

## Appendix 3. List of Gastec detector tubes by tube numbers

- (1) Detector tube numbers are listed in alphabetical order.  
 (2) The prime target substance of the detector tube is shown in bold letters.  
 (3) Abbreviations

Dosi: Dosi-tube  
 Inject: Injection-type detector tube  
 Odour: Odorant detector tube  
 Poly: Polytec  
 Auto: Detector Tube for Automatic Gas Sampling Pump  
 Pyro: Pyrotube  
 S-ion: Sulphide ion detector tube  
 T-sulph: Total sulphide detector tube  
 Air: Airtec Tube

Detector tube		Substances to be measured	Detector tube		Substances to be measured	
Number	Page		Number	Page		
1A (Air)	3-14	Carbon monoxide	4HP	2-127	Hydrogen sulphide	
1D (Dosi)	4-10		4HH	2-128		
1DL (Dosi)	4-11		4H	2-129		
1HH	2-56		4HM	2-130		
1H	2-57		4M	2-131		
1LM	2-59		4L	2-132		
1L	2-60		4LL	2-133		
1La	2-61		4LK	2-134		
1LK	2-62		4LB	2-135		
1LKC	2-63		4LT	2-136		
1LL	2-64		4S (Odour)	3-67		
1LC	2-65		4TP (Auto)	3-51		
1M	2-58		5DH (Dosi)	4-23		
			5D (Dosi)	4-24		
2A (Air)	3-12	Carbon monoxide Gasoline	5H	2-195	Sulphur dioxide	
2Ag (Air)	3-13		5M	2-196		
2D (Dosi)	4-9	Carbon dioxide	5L	2-197	Sulphur dioxide Thionyl chloride	
2HT (Inject)	3-36			5La		2-198
2HH	2-48			5LC		2-199
2H	2-49			5Lb	2-200	
2L	2-50			6AH (Air)	3-18	Water vapour
2LL	2-51			6A (Air)	3-19	
2LC	2-52			6Ag (Air)	3-20	
3DL (Dosi)	4-7	Ammonia Methyl amine Trimethylamine	6	2-225		
3D (Dosi)	4-6	Ammonia Dimethylamine N, N-Dimethylethylamine Hydrazine Triethylamine	6L	2-226		
3H	2-23	Ammonia Dimethylamine	6LP	2-227		
3HM	2-24	Ammonia	6LLP	2-228	Phosphine	
3L	2-27			7H		2-185
3La	2-26			7J		2-186
3M	2-25	Ammonia Trimethylamine	7	2-187		
3S (Odour)	3-66	Ammonia	7L	2-188		
4D (Dosi)	4-19	Hydrogen sulphide	7LA	2-189		
4HT	2-126			8D (Dosi)	4-12	
				8HH	2-70	
			8H	2-71	Chlorine Chlorine dioxide	
			8La	2-72	Chlorine Bromine Chlorine dioxide	

Detector tube		Substances to be measured
Number	Page	
8LL	2-73	} Chlorine
8TP (Auto)	3-41	
9D (Dosi)	4-21	Nitrogen dioxide
9DL (Dosi)	4-22	Nitrogen dioxide
9L	2-173	
		Iodine
9P (Auto)	3-55	Nitrogen dioxide
10	2-177	Nitrogen oxides
		•Nitrogen dioxide
		•Nitrogen monoxide
11A (Air)	3-15	} Nitrogen oxides
11HA	2-174	
11S	2-175	
11L	2-176	
12D (Dosi)	4-16	} Hydrogen cyanide
12H	2-118	
12M	2-119	Hydrogen cyanide
12L	2-120	Hydrogen cyanide
		Acetone cyanohydrin
		Boron trichloride
12LL	2-121	} Hydrogen cyanide
12TP (Auto)	3-49	
13M	2-53	} Carbon disulphide
13	2-54	
13L	2-55	
14R	2-115	Hydrogen chloride (for Low Humidity)
14M	2-116	} Hydrogen chloride
14L	2-117	
14D (Dosi)	4-15	
		Hydrogen fluoride
		Nitric acid
15L	2-172	Nitric acid
		Hydrogen bromide
		Trichloroacetic acid
16	2-184	Phosgene
17	2-122	Hydrogen fluoride
		Fluorine
17L	2-123	} Hydrogen fluoride
17LL	2-124	
17D (Dosi)	4-17	
	4-17	Nitric acid
17TP (Auto)	3-50	Hydrogen fluoride
18M	2-179	} Ozone
18L	2-180	
19LA	2-31	Arsine
21	2-68	} Carbonyl sulphide
21LA	2-69	
22	2-84	Diborane
23M	2-74	} Chlorine dioxide
23L	2-75	

