

Introduction

This guide includes most hazardous substances, including their current Workplace Exposure Limits at the time of printing (where applicable). For the most up-to-date version of this guide, please visit our website at www.skcltd.com. For a full list of Workplace Exposure Limits, please consult EH40, available from HSE books or www.hse.gov.uk. This guide should not be used as an alternative to obtaining a copy of EH40 and reading the full supplementary data it contains.

The following statements are taken directly from EH40 Workplace Exposure Limits.

Workplace Exposure Limits (WELs)

WELs are British occupational exposure limits and are set in order to help protect the health of workers. WELs are concentrations of hazardous substances in the air, averaged over a specified period of time, referred to as a time-weighted average (TWA). Two time periods are used: long-term (8 hours) and short-term (15 minutes).

Short-term exposure limits (STELs) are set to help prevent effects such as eye irritation, which may occur following exposure for a few minutes.

WELs and the Control of Substances Hazardous to Health Regulations 2002 (COSHH)

Substances that have been assigned a WEL are subject to the requirements of COSHH. These regulations require employers to prevent or control exposure to hazardous substances. For further information, go to www.hse.gov.uk/coshh. Under COSHH, control is defined as adequate only if a) the

principles of good control practice are applied, b) any WEL is not exceeded, and c) exposure to asthmagens, carcinogens, and mutagens are reduced as low as is reasonably practicable.

The absence of a substance from the list of WELs does not indicate that it is safe. For these substances, exposure should be controlled to a level to which nearly all the working population could be exposed, day after day at work, without any adverse effects on health.

As part of the assessment required under regulation 6 of COSHH, employers should determine their own working practices and in-house standards for control of exposure. In some cases, there may be sufficient information available for employers to set an 'in-house' working standard, e.g., from manufacturers and suppliers of the substances, publications of industry associations, occupational medicine and hygiene journals, and other agencies such as NIOSH and OSHA.

