Hydrogen fluoride	156S	0.5~30 0.25~15 0.17~12	3 6 9	greenish yellow	pink	3	10	Cl_2, HCl
Hydrogen peroxide	247S	0.5~10.0	5	white	yellow	3	10	
Hydrogen selenide	167S	5~600 1~120	1 5	pale yellow	dark brown	1	10	Arsine (10), H_2S, Iron carbonyl (10), SO_2, Hg, Acetylene (3%), CO (0.1%), Nickel carbonyl (10)
Hydrogen sulphide	120SB	6~300 3~150 1~50 0.75~37.5	1/2 1 3 4	white	dark brown	3	10	SO_2 (12), Mercaptans (550), NO_2 (2)
	120SC	0.005~0.16%	1	pale yellow	dark blue	3	10	CO (10), Ethylene, Propylene, Butylene, Acetylene or Methyl mercaptan (5), HCN, NH_3
	120SD∞	1~30 2~60	1 1/2	white	pale brown	3	10	SO_2 (10), Mercaptans (300), NO_2 (2)
	120SE	2~40 1~20 0.5~10	1/2 1 2	yellow	pink	2	10	PH_3, Mercaptans, NH_3, NO_2
	120SF	50~1,000 100~2,000 25~500	1 1/2 2	white	black	3	10	SO_2, (5,000), Mercaptans
	120SH	0.1~4.0%	1	pale blue	black	3	10	SO_2 (0.5%)
	120SM	0.05~0.6% 0.1~1.2%	1 1/2	white	dark brown	2	10	SO_2 (0.3%)
	120U	0.2~3.0 0.4~6.0	1 1/2	pale yellow	pink	2	10	Arsine, Hydrogen selenide, Mercaptans, Phosphine, HCN, SO_2
Hydrogen sulphide -ultra high range	120UH	2~20%	1/2	pale blue	black	3	10	SO_2
	120UT	5~40% 2.5~5%	1/2 1	pale blue	black	3	5	SO_2 (8%)
Hydrogen sulphide - Mercaptans separately measureable	282S	H2S 1~30	1	white	pale brown	2	2X5	H_2S: SO_2 (1/3 X H2S)
		RSH 0.5~5	1	pale yellow	pink			NO_2 (1/5 X H2S) RSH: NO_2 (2), NH_3, H_2S (30)
(4-Hydroxy-4-methyl-2-pentanone)	see Diacetone alcohol							
(Iodomethane)	see Methyl iodide							
(Isoamyl alcohol)	see Isopentyl alcohol							
Isobutane	113SB◊	50~1,200	1	orange	yellowish green	2	10	Alcohols, Ketones or Esters (6%), Aromatic hydrocarbons, Paraffin hydrocarbons