Detector tube		Substances to be measured
Number	Page	
25 (Poly)	3-26	} Unkown gases
26 (Poly)	3-27	
27 (Poly)	3-28	
30	2-114	Hydrogen
31B	2-178	Oxygen
32	2-125	} Hydrogen peroxide
32D (Dosi)	4-18	
35	2-201	Sulphuric acid
40	2-150	Mercury vapour
45H	2-138	Hydrogen sulphide + Sulphur dioxide
45S	2-137	Hydrogen sulphide, Sulphur dioxide
51H (Pyro)	3-4	Fluorochlorocarbons
		•1, 1, 2-Trichloro-1, 2, 2-trifluoroethane (R113)
		•Chlorodifluoromethane (R22)
		•Dichlorodifluoromethane (R12)
		•1, 2-Dichloro-1, 1, 2, 2-tetrafluoroethane (R114)
		•Halothane
		•1, 1, 2, 2-Tetrachloro-1, 2-difluoroethane (R112)
		•Trichlorofluoromethane (R11)
		•1, 1, 1-Trichloro-2, 2, 2-trifluoroethane (R113a)
51 (Pyro)	3-5	Fluorochlorocarbons
		•1, 1, 2-Trichloro-1, 2, 2-trifluoroethane (R113)
		•1, 1-Dichloro-1-fluoroethane (R141b)
		•2, 2-Dichloro-1, 1, 1-trifluoroethane (R123)
		•Dichloropentafluoropropane (R225)
		•Chlorodifluoromethane (R22)
		•Dichlorodifluoromethane (R12)
		•1, 2-Dichloro-1, 1, 2, 2-tetrafluoroethane (R114)
		•Enflurane
		•Halothane
		•Methyl chloride
		•1, 1, 2, 2-Tetrachloro-1, 2-difluoroethane (R112)
		•Trichlorofluoromethane (R11)
		•1, 1, 1-Trichloro-2, 2, 2-trifluoroethane (R113a)
		•2-Chloro-1, 1, 1, 2-tetrafluoroethane (R124)

Detector tube		Substances to be measured
Number	Page	
51L (Pyro)	3-6	<b>Fluorochlorocarbons</b> • 1, 1, 2-Trichloro-1, 2, 2-trifluoroethane (R113) • Chlorodifluoromethane (R22) • Dichlorodifluoromethane (R12) • 1, 1-Dichloro-1-fluoroethane (R141b) • 1,2-Dichloro-1, 1, 2, 2-tetrafluoroethane (R114) • 2, 2-Dichloro-1, 1, 1-trifluoroethane (R123) • Dichloropentafluoropropane (R225) • Enflurane • Halotane • Methyl chloride • Methylene chloride • 1, 1, 2, 2-Tetrachloro-1, 2-difluoroethane (R112) • Trichlorofluoromethane (R11) • 1, 1, 1-Trichloro-2, 2, 2-trifluoroethane (R113a)
52 (Pyro)	3-7	<b>Nitro compounds</b> • Acetonitrile • Nitroethane • Nitromethane • 1-Nitropropane • 2-Nitropropane • Nitrogen dioxide
53 (Pyro)	3-8	<b>Dimethyl sulphide</b> <b>Dimethyl disulphide</b>
60	2-183	<b>Phénol</b> <b>Naphthalene</b>
61	2-81	<b>o-Cresol</b> <b>m-Cresol</b> <b>p-Cresol</b>
70	2-148	<b>Mercaptans</b> Ethyl mercaptan Isopropyl mercaptan Methyl mercaptan Propyl mercaptan
70L	2-149	<b>Mercaptans</b> Butyl mercaptan tert-Butyl mercaptan Ethyl mercaptan Methyl mercaptan Propyl mercaptan
71	2-170	<b>Methyl mercaptan</b>
71H	2-169	<b>Methyl mercaptan</b> <b>Ethyl mercaptan</b>