Chemical Hazard	MDHS Method No.	SAMPLING								Analytical Method	SKC Collecting Equipment and Page No.			
		WEL		Vol. (liter)		Rate (ml/min)		Time						
		TWA (ppm)	STEL (ppm)	TWA	STEL	TWA	STEL	TWA (hr)	STEL (min)					
Acetaldehyde	102	20 ppm (37 mg/m ³)	50 ppm (92 mg/m ³)			1000		8	15	HPLC	CF/CST 225-9003 or ST 226-120	or ST 226-119	or 37	
Acetaldehyde	102	20 ppm (37 mg/m ³)	50 ppm (92 mg/m ³)	diffusive	diffusive	diffusive	diffusive			HPLC	PS 500-100	67		
Acetic acid	96			24		50		8		GC-FID	ST 226-01	35		
Acetic anhydride	See OSHA 102	0.5 ppm (2.5 mg/m ³)	2 ppm (10 mg/m ³)	7.5	7.5	50	500	2.5	15	GC-NPD	CF/CST 225-9010	61	C/HLD 225-1 87	
Acetic anhydride	See OSHA 82	0.5 ppm (2.5 mg/m ³)	2 ppm (10 mg/m ³)	0.75		50		15 min		GC-NPD	CF/CST 225-9009	61	C/HLD 225-1 87	
Acetone	88	500 ppm (1210 mg/m ³)	1500 ppm (3620 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	64		
Acetone	96	500 ppm (1210 mg/m ³)	1500 ppm (3620 mg/m ³)	2	0.75	20	50	100 min	15	GC-FID	ST 226-01	35		
Acetonitrile	88	40 ppm (68 mg/m ³)	60 ppm (102 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	64		
Acetonitrile	96	40 ppm (68 mg/m ³)	60 ppm (102 mg/m ³)	10		20 (50)		8 (3.3)		GC-FID	ST 226-09	35		
o-Acetylsalicylic acid	14/3	5mg/m ³		120		2000		8		GR	IOM 225-70A	92	FLT 225-58F 79	
Acrolein (acrylaldehyde)	See OSHA 52/NIOSH 2501	0.1 ppm (0.23 mg/m ³)	0.3 ppm (0.7 mg/m ³)							GC-NPD	ST 226-117	OR ST 226-118	37	
Acrylamide	57	0.3 mg/m ³		50	3	100	200	8	15	HPLC-UV	IMP 225-36-1	59	IT 225-22 59	
Acrylonitrile	88	2 ppm (4.4 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	64		
Acrylonitrile	96	2 ppm (4.4 mg/m ³)		24		50		8		GC-FID	ST 226-01	35		
Allyl alcohol	88	2 ppm (4.8 mg/m ³)	4 ppm (9.7 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	64		
Allyl alcohol	96	2 ppm (4.8 mg/m ³)	4 ppm (9.7 mg/m ³)	10	3	20 (50)	200	8 (3.3)	15	GC-FID	ST 226-01	35		
Aluminium alkyl compounds	See OSHA ID-121	2 ppm		960		2000		8		AAS	F/CST 225-3-01	77		
Aluminium metal (inhalable dust)	14/3	10 mg/m ³		960		2000		8		GR	IOM 225-70A	92	FLT 225-58F 79	
Aluminium metal (respirable dust)	14/3	4 mg/m ³		1056		2200		8		GR	IOM 225-70A 92 FOAM 225-772 or CYC 225-69 95 FLT 225-58F 79			
Aluminium oxides (inhalable dust)	14/3	10 mg/m ³		960		2000		8		GR	IOM 225-70A 92 FLT 225-58F 79			
Aluminium oxides (respirable dust)	14/3	4 mg/m ³		1056		2000 (2200)		8		GR	IOM 225-70A 92 FOAM 225-772 or CYC 225-69 95 FLT 225-58F 79			
Aluminium salts, soluble	See OSHA ID-121	2 mg/m ³		960		2000		8		AA or AES	F/CST 225-3-01	77	C/HLD 225-1 87	
Amines, aromatic (skin)	75									CI	PCH 769-3001 or PCH 769-1001	122		
Amines, aromatic (surface)	75									CI	PCH 769-1021 or PCH 769-1001	122		
2-Aminoethanol	96	1 ppm (2.5 mg/m ³)	3 ppm (7.6 mg/m ³)	10		20		8		GC-FID	ST 226-10-04	35		
Ammonia, anhydrous	See NIOSH 6015	25 ppm (18 mg/m ³)	35 ppm (25 mg/m ³)	72	3	150	200	8	15	VAS	ST 226-10-06	35	F/CST 225-3-01 77	
Ammonia, anhydrous	See NIOSH 6016	25 ppm (18 mg/m ³)	35 ppm (25 mg/m ³)	48	3	100	200	8	15	IC	ST 226-10-06	35	F/CST 225-3-01 77	
Ammonium chloride (fume)	14/3	10 mg/m ³	20 mg/m ³	960	30	2000	2000	8	15	GR, IC-ECN	IOM 225-70A	92	FLT 225-19 76	
Ammonium sulphamate	14/3	10 mg/m ³	20 mg/m ³	960	30	2000	2000	8	15	GR	IOM 225-70A	92	FLT 225-19 76	
Aniline	96	1 ppm (4 mg/m ³)		200		20	200		100	GC-FID	ST 226-10	35		
Antimony & compounds (as Sb)	91	0.5 mg/m ³				2000		8		XRF	IOM 225-70A	92	FLT 225-19 76	
p-Aramid respirable fibres	87	0.5 fibres/ml		Refer to method						PCM	FLT/CL 225-54	92	FLT 225-1913 76	

See page 196 for abbreviations.