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• New tubes

List of MATHESON-Kitagawa Toxic Gas Detector Tubes

Substance to be measured	Tube No. 8014-	Measuring Range (ppm)	No. of Pump Strokes	Color Change		Shelf Life (year)	Q'ty of tubes/ box	Interferences (ppm)
				Original	Stain			
(Isobutanol)	see Isobutyl alcohol							
Isobutyl acetate	139SB◊	0.01~1.4%	2	orange	brownish green	3	10	Acetylene (3%), Propane (0.2%), Other organic gases or vapors except halogenated hydrocarbons (50)
	153U	10~400	1	pale yellow	pale blue	1	10	Alcohols, Esters, Ketones, Aromatic hydrocarbons
Isobutyl acrylate	211U◊	5~60	2	yellow	pale blue	2	10	Alcohols, Paraffin hydrocarbons, Esters, Halogenated hydrocarbons, Aromatic hydrocarbons
Isobutyl alcohol	208U	5~100	3	yellow	pale blue	2	10	Alcohols, Toluene
Isobutylene	113SB◊	0.03~2.0%	1	orange	yellowish green	2	10	
Isobutyric acid	216S◊	3~50	1	pale pink	yellow	3	10	
(Isopentyl acetate)	see Isoamyl acetate							
Isopentyl acetate	188U	10~400	1	pale yellow	pale blue	1	10	Alcohols, Esters, Ketones,
Isopentyl alcohol	209U	5~100	3	yellow	pale blue	2	10	Alcohols, Toluene
Isoprene	190U◊	1~16	3	yellow	pale blue	2	10	Alcohols, Esters, Paraffin hydrocarbons (over C_3), Aromatic hydrocarbons, Ketones, Halogenated hydrocarbons
Isopropyl acetate	139SB◊	0.01~1.2%	2	orange	brownish green	3	10	Acetylene (3%), Propane (0.2%), Other organic gases or vapors except halogenated hydrocarbons (50)
	111U	10~1,000	1	yellow	brown	2	10	Other Esters, Ketones, Alcohols, Aromatic hydrocarbons, Paraffin hydrocarbons
(Isopropyl acetone)	see Methyl isobutyl ketone							
Isopropyl alcohol	122SA◊	0.05~2.5%	1	orange	dark brown	3	10	Other Alcohols, Ketones, Esters, Aromatic hydrocarbons, Halogenated hydrocarbons (0.5%)
	150U	50~1,200	1	yellow	pale blue	2	10	Other Alcohols, Esters, Paraffin hydrocarbons, Aromatic hydrocarbons, Ketones, Halogenated hydrocarbons
Isopropyl ether	111U◊	30~800	1	yellow	brown	2	10	
Isopropyl mercaptan	130U	1~10 0.5~5	1/2 1	pale yellow	pink	2	10	Arsine, Hydrogen selenide, H_2S, HCN
Isovaleric acid	216S◊	3~50	1	pale pink	yellow	3	10	
Maleic anhydride	216S◊	0.2~10	4	pale pink	yellow	3	10	
(Menthanol)	see Methyl alcohol							
Mercury vapour	142S	0.5~10mg/m³ 0.1~2.0mg/m³	1 5	grey	pale orange	3	10	HCl (0.5), NO_2 (0.1), Cl_2 (0.1), H_2S (0.5)
Mesityl oxide	190U◊	5~100	2	yellow	pale blue	2	10	Alcohols, Esters, Paraffin hydrocarbons, Aromatic hydrocarbons, Ketones, Halogenated hydrocarbons
Methacrylic acid	216S◊	1~50	1	pale pink	yellow	3	10	
(Methanethiol)	see Methyl mercaptan							
Methanol in LP Gas	119LPG•	100-1000 ppmv	_	Yellow	Blue or Yellowish Green	3	10	Hydrogen sulphide 0.4, Sulphur dioxide 0.5, Toluene 10
(2-Methoxyethanol)	see Methyl cellosolve							
Methyl acetate	111SA◊	0.01~3.0%	1	orange	dark green	3	10	Acetylene (3%), Propane (0.2%), Other organic gases or vapors except halogenated hydrocarbons

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List of MATHESON-Kitagawa Toxic Gas Detector Tubes

Substance to be measured	Tube No. 8014-	Measuring Range (ppm)	No. of Pump Strokes	Color Change		Shelf Life (year)	Q'ty of tubes/ box	Interferences (ppm)
				Original	Stain			
Methyl acrylate	211U	2~60	2	yellow	pale blue	2	10	Alcohols, Esters, Paraffin hydrocarbons (over C_3), Aromatic hydrocarbons, Halogenated hydrocarbons
Methyl alcohol	119SA	0.05~6.0%	1	yellowish orange	pale green	3	10	Paraffin hydrocarbons (over C_3), Alcohols, Esters, Aromatic hydrocarbons, Halogenated hydrocarbons
	119U	20~1,000	1	yellow	pale blue	2	10	Alcohols, Esters, Aromatic hydrocarbons, Paraffin hydrocarbons, Halogenated hydrocarbons
Methyl amine	227S	1~20	1	pale purple	pale yellow	3	10	NH_3, Other amines
(Methyl benzene)	see Toluene							
N-Methyl aniline	105SD◊	0.5~6	2	pale purple	pale yellow	3	10	
Methyl bromide	157SA	10~500	1	white	reddish orange	3	2X5	Ethylene dibromide, Trichloroethylene, Tetrachloroethylene or Chloroform (50), Cl_2, Br_2 or NO_2 (1), Dichloromethane (500)
	157SB∞	2~80 1~25 0.4~10	1 2 4	white	yellow	3	2X5	Halogens, Halogenated hydrocarbons, Hexane (200)
	157SC	1~10 0.5~1	1 2	white	purple	1	2X5	Halogens, Halogenated
	157JS	3~70 g/m3	1/2	yellow	brown	2	2X10	
Methyl cellosolve	190U	5~500	3	yellow	pale blue	2	10	Paraffin hydrocarbons (over C_3), Alcohols, Ketones, Aromatic hydrocarbons, Halogenated hydrocarbons, Esters
Methyl chloroform	160S	30~400 15~200	1 2	white	reddish orange	3	2X5	Halogens, Halogenated hydrocarbons
Methyl cyclohexane	113SB◊	100~1,600	1	orange	yellowish green	2	10	
Methyl cyclohexanone	198U	2~100	3	yellow	pale blue	2	10	Alcohols
Methyl cyclohexanol	199U	5~200	3	yellow	pale blue	2	10	Alcohols
Methyl ethyl ketone	122SA◊	0.05~2.5% 1.0~5.0%	1 1/2	orange	dark brown	3	10	Alcohols, Esters, Ketones, Aromatic hydrocarbons, Halogenated hydrocarbons (0.5%)
	139SB	0.01~1.4%	2	orange	brownish green	3	10	Other organic gases or vapors except halogenated hydrocarbons (50), Acetylene (3%), Propane (0.2%)
	139U	20~1,500	1	yellow	pale blue	2	10	Other Esters, Ketones, Alcohols, Aromatic hydrocarbons, Halogenated hydrocarbons, Paraffin hydrocarbons
Methyl iodide	176S	4~40 2~20	2 4	yellow	dark brown	1 1/2	2X5	H_2S (7), n-Hexane (500), Acetone (700), Benzene (2), Toluene (2), Xylene (2), Halogenated hydrocarbons
Methyl isobutyl ketone	122SA◊	0.01~0.6%	3	orange	dark brown	3	10	Alcohols, Other Ketones, Aromatic hydrocarbons, Esters, Halogenated hydrocarbons
Methyl mercaptan	164SA	5~140	1	white	reddish yellow	2	10	Cl_2 (0.2), Methyl sulfide (1), Ethyl mercaptan, Acetylene, CO, H_2S
	164SH	50~1,000	1	pale yellow	orange	3	10	H_2S (650), NO_2 (1,000), Cl_2 (1/3 CH_3SH*)
	130U	0.5~5 1~10	1 1/2	pale yellow	pink	2	10	Arsine, Hydrogen selenide, H_2S, HCN
Methyl methacrylate	184S	10~160	1	yellow	pale blue	2	10	Esters, Ketones, Alcohols, Aromatic hydrocarbons
(4-Methyl-3-penten-2-one)	see Mesityl oxide							
Methyl propyl ketone	139U	20~1,500	1	yellow	pale blue	2	10	
Methyl styrene	193S	10~500	1	white	yellow	3	10	Styrene
(Methylene chloride)	see Dichloromethane							