Detector tube		Substances to be measured
Number	Page	
72	2-101	} <b>Ethyl mercaptan</b>
72L	2-102	
75	2-45	<b>tert-Butyl mercaptan</b>
75L	2-46	<b>tert-Butyl mercaptan</b> <b>2-Mercaptoethanol</b>
76H	2-207	} <b>Tetrahydrothiophene</b>
76M	2-208	
76	2-209	
77	2-47	<b>tert-Buthyl mercaptane</b> <b>and Dimethyl Sulphide</b>
80	2-16	<b>Acid gases</b> • Chlorine • Hydrogen chloride • Iodine • Nitric acid • Nitrogen dioxide • Sulphur dioxide
81	2-11	<b>Acetic acid</b> Acetic anhydride Acrylic acid Formic acid Isovaleric acid Maleic anhydride Methacrylic acid Propionic acid
81L	2-12	<b>Acetic acid</b> Acetic anhydride Acrylic acid Butyric acid Formic acid Isovaleric acid Methacrylic acid Propionic acid Valeric acid
81D (Dosi)	4-4	<b>Acetic acid</b> Acetic anhydride Formic acid
91M	2-103	} <b>Formaldehyde</b>
91	2-104	
91L	2-105	
		Formaldehyde Benzaldehyde Cyclohexanone Diisobutyl ketone Methaldehyde Propionaldehyde
91LL	2-106	<b>Formaldehyde</b>
91D (Dosi)	4-14	<b>Formaldehyde</b> Acetaldehyde Furfural Methyl ethyl ketone
91P (Auto)	3-45	<b>Formaldehyde</b>

Detector tube		Substances to be measured
Number	Page	
91PL (Auto)	3-46	} Formaldehyde
91TP (Auto)	3-47	
92	2-8	Acetaldehyde Diacyetyl
92M	2-9	} Acetaldehyde
92L	2-10	
93	2-17	Acrolein
100A	2-147	LP-gas (LPG ) Olefines Propylene Xylene
100B (Inject)	3-37	Propane
101	2-107	Gasoline Heptane Isooctane Octane
101L	2-108	Gasoline Ally chloride Heptane Isobutene
102H	2-109	Hexane Cyclohexane Methylcyclohexane
102L	2-110	Hexane Acrylonitrile tert-Butyl alcohol Chlorocyclohexane Cyclohexane Diisobutyl ketone
102TP (Auto)	3-48	Hexane
103	2-113	Hydrocarbons (Lower class) • Acetylene • Butane • Ethylene • Heptane • Hexane • Isobutane • Isopentane • Pentane • Propane
104	2-40	Butane Isobutane Pentane
105	2-112	Hydrocarbons (Higher class) • Decane • Heptane • Hexane • Nonane • Octane
106	2-182	Petroleum naphtha Petroleum benzine