Chemical Hazard	MDHS Method No.	SAMPLING								Analytical Method	SKC Collecting Equipment and Page No.			
		WEL		Vol. (liter)		Rate (ml/min)		Time						
		TWA (ppm)	STEL (ppm)	TWA	STEL	TWA	STEL	TWA (hr)	STEL (min)					
Aromatic carboxylic acid anhydrides (see individual compounds)	62									HPLC	IOM ST 225-70A 226-35	92 FLT 225-58F 35	79	
Arsenic & compounds (except arsine) as As	91	0.1 mg/m ³		240		2000		2		XRF	IOM 225-70A	92 FLT 225-19	76	
Arsine	See NIOSH 6001	0.05 ppm (0.16 mg/m ³)		10	3	20	200	8	15	AA-GF	ST 226-01	35		
Asbestos (chrysotile alone)	See HSG 248		0.1	240	40	1000	4000	4	10	PCM	FLT/CL 225-54 225-1913	92 FLT 225-60F 76	or	
Asbestos, w/crocidolite/amosite/mixtures	See HSG 248		0.1	240	40	1000	4000	4	10	PCM	FLT/CL 225-54 225-1913	92 FLT 225-60F 76	or	
Asphalt (petroleum fumes)	See NIOSH 5042	5 mg/m ³	10 mg/m ³	360	60	1000	4000	6	15	GR	FLT 225-27-07 F/CST 225-2LF	74 SP 225-27 86	87	
Azodicarbonamide	92	1 mg/m ³	3 mg/m ³	960	30	2000	2000	8	15	HPLC	IOM 225-79A 225-2708	92 FLT 225-58F 74	79	
Barium compounds (soluble) (as Ba)	91	0.5 mg/m ³		960		2000		8		XRF	IOM 225-70A	92 FLT 225-19	76	
Barium sulphate (inhalable dust)	14/3	10 mg/m ³		960		2000		8		GR	IOM 225-70A	92 FLT 225-58F	79	
Barium sulphate (respirable dust)	14/3	4 mg/m ³		1056		2200		8		GR	CYC 225-69	95 FLT 225-58F	79	
Benzene	72	1 ppm (3.25mg/m ³)		2.5		5		8		GC-FID	ST 226-09	or ST 226-110	37	
Benzene	80	1 ppm (3.25mg/m ³)		24		50		8		GC-ECD	ST 226-357	39		
Benzene	88	1 ppm (3.25mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	64		
Benzene	96	1 ppm (3.25mg/m ³)		10	3	20	200	8	15	GC-FID	ST 226-01	35		
Benzyl butyl phthalate	32	5 mg/m ³		50		10		8		GC-FID	ST 226-35	✓ 35		
Benzyl butyl phthalate	96	5 mg/m ³		50		10		8		GC-FID	ST 226-35	✓ 35		
Benzyl chloride	88	0.5 ppm (2.6 mg/m ³)	1.5 ppm (7.9 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	64		
Benzyl chloride	96	0.5 ppm (2.6 mg/m ³)	1.5 ppm (7.9 mg/m ³)	10	3	20	200	8	15	GC-FID	ST 226-01	35		
Beryllium & compounds (as Be)	29/2	0.002 mg/m ³		960	120	2000	2000	8	60	AA	IOM 225-70A	92 FLT 225-19	76	
Bisphenol A	14/3	10 mg/m ³		960		2000		8		GR	IOM 225-70A	92 FLT 225-58F	79	
Bornan-2-one	88	2 ppm (13 mg/m ³)	3 ppm (19 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	64		
Bornan-2-one	96	2 ppm (13 mg/m ³)	3 ppm (19 mg/m ³)	10		20(50)		8(3.3)		GC-FID	ST 226-01	35		
Boron tribromide	See OSHA CSI		1 ppm (10 mg/m ³)		5		1000			IC	IMP 225-36-2 225-22	59 IMP 225-36-5 59	59	
Bromacil (ISO)	See OSHA CSI	1 ppm (11 mg/m ³)	2 ppm (22 mg/m ³)	50		1000		50		HPLC-UV	IMP 225-36-1	59 IT 225-22	59	
Bromine	See NIOSH 6011	0.1 ppm (0.66 mg/m ³)	0.2 ppm (1.3 mg/m ³)	250	15	1000	1000	4	15	IC	CF/CST 225-9006	61 C/HLD 225-1	87	
Bromomethane	See OSHA PV2040	5 ppm (20 mg/m ³)	15 ppm (59 mg/m ³)	3		50		1		GC-FID	ST 226-83 §	37		
1,3-Butadiene	53/2	10 ppm (22 mg/m ³)		5	7.5	10	500	8	15	GC-FID	ST 900 mg 13X MOLECULAR SIEVE	NA SKC		
1,3-Butadiene	63/2	10 ppm (22 mg/m ³)		diffusive	diffusive	diffusive	diffusive	8	15	GC-FID	PS 690-102	70		
1,3-Butadiene	80	10 ppm (22 mg/m ³)		24		50		8		GC-ECD	ST 226-358	39		