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List of MATHESON-Kitagawa Toxic Gas Detector Tubes

Substance to be measured	Tube No. 8014-	Measuring Range (ppm)	No. of Pump Strokes	Color Change		Shelf Life (year)	Q'ty of tubes/ box	Interferences (ppm)
				Original	Stain			
(Monoethylene glycol)	see Ethylene glycol							
Monoethanol amine	224SA	1~50 0.5~25	1 2	pink	pale purple	2	10	Other amines, NH3, Hydrazine
Morpholine	105SD◊	2~22	1	pale purple	pale yellow	3	10	
Naphthalene	153U◊	10~100	1	pale yellow	pale blue	1	10	Alcohols, Esters, Ketones Aromatic hydrocarbons
Nickel carbonyl	129	20~700	1	pale yellow	dark purple	1/2	10	Arsine, Iron carbonyl, Mercury vapor, H_2S or SO_2 (10), CO (1,000)
(Nickel tetracarbonyl)	see Nickel carbonyl							
Nitric acid vapor	233S	2~20 1~10	1 2	pale yellow	purple	1	10	HF (8) or NO_2 (50), HCl
(Nitrotrichloromethane)	see Chloropicrin							
Nitrogen dioxide	117SA	20~1,000	1	white	yellowish orange	3	10	Cl_2, Br_2, I_2 or Ozone (5), NO (10)
	117SB∞	0.5~30.0	2	white	yellowish orange	1	10	Cl_2, Br_2 or I_2 (2), NO (15)
	117SD	0.1~1.0	3	white	pale purple	1.5	10	O_3 (2), SO_2 (7), Cl_2 (3)
Nitrogen oxide and dioxide - separately measurable	174A	NO; 10~300	1	white	yellowish orange	2	5	Cl_2 (1)
	174B	NO_2; 1~40	1	white	pale yellowish orange	2	2X5	Cl_2 (1)
Nitrogen oxides	175SA	20~250	1	white	yellow	1	10	SO_2 (100), HCl (1,000)
	175SH	100~2,500	1	white	yellow	2	10	HCl (500)
	175U∞	0.5~15 1~30	1 1/2	white	pale purple	3	10	H_2S (5), HCl (500)
n-Nonane	111U◊	10~160 5~80	1/2 1	yellow	brown	2	10	
Organic gas checker	186		1	orange	black or dark green	3	10	H_2S (10)
Oxygen	159SA	2~24%	1/2	white	brown	2	5	CO_2 (5%), H_2S (2%), NO_2
	159SB	2~24%	1/2	white	brown	2	5	(2%), SO_2 (2%)
Oxygen - Non-heating Type	159SC	1.5~3% 3~24%	1 1/2	black	white	2	2X5	
Oxygen - Carbon dioxide - separately measureable	281S	O_2; 2~10% CO_2; 1~20%	1	white pink	brown yellow	1.5	2X5	
Ozone	182SA	50~500 100~1,000	1 1/2	dark blue	yellow	2	10	Cl_2, NO_2
	182SB	10~100 50~50 2.5~25	1/2 1 2	blue	pale yellow	2	10	NO_2 (10)
	182U∞	0.15~3.0 0.05~1.0 0.025~0.5	1 3 6	blue	white	2	10	NO_2 (0.5), Cl_2 (10), Oxidant
Pentane	113SB◊	50~1,000	1	orange	yellowish green	2	10	Paraffin hydrocarbons, Aromatic hydrocarbons (over C_3), Alcohols (6%), Ketones (6%), Esters (6%)
Pentyl acetate	210U	10~200	3	pale yellow	pale blue (over 20ppm) dark brown (under 20ppm)	2	10	Alcohols, Esters, Ketones, Paraffin hydrocarbons, Aromatic hydrocarbons
Pentyl amine	105SD◊	2~22	1	pale purple	pale yellow	3	10	
(Petrol)	see Gasoline							
(Perchloroethylene)	see Tetrachloroethylene							