Detector tube		Substances to be measured
Number	Page	
		Petroleum ether
107 (Poly)	3-25	Unknown gases
109A (Air)	3-17	} Oil Mist
109AD (Air)	3-16	
111	2-152	Methanol
111L	2-153	Methanol Ethylene chlorohydrin
111LL	2-154	} Methanol
111TP	3-53	
112	2-89	} Ethanol
112L	2-90	
112D (Dosi)	4-13	
113	2-144	Isopropyl alcohol Propyl alcohol
113L	2-145	Isopropyl alcohol Divinyl methoxysilane Ethylene glycol monobutyl ether Ethylene glycol monoethyl ether Ethylene glycol monoethyl ether acetate Ethylene glycol monomethyl ether Ethylene glycol monomethyl ether acetate 1-Methoxy-2-propanol Propyl alcohol Vinyl trimethoxysilane
113LL	2-146	Isopropyl alcohol Ethylene glycol monobutyl ether Ethylene glycol monoethyl ether Ethylene glycol monomethyl ether 1-Methoxy-2-propanol Propyl alcohol Isopropyl alcohol
114	2-41	1-Butanol
115	2-42	2-Butanol
116	2-142	Isobutyl alcohol
117	2-140	Isoamyl alcohol
118	2-82	Cyclohexanol
119	2-159	Methylcyclohexanol
120	2-30	Aromatic Hydrocarbons
121S	2-32	Benzene
121	2-33	Benzene Diisobutylene $\alpha$ -Pinene
121SL	2-34	Benzene

Detector tube		Substances to be measured
Number	Page	
121L	2-35	Benzene Methyl iodide Methylene iodide
121SP	2-36	} Benzene
121P (Auto)	3-40	
122	2-210	Toluene Ethyl benzene
122L	2-211	Toluene Cumene Diethyl benzene Ethyl benzene Xylene
122DL (Dosi)	4-26	Toluene Benzene Cumene Ethyl benzene Xylene Styrene
122P (Auto)	3-58	Toluene Ethyl benzene p-Xylene
122TP (Auto)	3-59	Toluene
123	2-229	Xylene Trimethylbenzene
123L	2-230	Xylene
123TP (Auto)	3-63	Xylene
124	2-193	Styrene
124L	2-194	Styrene Divinyl benzene
124S (Odour)	3-68	Styrene
126	2-76	} Chlorobenzene
126L	2-77	
127	2-85	
127P (Auto)	3-42	o-Dichlorobenzene m-Dichlorobenzene p-Dichlorobenzene p-Dichlorobenzene
128	2-192	Stoddard solvent
130L	2-224	Vinylidene chloride
131	2-220	Vinyl chloride
131La	2-221	Vinyl chloride 1, 3-Dichloropropene p-Ethyl benzylchloride Ethyl chloroformate 2-Methyl allyl chloride Methyl chloroformate Propylene dichloride 1, 2, 4-Trichlorobenzene
131L	2-222	Vinyl chloride Allyl chloride 1, 1, 2, 2-Tetrachloroethane
131LB	2-223	Vinyl chloride
131P (Auto)	3-62	Vinyl chloride

Detector tube		Substances to be measured
Number	Page	
132HH	2-214	Trichloroethylene Tetrachloroethylene
132HA	2-215	Trichloroethylene 1, 2-Dichloroethylene 1, 3-Dichloropropene
132M	2-216	Trichloroethylene
132L	2-217	Trichloroethylene Benzyl chloride
132LL	2-218	Trichloroethylene 1, 2-Dichloroethylene
132LC	5-11	Trichloroethylene
132P (Auto)	3-60	Trichloroethylene
132TP (Auto)	3-61	Trichloroethylene
132D (Dosi)	4-27	Trichloroethylene Chlorine 1, 2-Dichloroethylene Hydrogen chloride Tetrachloro ethylene
133HA	2-202	} Tetrachloroethylene
133M	2-203	
133L	2-204	Tetrachloroethylene Pentachloroethane
133LL	2-205	} Tetrachloroethylene
133LC	5-12	
133P (Auto)	3-56	
133TP (Auto)	3-57	
133D (Dosi)	4-25	
134	2-66	Carbon tetrachloride Chloropicrin
134L	2-67	Carbon tetrachloride
135	2-212	1, 1, 1-Trichloroethane Chlorobromomethane 1, 1-Dichloroethane 1, 1, 2-Trichloroethane 1, 2-Dichloroethane
135L	2-213	1, 1, 1-Trichloroethane 1, 2-Dichloroethane 1, 1, 2, 2-Tetrabromoethane 1, 2, 3-Trichloropropane
136H	2-155	Methyl bromide 1, 2-Dibromoethane Chloro bromomethane n-Butyl bromide
136L	2-156	Methyl bromide Benzyl bromide Bromoform 1, 1-Dibromoethane 1, 2-Dibromoethane Dibromomethane Ethyl bromide Chloro bromomethane n-Butyl bromide