1,3-Butadiene	88	10 ppm (22 mg/m ³)		diffusive	diffusive	diffusive	diffusive	8	15	GC-FID	PS 575-001	64		
1,3-Butadiene	96	10 ppm (22 mg/m ³)		10		20		8		GC-FID	ST 226-09	35		
Butan-1-ol	72		50 ppm (154 mg/m ³)	24		50		8		GC-ECD	ST 226-358	39		
Butan-1-ol	80		50 ppm (154 mg/m ³)	24		50		8		GC-ECD	ST 226-358	39		
Butan-1-ol	88		50 ppm (154 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	64		
Butan-1-ol	96		50 ppm (154 mg/m ³)	10	3	20-50	200	8	15	GC-FID	ST 226-01	35		
Butan-2-ol	72	100 ppm (308 mg/m ³)	150 ppm (462 mg/m ³)	24		50		8		GC-ECD	ST 226-357	or ST 226-358	39	
Butan-2-ol	88	100 ppm (308 mg/m ³)	150 ppm (462 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	64		
Butan-2-ol	96	100 ppm (308 mg/m ³)	150 ppm (462 mg/m ³)	10	3	20-50	200	8(3.3)	15	GC-FID	ST 226-01	35		
Butan-2-one (MEK)	88	200 ppm (600 mg/m ³)	300 ppm (899 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	64		
Butan-2-one (MEK)	96	200 ppm (600 mg/m ³)	300 ppm (899 mg/m ³)	10	3	20-50	200	8(3.3)	15	GC-FID	ST 226-81A	36		
Butane	72	600 ppm (1450 mg/m ³)	750 ppm (1810 mg/m ³)	Refer to method						GC-FID	ST NA SKC			
2-Butoxyethanol	72	25 ppm	50 ppm	24		50		8		GC-ECD	ST 226-358	39		
2-Butoxyethanol	80	25 ppm	50 ppm	24		50		8		GC-ECD	ST 226-358	39		
2-Butoxyethanol acetate	88	20 ppm (133 mg/m ³)	50 ppm (332 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	or PS 575-002	64	
n-Butyl acetate	72, 96	150 ppm (724 mg/m ³)	200 ppm (966 mg/m ³)	10	3	20	200	8	15	GC-FID	ST 226-01	35		
n-Butyl acetate	80	150 ppm (724 mg/m ³)	200 ppm (966 mg/m ³)	24		50		8		GC-ECD	ST 226-358	39		
n-Butyl acetate	88	150 ppm (724 mg/m ³)	200 ppm (966 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	64		
sec-Butyl acetate	88	200 ppm (966 mg/m ³)	250 ppm (1210 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	64		
sec-Butyl acetate	96	200 ppm (966 mg/m ³)	250 ppm (1210 mg/m ³)	10	0.75	20	50	8	15	GC-FID	ST 226-01	35		
t-Butyl acetate	72	200 ppm (966 mg/m ³)	250 ppm (1210 mg/m ³)	10	3	20	200	8	15	GC-FID	ST 226-01	35		
t-Butyl acetate	88	200 ppm (966 mg/m ³)	250 ppm (1210 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	64		
n-Butyl acrylate	80	1 ppm (5 mg/m ³)	5 ppm (26 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	ST 226-37	36		
n-Butyl acrylate	88	1 ppm (5 mg/m ³)	5 ppm (26 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	64		
Butyl carbitol	See OSHA PV2095	10 ppm (67.5 mg/m ³)	15 ppm (101.2 mg/m ³)	10		200		50 min		GC-FID	ST 226-01	35		
n-Butyl chloroformate	See ASTM D6209	1 ppm (5.7 mg/m ³)		varies		225		varies		GC-MS	ST 226-131	38		
Butyl lactate	See OSHA PV2080	5 ppm (30 mg/m ³)		10		200		8		GC-FID	ST 226-01	35		
2-sec-Butylphenol	See OSHA PV2128	5 ppm (31 mg/m ³)		20		200		100 min		HPLC-UV	ST 226-95	37		
Cadmium & compounds (except oxide fume & sulphide pigments)	10/2	0.025 mg/m ³		960	30	2000	2000	8	15	AAS	IOM 225-70A	92 FLT 225-19	76	
Cadmium & compounds (except oxide fume & sulphide pigments)	91	0.025 mg/m ³		960	30	2000	2000	8	15	XRF	IOM 225-70A	92 FLT 225-19	76	
Cadmium oxide fume (as Cd)	10/2	0.025 mg/m ³	0.05 mg/m ³	960	30	2000	2000	8	15	AAS	IOM 225-70A	92 FLT 225-19	76	