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List of MATHESON-Kitagawa Toxic Gas Detector Tubes

Substance to be measured	Tube No. 8014-	Measuring Range (ppm)	No. of Pump Strokes	Color Change		Shelf Life (year)	Q'ty of tubes/ box	Interferences (ppm)
				Original	Stain			
Phenol	183U	0.5~25.0	2	pale yellow	pale light brown (pale brown)	2	10	NH_3 (200), Aliphatic amines (50), Phenols (2.5), Aromatic amines (50)
Phosgene	146S	0.5~20 0.1~4.0	1 5	white	red	1	10	Cl_2 (5), HCl (10), NO_2 (100), SO_2 (0.2%)
Phosphine in acetylene	121SA**	20~800	1	pale blue	reddish purple	3	10	Arsine or H_2S (10)
	121SB**	5~90	1	pale blue	yellowish brown	3	10	Arsine or H_2S (10)
Phosphine	121SC	20~700 40~1,400	1 1/2	white	yellow	3	10	Arsine (30), Hydrogen selenide (50), H_2S (40)
	121SD	1~20.0 0.5~10.0 0.25~5.0	1/2 1 2	pale orange	brownish purple	1	10	NH_3 (60), Arsine, Hydrogen selenide, Nickel carbonyl
	121U∞	0.1~2.0 0.05~1.0	1 2	pale yellow	pink	2	10	Hydrogen selenide, Mercaptans, H_2S, HCN, SO_2, Arsine
	121SS	400~6,000 200~3,000	1/2 1	white	orange	3	10	
Propane	125SA	0.02~0.5%	1	orange	brown	2	10	Toluene, Hexane, Trichloroethylene
(2-Propanol)	see Isopropyl alcohol							
Propionic acid	216S◊	3~50	1	pale pink	yellow	3	10	
Propyl acetate	139SB◊	0.01~1.4%	2	orange	brownish green	3	10	Other organic gases or vapors except halogenated hydrocarbons, Acetylene (3%), Propane (0.2%)
	151U	20~1,000	1	pale yellow	dark brown	2	10	Alcohols, Esters, Ketones, Paraffin hydrocarbons, Aromatic hydrocarbons
Propyl amine	105SD◊	1~20	1	pale purple	pale yellow	3	10	
Propylene	185S	50~1,000	1	yellow	dark blue	2	10	CO (200), Acetylene (50), Ethylene, H_2S (50)
Propylene oxide	163SA	0.05~3.0% 1.0~5.0%	1 1/2	orange	dark brown	3	10	Aromatic hydrocarbons, Esters, Ketones, Alcohols, Halogenated hydrocarbons
n-Propyl mercaptan	130U	0.5~5 1~10	1 1/2	pale yellow	pink	2	10	Arsine, Hydrogen selenide, H_2S, HCN
Pyridine	105SD◊	0.5~10	1	pale purple	pale yellow	3	10	
Silane	240S	1~50 0.5~25	1 2	yellow	red	1	10	PH_3 (20), Arsine (50), Disilane (2), Diborane (20)
Styrene	158S	5~300 2.5~150	1 2	white	yellow	3	10	Methanol (0.35%), Ethanol (0.18%), Ethyl acetate (700), Butyl acetate (700), Butadiene (5), Formaldehyde (15), Acetaldehyde (350), Acrylonitrile (400)
	158SB	2~100 1~50	2 4	white	yellow	3	2X5	
Sulphur dioxide	103SA	0.1~3.0%	1	yellow	blue	3	10	H_2S (400)
	103SB	0.02~0.3%	1	white	orange	3	10	H_2S (100)
	103SC	20~300	1	purple	yellow	2	10	Cl_2 (1/5 SO_2*), NO_2 (100),
	103SD	1~60	1	pink	yellow	3	10	NO_2 (1 SO_2*), Cl_2 (2 SO_2*)
	103SE∞	0.5~10 0.25~5	1 2	pink	yellow	1	10	NO_2, HCl
Sulphur dioxide-in flue gas	103SF	0.02~0.3%	1	white	orange	3	2X5	H_2S (100)
Sulphur dioxide-in carbon-dioxide	103SG	0.5~25 0.1~3	1 4	blue purple	white	3	10	
Sulphuric acid	244U	0.5~5 mg/m³	5	yellow	pink	2	10	HCl, HF, NO_2, Nitric acid, $C1_2$