Detector tube		Substances to be measured
Number	Page	
136LA	2-157	Methyl bromide n-Butyl bromide n-Propyl bromide Chloro bromomethane
136LL	2-158	Methyl bromide
137	2-78	} Chloroform
137LA	2-79	
137LL	2-80	
138	2-161	
		Methylene chloride Ethyl chloride
138L	2-162	Methylene chloride
139	2-86	1, 2-Dichloroethylene
140	2-20	Aliphatic hydrocarbon
141	2-91	Ethyl acetate Vinyl acetate
141L	2-92	Ethyl acetate Cymene Diisopropyl benzene Ethyl acrylate 2-Hexyl alcohol Isopropyl ether Mesityl oxide Methyl acrylate
142	2-43	Butyl acetate
142L	2-44	Butyl acetate Butyl acrylate Isobutyl acrylate
143	2-219	Vinyl acetate
144	2-141	Isobutyl acetate
145	2-190	Propyl acetate
146	2-143	Isopropyl acetate
147	2-28	Amyl acetate
148	2-139	Isoamyl acetate
149	2-171	Methyl methacrylate Allyl isothiocyanate
151	2-13	Acetone Cyclohexene
151L	2-14	Acetone Methyl ethyl ketone Propionaldehyde
151D (Dosi)	4-5	Acetone Acetaldehyde Methyl ethyl ketone Methyl isobutyl ketone
151TP (Auto)	3-39	Acetone
152	2-163	} Methyl ethyl ketone
152L	2-164	
152TP (Auto)	3-54	
152D (Dosi)	4-20	

Detector tube		Substances to be measured
Number	Page	
153	2-167	Methyl isobutyl ketone Methyl isobutyl ketone Styrene
153L	2-168	Methyl isobutyl ketone
154	2-83	Cyclohexanone Diacetone alcohol Furfural Isophorone
155	2-160	Methylcyclohexanone
159	2-206	Tetrahydrofuran 1, 4-Dioxane
161	2-99	Ethyl ether Isopropyl ether Methyl ether Tetrahydrofuran Toluene
161L	2-100	Ethyl ether
163	2-96	Ethylene oxide 1, 4-Dioxane Propylene oxide
163L	2-97	Ethylene oxide Epichlorohydrin Propylene oxide
163LL	2-98	} Ethylene oxide
163TP (Auto)	3-44	
163TPM (Auto)	3-43	
165L	2-95	Ethylene glycol
171	2-15	Acetylene Benzene Ethylene 1, 1, 1-Trichloroethane
172	2-93	Ethylene Acetylene
172L	2-94	Ethylene
174	2-37	1, 3-Butadiene 1, 3-Pentadiene
174L	2-38	1, 3-Butadiene 1, 3-Pentadiene
174LL	2-39	} 1, 3-Butadiene
174D (Dosi)	4-8	
		Ethylene Isoprene trans-1, 2-Dichloroethylene Vinyl chloride
180	2-21	Amines • Allylamine • Ammonia • Butylamine • tert-Butylamine • Di-n-Butylamine • Cyclohexylamine