See page 196 for abbreviations.

Chemical Hazard	MDHS Method No.	SAMPLING								Analytical Method	SKC Collecting Equipment and Page No.			
		WEL		Vol. (liter)		Rate (ml/min)		Time						
		TWA (ppm)	STEL (ppm)	TWA	STEL	TWA	STEL	TWA (hr)	STEL (min)					
Cadmium oxide fume (as Cd)	91	0.025 mg/m ³	0.05 mg/m ³	960		2000		8		XRF	IOM 225-70A	92 FLT	225-19	76
Cadmium sulphide & pigments (as Cd)	10/2	0.03 mg/m ³		1056		2000		8		AAS	IOM 225-70A	92 FLT	225-19	76
Cadmium sulphide & pigments (as Cd)	91	0.03 mg/m ³		960		2000		8		XRF	IOM 225-70A	92 FLT	225-19	76
Caesium hydroxide	91	2 mg/m ³		960		2000		8		XRF	IOM 225-70A	92 FLT	225-19	76
Calcium carbonate (inhalable)	14/3	10 mg/m ³		960		2000		8		GR	IOM 225-70A	92 FLT	225-58F	79
Calcium carbonate (respirable)	14/3	4 mg/m ³		1056		2000 (2200)		8		GR	IOM 225-70A	92 FOAM	225-772 or	
Calcium cyanamide	See OSHA ID-121	0.05 mg/m ³	1 mg/m ³	960		2000		8		AA or AES	F/CST 225-3-01	77 FLT	225-19	76
Calcium hydroxide	See NIOSH 7020	5 mg/m ³		240		1000		4		AA-F	F/CST 225-3-01	77 FLT	225-19	76
Calcium hydroxide										C/HLD	225-1	87		
Calcium oxide	See NIOSH 7020	2 mg/m ³		240		1000		4		AA-F	F/CST 225-3-01	77 FLT	225-19	76
Calcium oxide										C/HLD	225-1	87		
Calcium silicate (inhalable)	14/3	10 mg/m ³		960		2000		8		GR	IOM 225-70A	92 FLT	225-58F	79
Calcium silicate (respirable)	14/3	4 mg/m ³		1056		2000 (2200)		8		GR	IOM 225-70A	92 FOAM	225-772 or	
Calcium silicate (respirable)										CYC	225-69	95 FLT	225-58F	79
Captan (ISO)	94	5 mg/m ³	15 mg/m ³	240		2000 (500)		8		HPLC-UV	IOM 225-70A	92 FLT	225-58F	79
Captan (ISO)										ST	226-35	35		
Carbon black	14/3	3.5 mg/m ³	7 mg/m ³	960		2000		8		GR	IOM 225-70A	92 FLT	225-58F	79
Carbon dioxide	See OSHA ID-172/ NIOSH 6603	5000 ppm (9150 mg/m ³)	15000 ppm (27400 mg/m ³)							GC	SB 263-03	or SB 232-03	253-03	or
Carbon disulphide	96	5 ppm (15 mg/m ³)		10	3	20 (50)	200	8 (3.3)	15	GC	ST 226-01	35 ST	226-44	36
Carbon monoxide	See OSHA ID-210	30 ppm (35 mg/m ³)	200 ppm (232 mg/m ³)							GC	SB 263-03	or SB 232-03	253-03	or
Carbon tetrachloride	72	2 ppm (13 mg/m ³)			12		200		60	GC-FID	ST 226-01	35		
