KIN-TEK

The Calibration Specialists

SERVICE MERGES QUALITY

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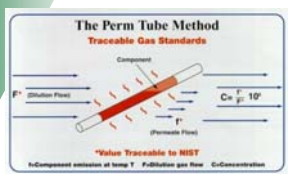
ASAP

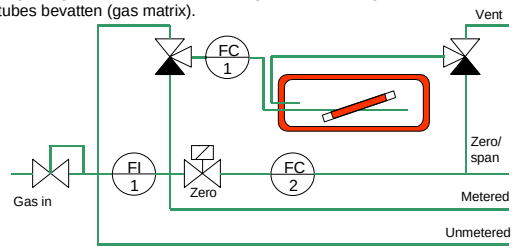


Betrouwbaar en nauwkeurig
Gravimetrisch, gecertificeerd en NIST traceble.

Compliance
OSHA, ISO 9000, GMP, NIST: 5 jaar registratie
Instrument performance validatie programma.

Veiligheid
De volumes van de tubes zijn fracties van druk gevulde gas cilinders en zijn gemaakt van een niet breekbare materiaal.
Er zijn geen speciale transporten nodig.

Kosten
1 tube vervangt 10 stuks 50 liter cilinders. Met 1 gas generator en 1 tube kan nagenoeg iedere standaard worden gemaakt. 1 Gas generator kan meerdere tubes bevatten (gas matrix).



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491 MB Gas Standard Generator
•1000 ppm tot ppb niveau
•Multi cal.standaards van één tube
•Enkele oven
•Geschikt voor zowel wegwerp als navulbare permiatie tubes.
Portable als stationair te gebruiken

Span Pac I series
•On-line industriële uitvoering
•Ex en GP uitvoering
•Laag ppb tot 1000 ppm
•Multi comp.mengsels (max 24 comp.)

491 M Modulair Gas Standaard Generator
•Modulair systeem, basis: oven + 2x mass flow
•Opties:
  •Blending (hoge % direct uit cilinder)
  •Bevochtigingmodule
  •Uitbereiding met meerdere ovens
•Sub ppb tot 50%

Span Chek
•Draagbare unit
•0,1 tot 100 ppm
•Concentratie range 3:1
•Oplaadbare batterij voeding
•Interne pomp (lucht)
•5x SRT of 4x SRT2 of 4x HRT tubes

TO-14 Complex Mengsel Generator
•Modulair systeem: 6-30 ovens
•240 componenten in droge en natte matrix.
•Lage ppb tot 1000 ppm
•Ontworpen voor prod.ontwikkeling en milieu studies

Specialities:
Span Pac H2O
•100ppb tot 10 ppm
•Max. 6 of 1 hervulbare tube

Span Pac ATM
•Sporen O2, H2O en Co2
•<10 ppb tot 1000 ppm

Model 670C
•Low cost, 6x HRT of 1 LFH/ULED tube

Wegwerp en navulbare permiatie tubes
•Navulbaar: LFH en ULED (zeer lage concentraties)
•Wegwerp: SRT Standard Rate Tubegemid.conc.voor comp.met hoge dampspanning (SO2, H2S, NH3) en zeer lage conc.voor comp.met lage dampspanning
•SRT2: idem SRT echter tot 50°C
•HRT: High Rate Tube
•EL: Extra Lifetime

Berekeningen

Berekening van concentratie gasmengsels.

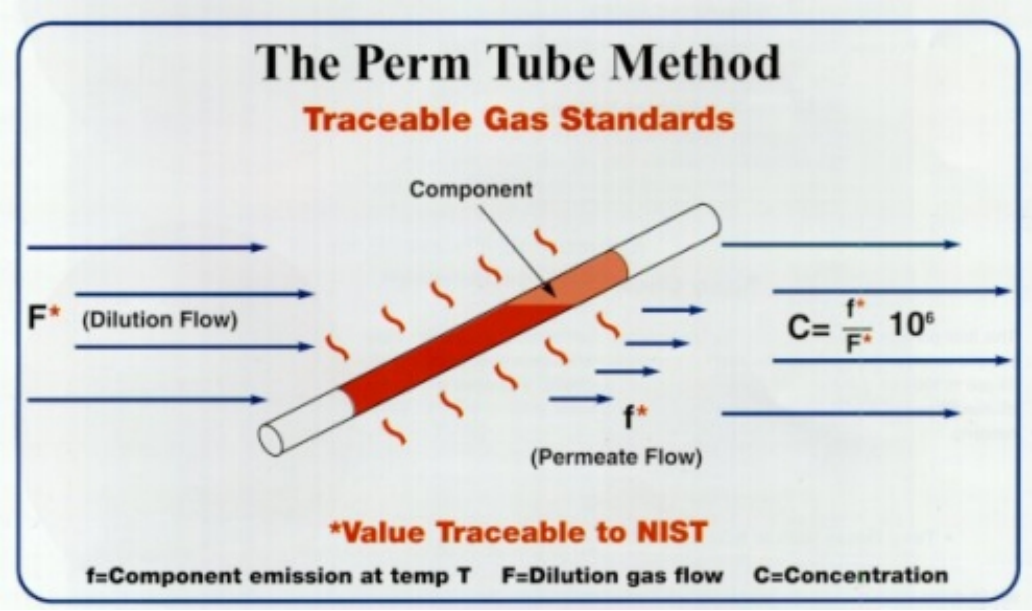
Wegwerp permiatie tubes
Over het algemeen worden wegwerp permiatie tubes geleverd met een emissie graad in het nanogram bereik. De concentratie van een desbetreffende component wordt als volgt bepaald.