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• New tubes

List of MATHESON-Kitagawa Toxic Gas Detector Tubes

Substance to be measured	Tube No. 8014-	Measuring Range (ppm)	No. of Pump Strokes	Color Change		Shelf Life (year)	Q'ty of tubes/ box	Interferences (ppm)
				Original	Stain			
Tetrachloroethylene	135SA	5~150 10~300	1 1/2	white	red	2	10	Vinyl chloride, HCl, 1,2-Dichloroethylene, Trichloroethylene, Cl_2
	135SB	1~10 0.2~2.0	1 4	pale orange	bluish purple	1	10	Trichloroethylene, 1,2-Dichloroethylene
	135SG	0.2~2.0% 0.1~0.2%	1 2	white	dark brown	2	2X5	Trichloroethylene, 1,1,1-Trichloroethane, 1,2-Dichloroethylene, Vinyl chloride, CO, Aromatic hydrocarbons
	135SM•	50 - 500 125-1,250 ppm	1	Yellow	Red	1	10	1,2 Dichloroethylene
(Tetrachloromethane)	see Carbon tetrachloride							
Tetraethoxysilane	243U	12.5~200 5~80	1 2	yellow	pale blue	3	10	Silane, Phosphine (5), Isopropyl alcohol (7), Trichloroethylene, Tetrachloroethylene, Ethanol (10)
Tetrahydrofuran	102SA◊	0.02~3.0% 2.0~5.0%	1 1/2	orange	dark brown	3	10	Alcohols, Esters, Ketones, Aromatic hydrocarbons
	162U	20~400	1	pale yellow	pale blue	2	10	Alcohols, Esters, Ketones, Aromatic hydrocarbons, Halogenated hydrocarbons
Toluene	124SA∞	10~500	1	white	brown	3	10	Benzene (10), Xylene (50), Methanol (1%), Hexane (0.1%), Ethyl benzene (10)
	124SB	2~100	1	white	brown	3	10	Aromatic hydrocarbons, Hexane (high concentration)
	124SH	100~3,000	1	white	dark brown	2	10	Benzene, Xylene, Ethyl benzene, Hexane, Methanol
o-Toluidine	105SD◊	2~22	1	pale purple	pale yellow	3	10	
p-Toluidine	105SD◊	2~20	1	pale purple	pale yellow	3	10	
(1,1,1-Trichloroethane)	see Methyl chloroform							
1,1,2-Trichloroethane	236SA	10~100	1	white	purple	1	3X5	Nitrogen oxides, Halogens, Halogenated hydrocarbons, Hexane (100)
Trichloroethylene	134SA∞	5~150 10~300	1 1/2	white	red	2	10	Vinyl chloride, HCl, 1,2-Dichloroethylene, Tetrachloroethylene, Cl_2
	134SB∞	2.3~36.8 1~16 0.2~3.2	1/2 1 4	pale orange	bluish purple	1	10	Tetrachloroethylene, 1,2-Dichloroethylene or HCl (2), Vinyl chloride (20)
	134SG	0.05~2.0%	1	white	yellow	2	10	Tetrachloroethylene, 1,1,1-Trichloroethane, 1,2-Dichloroethylene Vinyl chloride, CO, Aromatic hydrocarbons
(Trichloromethane)	see Chloroform							
Triethyl amine	213S	1~10 2~20	1 1/2	pale purple	pale yellow	3	10	NH_3, Other amines
Trimethyl amine	222S	1~20	1	pale purple	pale yellow	3	10	NH_3, Other amines
	105SE	5~100 2.5~50 0.5~10	1/2 1 5	pale purple	pale yellow	3	10	
1,2,4-Trimethyl benzene	111U◊	20~250	1	yellow	brown	2	10	Alcohols, Esters, Ketones, Aromatic hydrocarbons
2,2, 4-Trimethyl pentane	113SB◊	100~1,400 200~4,000	1 1/2	orange	yellowish green	2	10	
n-Undecane	111U◊	10~140	1	yellow	brown	2	10	
n-Valeric acid	216S◊	3~70	1	pale pink	yellow	3	10	
Vinyl acetate	237S	10~120 5~60	1 2	yellow	pale blue	2	10	Ethylene (150), Alcohols, Ethers, Esters
(Vinyl benzene)	see Styrene							