Carbon tetrachloride	80	2 ppm (13 mg/m ³)		24		50		8		GC-ECD	ST NA SKC			
Carbon tetrachloride	88	2 ppm (13 mg/m ³)		diffusive	diffusive	diffusive	diffusive	5	15	GC-FID	ST 575-001	64		
Carbon tetrachloride	96	2 ppm (13 mg/m ³)		10		20-50		8		GC-FID	ST 226-01	35		
Cellulose (inhalable dust)	14/3	10 mg/m ³	20 mg/m ³	960		2000		8		GR	IOM 225-70A	92 FLT	225-58F	79
Cellulose (respirable dust)	14/3	4 mg/m ³		1056		2000 (2200)		8		GR	IOM 225-70A	92 FOAM	225-772 or	
Cellulose (respirable dust)										CYC	225-69	95 FLT	225-58F	79
Chlorine	See NIOSH 6011		0.5 ppm (1.5 mg/m ³)	90	15	1000	1000	1.5	15	IC	CF/CST 225-9006	61		
Chlorine dioxide	See OSHA ID-202	0.1 ppm (0.28 mg/m ³)	0.3 ppm (0.84 mg/m ³)	120	7.5	500	500	4	15	IC-ECON	IMP 225-36-2	59 IMP	225-36-5	59
Chlorine dioxide										IT	225-22	59		
1-Chloro-2,3-epoxypropane (epichlorohydrin)	72, 80	0.5 ppm (1.9 mg/m ³)	1.5 ppm (5.8 mg/m ³)	24		50		8		GC-ECD	ST 226-358	39		
1-Chloro-2,3-epoxypropane (epichlorohydrin)	88	0.5 ppm (1.9 mg/m ³)	1.5 ppm (5.8 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	64		
1-Chloro-2,3-epoxypropane (epichlorohydrin)	96	0.5 ppm (1.9 mg/m ³)	1.5 ppm (5.8 mg/m ³)	10		20-50		8		GC-FID	ST 226-01	35		
1-Chloro-4-nitrobenzene	See NIOSH 2005	1 mg/m ³	2 mg/m ³	96		200		8		GC-FID	ST 226-10	35		
Chloroacetaldehyde	See NIOSH 2015		1 ppm (3.3 mg/m ³)		3		200		15	GC-ECD	ST 226-15GWS	35		
2-Chloroacetophenone	See OSHA CSI	0.05 ppm (0.32 mg/m ³)		12		200		1		HPLC-UV	ST 226-47-01	36		
Chlorobenzene	72, 96	1 ppm (4.7 mg/m ³)	3 ppm (14 mg/m ³)	10		20(50)		8(3.3)		GC-FID	ST 226-01	35		
Chlorobenzene	88	1 ppm (4.7 mg/m ³)	3 ppm (14 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	64		
Chlorodifluoromethane	96	1000 ppm (3590 mg/m ³)		varies		varies		varies		GC-FID	ST 226-01	35		
Chloroethane	96	50 ppm (134 mg/m ³)		3		50		1		GC-FID	ST 226-09	35		
2-Chloroethanol	96		1 ppm (3.4 mg/m ³)	10	3	20(50)	200	8(3.3)	15	GC-FID	ST 226-81A	36		
Chloroform	80	2 ppm (9.9 mg/m ³)		24		50		8		GC-ECD	ST 226-357	39		
Chloroform	88	2 ppm (9.9 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	64		