$$C = \frac{E * K_0}{F}$$

Waarbij:

- C: concentratie in ppm (v/v).
- E: emissie graad van een bepaalde component in ng/min bij een bepaalde temperatuur.
- K_0: component constante voor conversie van gewicht per minuut naar volume per minuut.
- F: debiet verdunningsflow in cc/min.

$$K_0 = \frac{22,4}{Mw}$$



Componenten Lijst

1	3025 Acetaldehyde	177	3142 2-Heptanone
2	2033 Acetamide	178	2057 Heptyl cyanide
3	3039 Acetic acid	179	4032 Hexachloro-1,3-butadiene
4	3026 Acetone	180	4076 Hexachlorobenzene
5	2014 Acetonitrile	181	3130 Hexadecane
6	3004 Acetylene	182	5031 Hexamethylcyclotrisiloxane
7	3033 Acrolein	183	5020 Hexamethyldisilazane
8	3068 Acrylic acid	184	5026 Hexamethyldisiloxane
9	2009 Acrylonitrile	185	3017 Hexane
10	2009 Acrylonitrile-d3	186	2055 Hexanenitrile
11	3008 Allene	187	3156 2-Hexanone
12	4052 Allyl chloride	188	3109 n-Hexene
13	2060 2,-Aminoacetophenone	189	2013 Hydrazine
14	2003 Ammonia	190	5009 Hydrogen
15	2028 Aniline	191	4007 Hydrogen bromide
16	3127 Anthracene	192	4002 Hydrogen chloride
17	5005 Argon	193	4006 Hydrogen fluoride
18	4089 Arsenic trichloride	194	1002 Hydrogen sulfide
19	5014 Arsine	195	4042 Iodine
20	3061 Benzaldehyde	196	3115 Isoamyl acetate
21	3018 Benzene	197	3010 Isobutane
22	3018 Benzene-d6	198	3055 Isobutanol
23	3128 Benzofuran	199	3058 Isobutyl acetate
24	3108 Benzyl alcohol	200	4094 Isobutyl chloroformate
25	4069 Benzyl chloride	201	1016 Isobutyl mercaptan
26	4022 Boron trifluoride	202	3012 Isobutylene
27	4004 Bromine	203	3063 Isobutyraldehyde
28	4086 1-Bromo-4-fluorobenzene	204	3077 Isooctane
29	4059 1-Bromobutane	205	3120 Isopentane
30	4083 Bromochloromethane	206	3059 Isoprene
31	4096 Bromoform	207	3022 Isopropanol
32	4081 2-Bromopropane	208	3111 Isopropyl acetate
33	3011 1,3-Butadiene	209	3052 Isopropyl ether
34	3085 1,2-Butadiene	210	1018 Isopropyl mercaptan
35	3009 Butane	211	3064 Isovaleraldehyde
36	3048 tert-Butanol	212	5010 Krypton
37	3053 n-Butanol	213	3083 d-Limonene
38	3029 2-Butanone	214	3051 Maleic anhydride
39	3013 Butene	215	3037 Mesitylene
40	3014 cis-2-Butene	216	3066 Methacrolein
41	3015 trans-Butene	217	3001 Methane
42	3043 n-Butyl acetate	218	3020 Methanol
43	3100 Butyl acrylate	219	3090 1-Methoxy-2-propanol
44	3092 Butyl cellosolve	220	3098 1-Methoxy-2-propyl acetate