∞ SEI certified
** Interference by coexistence of indicated substance at more than the parenthesized rate*
◊ With conversion chart
• New tubes

List of MATHESON-Kitagawa Toxic Gas Detector Tubes

Substance to be measured	Tube No. 8014-	Measuring Range (ppm)	No. of Pump Strokes	Color Change		Shelf Life (year)	Q'ty of tubes/ box	Interferences (ppm)
				Original	Stain			
Vinyl chloride	132SA	0.05~1.0%	1	brownish orange	brownish green	3	10	Acetylene (3%), Propane (0.2%), Other organic gases or vapors except halogenated hydrocarbons (50)
	132SB	5~500	1	white	reddish orange	1.5	2X5	Cl_2, HCl, Other halogens, Halogenated hydrocarbons
	132SC∞	0.4~12.0 0.2~6.0 0.1~3.0	1 2 4	greenish yellow	pink	3	2X5	HCl (2,000), Acetylene (1%), Ethylene (300), Cl_2 (10 Vinyl chloride*)
(Vinyl cyanide)	see Acrylonitrile							
Water vapour	177SA	1.7~33.8 mg/l	1	yellowish green	purple	3	10	Methanol (0.3%), Ethanol (0.3%), Ethyl acetate (0.3%), Acetone (0.5%), NH_3 (0.2%), NO_2 (0.2%)
	177U	0.05~2.0 mg/l	1	greenish yellow	blue (over 0.6 mg/l) yellowish green (less than 0.6 mg/l)	3	10	Alcohols
	177UL	3~80 LB/ MMCF	1	Yellow	Blue (over 40LB/MMCF) Yellowish green (below 40LB/MMCF)	3	10	Alcohols
Water vapour - ultra low range	177UR	2~12 LB/MMCF	2	yellow	yellowish green	3	10	Alcohols
Xylene	143SA∞	5~1,000	2	white	brown	1.5	10	Benzene or Toluene (5), Methanol (1%), Hexane (0.1%)
	143SB	5~200	2	White	brown	2	10	Benzene or Toluene (5),

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** Interference by coexistence of indicated substance at more than the parenthesized rate*
◊ With conversion chart
• New tubes