Chloroform	96	2 ppm (9.9 mg/m ³)		10		200		8		GC-FID	ST 226-01	35		
Chloromethane	96	50 ppm (105 mg/m ³)	100 ppm (210 mg/m ³)		0.5		100		5	GC-FID	ST 226-09	or ST 226-01	35	
bis-Chloromethyl ether	See OSHA 10	0.001 ppm (0.005 mg/m ³)		50		500		100 min		GC-ECD	IMP 225-36-2	59 IT	225-22	59
Chloropyrifos (ISO)	94	0.2 mg/m ³	0.6 mg/m ³	240		500		8		HPLC-UV	IOM 225-70A	92 FLT	225-58F	79
Chloropyrifos (ISO)										ST	226-35	35		
Chlorosulphonic acid	See NIOSH 7903	1 mg/m ³		48		200		4		IC	ST 226-10-03	35		
Chromium (VI) in chromium plating mist	52/3	0.05 mg/m ³		960	120	2000	2000	8	60	CLR	Chronic acid test kit 510-2000 and 225-9026	IOM 225-70A	92	
Chromium & inorganic compounds	12/2	0.5 mg/m ³		960		2000		8		AAS	IOM 225-70A	92 FLT	225-19	76
Chromium & inorganic compounds	91	0.5 mg/m ³		960		2000		8		XRF	IOM 225-70A	92 FLT	225-19	76
Chromium II & III compounds (as Cr)	12/2	0.5 mg/m ³		960		2000		8		AAS	IOM 225-70A	92 FLT	225-19	76
Chromium II & III compounds (as Cr)	91	0.5 mg/m ³		960		2000		8		XRF	IOM 225-70A	92 FLT	225-19	76
Chromium VI compounds (as Cr)	52/3	0.05 mg/m ³		240	30	2000	2000	2	15	CLR	IOM 225-70A	92 FLT	225-9026	61
Cobalt & cobalt compounds (as Co)	30/2	0.1 mg/m ³		960	30	2000	2000	8	15	AA	IOM 225-70A	92 FLT	225-19	76
Cobalt & cobalt compounds (as Co)	91	0.1 mg/m ³		240		2000		2		XRF	IOM 225-70A	92 FLT	225-19	76
Colophony	83/2			960	30	2000	2000	8	15	GC-FID	CST 225-8050K(kit)			
Copper dust & mists (as Cu)	91	1 mg/m ³	2 mg/m ³	960		2000		8		XRF	IOM 225-70A	92 FLT	225-19	76
Copper fume	91	0.2 mg/m ³		960		2000		8		XRF	IOM 225-70A	92 FLT	225-19	76
Cotton dust	14/3	2.5 mg/m ³		960		2000		8		GR	IOM 225-70A	92 FLT	225-58F	79
Cryofluorane (INN)	96	1000 ppm (7110 mg/m ³)	1250 ppm (8890 mg/m ³)	3		20		2.5		GC-FID	ST 226-01	or ST 226-09	35	
Cumene	72, 80	25 ppm (125 mg/m ³)	50 ppm (250 mg/m ³)	24		50		8		GC-ECD	ST 226-358	39		
Cumene	88	25 ppm (125 mg/m ³)	50 ppm (250 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	64		
Cumene	96	25 ppm (125 mg/m ³)	50 ppm (250 mg/m ³)	10		20	50	8	15	GC-FID	ST 226-01	35		