45	4055 tert-Butyl chloride	221	3123 2-(2-Methoxyethoxy)ethanol
46	4087 Butyl chloride	222	3081 2-Methoxyethyl ether
47	3139 tert-Butyl ethyl ether	223	3116 Methyl acetate
48	2038 Butyl isocyanate	224	3007 Methyl acetylene
49	1015 n-Butyl mercaptan	225	3113 Methyl acrylate
50	1019 tert-Butyl mercaptan	226	2007 Methyl amine
51	1022 2-Butyl mercaptan	227	3082 Methyl benzoate
52	3138 tert-Butyl methyl ether	228	4015 Methyl bromide
53	2061 Butylamine	229	3095 Methyl cellosolve
54	3143 4-tert-Butyltoluene	230	3096 Methyl cellosolve acetate
55	3034 Butyraldehyde	231	4003 Methyl chloride
56	3073 Butyric acid	232	4029 Methyl chloroform
57	3124 g-Butyrolactone	233	3135 Methyl cyclopentane
58	2029 Butyronitrile	234	2017 Methyl hydrazine
59	5002 Carbon dioxide	235	4041 Methyl iodide
60	1005 Carbon disulfide	236	3044 Methyl isobutyl ketone
61	5001 Carbon monoxide	237	2030 Methyl isocyanate
62	4009 Carbon tetrachloride	238	3118 Methyl isopropyl ketone
63	4014 Carbonyl fluoride	239	2050 Methyl isothiocyanate
64	1003 Carbonyl sulfide	240	1004 Methyl mercaptan
65	3153 3-Carene	241	3114 Methyl methacrylate
66	3091 Cellosolve	242	3134 2-Methyl pentane
67	3049 Cellosolve acetate	243	4057 Methyl phosphonic dichloride
68	4001 Chlorine	244	4053 Methyl phosphonic difluoride
69	4095 1-Chloro-2-methylpropane	245	2034 2-Methyl pyrazine
70	4038 Chlorobenzene	246	2027 3-Methyl pyridine
71	4085 Chlorobenzene-d5	247	2041 n-Methyl pyrrolidinone
72	4093 2-Chloroethanol	248	3074 Methyl salicylate
73	1027 2-Chloroethyl ethylsulfide	249	3075 3-Methyl valeric acid
74	4051 bis-2-Chloroethylether	250	3067 Methyl vinyl ketone
75	4012 Chloroform	251	2052 Methylaminoethanol
76	4079 Chloromethyl methyl ether	252	2063 Methyldiethanolamine
77	4033 2-Chlorophenol	253	4077 Methylene bromide
78	4049 Chloropicrin	254	4028 Methylene chloride
79	4082 2-Chloropropane	255	1024 3-(Methylthio)propionaldehyde
80	3070 m-Cresol	256	2015 Monoethanolamine
81	3106 o-Cresol	257	3152 Myrcene
82	3107 p-Cresol	258	3040 Naphthalene
83	3065 Crotonaldehyde	259	5007 Neon
84	2037 3-Cyanopyridine	260	2054 Nicotine
85	3105 Cyclohexane	261	2022 Nitric acid
86	3117 Cyclohexanol	262	2001 Nitric oxide
87	3035 Cyclohexanone	263	2022 Nitric-15N-acid
88	3131 Cyclopentane	264	5004 Nitrogen
89	3062 Decane	265	2002 Nitrogen dioxide

90	3144	Diacetone alcohol	266	4008	Nitrogen trifluoride
91	2048	1,4-Diaminocyclohexane	267	2012	Nitrous oxide
92	4078	1,4-Dichloro-2-butene	268	3137	n-Nonane
93	4027	1,2-Dichlorobenzene	269	3136	n-Octane
94	4072	1,3-Dichlorobenzene	270	2058	Octyl cyanide
95	4073	1,4-Dichlorobenzene	271	5003	Oxygen
96	4031	1,2-Dichloroethane	272	3151	Pentadecane
97	4048	1,1-Dichloroethane	273	4091	Pentafluorobenzene
98	4067	cs-1,2-Dichloroethylene	274	1023	Pentamethylene sulfide
99	4043	1,2-Dichloropropane	275	3016	Pentane
100	4070	cs-1,3-Dichloropropene	276	2059	Pentanenitrile
101	4071	tr-1,3-Dichloropropene	277	3157	2-Pentanone
102	4061	Dichlorosilane	278	3132	1-Pentene
103	5029	Dicyclohexylmethylphosphonate	279	2053	Perfluorotributylamine
104	3140	Dicyclopentadiene	280	3069	Phenol
105	3028	Diethyl ether	281	4013	Phosgene
106	5033	Diethyl methylphosphonate	282	5013	Phosphine
107	2044	Diethylamine	283	4060	Phosphorus oxychloride
108	1031	Diethylmethylphosphonothioate	284	3155	Pinacolone
109	4084	1,4-Difluorobenzene	285	3147	Pinacolyl alcohol
110	4090	1,3-Difluorobenzene	286	5027	Pinacolyl methylphosphonate
111	2008	Diisopropylamine	287	3122	a-Pinene
112	5016	Diisopropyl methylphosphonate	288	3154	B-Pinene
113	3119	Dimethoxymethane	289	2043	Piperidine
114	1007	Dimethyl disulfide	290	3005	Propane
115	3027	Dimethyl ether	291	3079	1,2-Propanediol
116	5024	Dimethyl ethoxysilane	292	3054	1-Propanol
117	2021	Dimethyl formamide	293	3046	Propionaldehyde
118	5017	Dimethyl methylphosphonate	294	3072	Propionic acid
119	5030	Dimethyl phosphite	295	2023	Propionitrile
120	1011	Dimethyl sulfate	296	3057	n-Propyl acetate
121	1006	Dimethyl sulfide	297	3056	n-Propyl benzene
122	1025	Dimethyl sulfone	298	1014	n-Propyl mercaptan
123	2042	Dimethylacetamide	299	3006	Propylene
124	2005	Dimethylamine	300	3071	Propylene oxide
125	3133	2,2-Dimethylbutane	301	2024	Pyridine
126	2067	Dimethylethanolamine	302	2024	Pyridine-d5
127	2016	1,1-Dimethylhydrazine	303	2031	Quinoline
128	3045	Dioxane	304	5022	Silane
129	3125	Dipropylene glycol methyl ether	305	4065	Silicon tetrachloride
130	5025	Disilane	306	4062	Silicon tetrafluoride
131	3145	Dodecane	307	3032	Styrene
132	3103	Dowtherm	308	3089	Styrene oxide
133	4039	Epichlorohydrin	309	1001	Sulfur dioxide
134	3002	Ethane	310	4075	1,1,2,2-Tetrachloroethane