Numerical Index of Kitagawa Detector Tubes

Tube No.	Detector Tube
100	Carbon monoxide-length of strain
101S	Acetylene
102SA	Acetone
◊102SA	Tetrahydrofuran
102SC	Acetone
102SD	Acetone
103SA	Sulphur dioxide
103SB	Sulphur dioxide
103SC	Sulphur dioxide
103SD	Sulphur dioxide
103SE	Sulphur dioxide
103SF	Sulphur dioxide-in flue gas
103SG	Sulphur dioxide
104SA	Ethyl alcohol
105SA	Ammonia
105SB	Ammonia
105SC	Ammonia
105SD	Ammonia
◊105SD	Butyl amine
105SD	Cyclohexyl amine
◊105SD	Dibutyl amine
◊105SD	Diisopropyl amine
◊105SD	N,N-Dimethylaniline
◊105SD	Dipropyl amine
◊105SD	n-Methyl aniline
◊105SD	Morpholine
◊105SD	Pentyl amine
◊105SD	Propyl amine
◊105SD	Pyridine
◊105SD	o-Toluidine
◊105SD	p-Toluidine
•105SE	Ammonia
•105SE	Trimethyl amine
105SH	Ammonia
105SM	Ammonia
106B	Carbon monoxide - in presence of ethylene, colour intensity
106C	Carbon monoxide - in presence of ethylene and/or nitrogen oxides, colour intensity
106S	Carbon monoxide
106SA	Carbon monoxide
106SC	Carbon monoxide
106SH	Carbon monoxide
106UH	Carbon monoxide-ultra high range
106SS	Carbon monoxide
107SA	Diethyl ether
107U	Diethyl ether
108B	Ethylene - colour intensity
108SA	Ethylene-high range
•108SC	Ethylene
109SA	Chlorine
109SB	Chlorine
109U	Chlorine
110S	Gasoline
111SA	Ethyl acetate
◊111SA	Methyl acetate
111U	Ethyl acetate
111U	Isopropyl acetate
◊111U	tert-Butanol
◊111U	Butyl ether
◊111U	Butyl methacrylate
◊111U	tert-Butyl methyl ether
◊111U	Cumene
◊111U	Cyclohexene
◊111U	Decahydronaphthalene
◊111U	n-Decane
◊111U	Diethyl benzene
◊111U	Ethyl methacrylate
◊111U	Isopropyl ether
◊111U	n-Honane
◊111U	1,2,4-Trimethyl benzene
◊111U	n-Undecane
112SA	Hydrogen cyanide
112SB	Hydrogen cyanide
112SC	Hydrogen cyanide
113SA	n-Hexane
113SB	n-Hexane
◊113SB	Isobutylene
◊113SB	Methyl cyclohexane
◊113SB	2,2,4-Trimethyl pentane
◊113SB	Heptane
◊113SB	Isobutane
◊113SB	Pentane
113SC	n-Hexane
114	Bromine
115S	Cyclohexane
116	Chlorine dioxide
117SA	Nitrogen dioxide
117SB	Nitrogen dioxide
117SD	Nirtogen dioxide
118SB	Benzene - in presence of gasoline and other aromatic hydrocarbons
118SC	Benzene
118SD	Benzene
118SE	Benzene-in presence of gasoline and the other aromatic hydrocarbons
•119LPG	Methanol in LP Gas
119SA	Methyl alcohol
◊119U	1,4-Dioxane
119U	Methyl alcohol
•120GR	Hydrogen sulphide
•120GT	Hydrogen sulphide
120SB	Hydrogen sulphide
120SC	Hydrogen sulphide-in presence of sulphur dioxide
120SD	Hydrogen sulphide
120SE	Hydrogen sulphide
120SF	Hydrogen sulphide
120SH	Hydrogen sulphide
120SM	Hydrogen sulphide
120U	Hydrogen sulphide
120UH	Hydrogen sulphide-ultra high range
120UT	Hydrogen sulphide-ultra high range
121SA	Phosphine in acetylene
121SB	Phosphine in acetylene
121SC	Phosphine
121SD	Phosphine
121SH	Phosphine-high range
•121SS	Phosphine
121U	Arsine
121U	Phosphine
122SA	Ethylene oxide
◊122SA	Furan
◊122SA	Isopropyl alcohol
◊122SA	Methyl ethyl ketone
◊122SA	Methyl isobutyl ketone
122SC	Ethylene oxide
122SD	Ethylene oxide-low range
•122SL	Ethylene oxide
122SM	Ethylene oxide
123S	Dimethyl ether
124SA	Toluene
124SB	Toluene
124SH	Toluene
125SA	Propane
126B	Carbon dioxide
126SA	Carbon dioxide
126SB	Carbon dioxide
126SF	Carbon dioxide
126SG	Carbon dioxide
126SH	Carbon dioxide-extra high range
126UH	Carbon dioxide-ultra high range
128SA	Acrylonitrile
128SB	Acrylonitrile
128SC	Acrylonitrile
128SD	Acrylonitrile
129	Nickel carbonyl
130U	tert-Butyl mercaptan
130U	Ethyl mercaptan
130U	Isopropyl mercaptan
130U	Methyl mercaptan
130U	n-Propyl mercaptan
131	Inorganic gas qualitative detector tube
132SA	Vinyl chloride
132SB	Vinyl chloride
132SC	Vinyl chloride
133A	Acetaldehyde
133SB	Acetaldehyde
134SA	Trichloroethylene
134SB	Trichloroethylene
134SG	Triochloroethylene
135SA	Tetrachloroethylene
135SB	Tetrachloroethylene
135SG	Tetrachloroethylene
•135SM	Tetrachloroethylene
136	Acrolein
137U	Hydrogen
138U	Butyl acetate
◊139SB	Butyl acetate
◊139SB	1,4-Dioxane
◊139SB	Isobutyl acetate
◊139SB	Isopropyl acetate
139SB	Methyl ethyl ketone
◊139SB	Propyl acetate
139U	Methyl ethyl ketone
139U	Methyl propyl ketone
◊139U	Diisobutyl ketone
140SA	Arsine
141SA	Carbon disulphide
141SB	Carbon disulphide
142S	Mercury vapor
143SA	Xylene
143SB	Xylene
145SA	1,2-Dichloroethylene
146S	Phosgene
147S	Carbon tetrachloride
150U	Isopropyl alcohol
151U	Propyl acetate
152S	Chloroform
153U	Isobutyl acetate
◊153U	Naphthalene
155U	Methyl isobutyl ketone
156S	Hydrogen fluoride
157JS	Methyl bromide
157SA	Methyl bromide
157SB	Methyl bromide
158S	Styrene
158SB	Styrene
159SA	Oxygen
159SB	Oxygen
159SC	Oxygen - Non-heating type
160S	Methyl chloroform
162U	Tetrahydrofuran
163SA	Propylene oxide
164SA	Methyl mercaptan
164SH	Methyl mercaptan
165SA	Ethyl mercaptan
165SB	Ethyl mercaptan
166S	Ethylene dibromide
167S	Hydrogen selenide
168SA	1,3-Butadiene
168SB	1,3-Butadiene
168SC	1,3-Butadiene
168SD	1,3-Butadiene
168SE	1, 3-Butadiene
169S	Chloroprene
171SA	Formaldehyde
171SB	Formaldehyde
171SC	Formaldehyde
172S	Chloropicrin
173SA	Hydrogen chloride
173SB	Hydrogen chloride
174A	Nitro-oxide compound
174B	Nitro-oxide compound-in flue gas
175SA	Nitrogen oxides
175SH	Nitrogen oxides
175U	Nitrogen oxides
176S	Methyl iodide
177SA	Water vapour
177U	Water vapour
177UL	Water vapour
177UR	Water vapour-ultra low range
178SB	Chlorobenzene
179S	Ethyl benzene
180S	Dichloromethane
181S	Aniline
182SA	Ozone
182SB	Ozone
182U	Ozone
183U	Cresol
183U	Phenol
◊184S	Allyl alcohol
184S	Methyl methacrylate
185S	Propylene
186	Organic gas checker
186B	Organic gas qualitative detector tube
187S	General hydrocarbons
188U	Isopentyl acetate
189U	2-Butanol
◊190U	1-Butanol
◊190U	Butyl cellosolve
◊190U	Diacetone alcohol
190U	Ethyl cellosolve
◊190U	Ethyl cellosolve acetate
◊190U	Furfural
◊190U	Isoprene
◊190U	Mesityl oxide
190U	Methyl cellosolve
192S	Epichlorohydrin
193S	Methyl styrene
194S	1,3-Dichloropropane
196S	N,N-Dimethylformamide
197U	Cyclohexanone
198U	Methyl cyclohexanone
199U	Methyl cyclohexanol
206U	Cyclohexanol
208U	Isobutyl alcohol
209U	Isopentyl alcohol
210U	Pentyl acetate
211U	Butyl acrylate
◊211U	Ethyl acrylate
◊211U	Isobutyl acrylate
211U	Methyl acrylate
213S	Triethyl amine
214S	o-Dichlorobenzene
215S	p-Dichlorobenzene
216S	Acetic acid
216S	Formic acid
◊216S	Acetic anhydride
◊216S	Acrylic acid
◊216S	Butyric acid
◊216S	Isobutyric acid
◊216S	Isovaleric acid
◊216S	Maleic anhydride
◊216S	Methacrylic acid
◊216S	Propionic acid
◊216S	n-Valeric acid
219S	Hydrazine
221SA	n-Butane
222S	Diethyl amine
222S	Trimethyl amine
223S	2,2-Dichloroethyl ether
224SA	Monoethanol amine
227S	Dimethyl amine
227S	Ethyl amine
227S	Methyl amine
229S	N,N-Dimethylacetamide
230SA	1,2-Dichloroethane
232SA	Ethylene glycol
232SB	Ethylene glycol
233S	Nitric acid vapour
235SA	1,1-Dichloroethane
236SA	1,1,2-Trichloroethane
237S	Vinyl acetate
238S	Furfural alcohol
239S	Carbonyl sulphide
240S	Silane
242S	Diborane
243U	Tetraethoxysilane
244U	Sulphuric acid
247S	Hydrogen peroxide
280S	Acetylene-Ethylene - separation measurement
281S	Oxygen-Carbon dioxide - separation measurement
282S	Hydrogen Sulphide-Mercaptans - separation measurement
•282S	Hydrogen Sulphide-Mercaptans
300	Air flow indicator tube
800B	Charcoal tube
801	Silica-gel tube

◊ *With conversion chart*

• *New tubes*

Specifications are subject to change. Please check **www.mathesongas.com** for most current information.