135	1026 1,2-Ethanedithiol	311	4035 Tetrachloroethylene
136	3021 Ethanol	312	3146 Tetradecane
137	3030 Ethyl acetate	313	5019 Tetraethyl orthosilicate
138	3086 Ethyl acetylene	314	3050 Tetrahydrobenzaldehyde
139	3097 Ethyl acrylate	315	3060 Tetrahydrofuran
140	3041 Ethyl benzene	316	3148 Tetrahydrofurfuryl alcohol
141	4017 Ethyl chloride	317	1034 Tetrahydrothiophene
142	1017 Ethyl disulfide	318	5012 Tetramethylsilane
143	3141 Ethyl lactate	319	1029 Thiodiglycol
144	1010 Ethyl mercaptan	320	1021 Thiophene
145	1013 Ethyl methyl sulfide	321	3019 Toluene
146	2046 Ethyl morpholine	322	2011 Toluene -2,4-diisocyanate
147	2035 Ethyl pyrazine	323	2066 Tributylamine
148	2026 3-Ethyl pyridine	324	4074 1,2,4-Trichlorobenzene
149	1012 Ethyl sulfide	325	4068 1,1,2-Trichloroethane
150	2006 Ethylamine	326	4036 Trichloroethylene
151	2064 2-(Ethylamino)ethanol	327	4080 1,2,3-Trichloropropane
152	3041 Ethylbenzene-d10	328	4097 Trichlorosilane
153	2065 Ethyldiethanolamine	329	3150 Tridecane
154	3003 Ethylene	330	5032 Triethyl phosphite
155	4054 Ethylene dibromide	331	2019 Triethylenetetramine
156	3078 Ethylene glycol	332	3112 Triethylphosphate
157	3023 Ethylene oxide	333	4092 Trifluoroacetic acid
158	2020 Ethylenediamine	334	5034 Trimethyl phosphite
159	3031 2-Ethylhexanol	335	2047 Trimethylamine
160	3101 2-Ethylhexyl acrylate	336	3129 1,2,4-Trimethylbenzene
161	2036 2-Ethylimidazole	337	3149 Undecane
162	4058 Fluorobenzene	338	3080 Vanillin
163	3024 Formaldehyde *	339	3047 Vinyl acetate
164	2032 Formamide	340	3087 Vinyl acetylene
165	3038 Formic acid	341	4019 Vinyl bromide
166	4025 Freon 11	342	4020 Vinyl chloride
167	4050 Freon 113	343	3084 4-Vinyl cyclohexane
168	4056 Freon 114	344	4064 Vinyl fluoride
169	4040 Freon 12	345	3102 Vinylcyclohexene monoxide
170	4024 Freon 13	346	4030 Vinylidene chloride
171	4037 Freon 21	347	2025 4-Vinylpyridine
172	4026 Freon 22	348	5011 Water
173	3104 Furan	349	5006 Xenon
174	5015 Germane	350	3036 p-Xylene
175	5008 Helium	351	3042 m-Xylene
176	3126 Heptane 2056 Heptanenitrile	352	3076 o-Xylene