See page 196 for abbreviations.

Chemical Hazard	MDHS Method No.	SAMPLING								Analytical Method	SKC Collecting Equipment and Page No.						
		WEL		Vol. (liter)		Rate (ml/min)		Time									
		TWA (ppm)	STEL (ppm)	TWA	STEL	TWA	STEL	TWA (hr)	STEL (min)								
Cyanamide	See OSHA CSI	0.58 ppm (1 mg/m ³)		10		100		100 mins		HPLC-UV	ST	228-30-18	35				
Cyanides (except HCN, cyanogen & cyanogen chloride)	See NIOSH 7904	5 mg/m ³		120		500		4		ISE	FLT	225-2705	74	CST	225-2LF	86	
										IMP	225-36-2	59	IT	225-22	59		
										C/HLD	225-1	87					
Cyanogen chloride	See OSHA CSI		0.3 ppm (0.77 mg/m ³)		1		200		5	GC-NPD	ST	226-117	37				
Cyclohexane	88	100 ppm (350 mg/m ³)	300 ppm (1050 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	64				
Cyclohexane	96	100 ppm (350 mg/m ³)	300 ppm (1050 mg/m ³)	10		20		8		GC-FID	ST	226-01	35				
Cyclohexanol	88	50 ppm (208 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	64				
Cyclohexanol	96	50 ppm (208 mg/m ³)		10		20-50		8(3.3)		GC-FID	ST	226-01	35				
Cyclohexanone	88	10 ppm (41 mg/m ³)	20 ppm (82 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-003	64				
Cyclohexanone	96	10 ppm (41 mg/m ³)	20 ppm (82 mg/m ³)	10		20	50	8	15	GC-FID	ST	226-01	35				
Cyclohexylamine	See OSHA PV2016	10 ppm (41 mg/m ³)		20		200		100 min		GC-FID	ST	226-98	37				
2,4-D (ISO)	See NIOSH 5602	10 mg/m ³	20 mg/m ³	480		1000		8		GC-ECD	ST	226-58	36				
6,6'-Di-tert-butyl-4,4'-thiodi-m-cresol	See OSHA CSI	10 mg/m ³	20 mg/m ³	varies		varies		varies		HPLC-UV	F/CST	225-706	or	CYC	225-69-37	95	
										FLT	225-7	79					
2,6-Di-tert-butyl-p-cresol	See OSHA PV2108	10 mg/m ³		100		1000		100 min		GC-FID	ST	226-57	36				
Dialkyl 79 phthalate	See OSHA 104	5 mg/m ³		240		1000		4		GC-FID	ST	226-56	36				
Diallyl phthalate	See OSHA CSI	5 mg/m ³		60		1000		1		GC-FID	ST	226-30-16	35				
Diatomaceous earth (natural respirable dust)	14/3	1.2 mg/m ³		960 (1056)		2000 (2200)		8		GR	IOM	225-70A	92	FOAM	225-772	or	
										CYC	225-69	95	FLT	225-58F	79		
Dibenzoyl peroxide	See NIOSH 5009	5 mg/m ³		90		1500		1		HPLC-UV	F/CST	225-3-01	76				
Dibismuth trielluride	91	10 mg/m ³	20 mg/m ³	960		2000		8		XRF	IOM	225-70A	92	FLT	225-19	76	
Diboron trioxide	14/3	10 mg/m ³	20 mg/m ³	960 (1056)		2000 (2200)		8		GR	IOM	225-70A	92	FOAM	225-772	or	
										CYC	225-69	95	FLT	225-58F	79		
1,2-Dibromoethane	88	0.5 ppm (3.9 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	64				
1,2-Dibromoethane	96	0.5 ppm (3.9 mg/m ³)		10	3	20	200	8	15	GC-ECD	ST	226-01	35				
Dibutyl hydrogen phosphate	See NIOSH 5017	1 ppm (8.7 mg/m ³)	2 ppm (17 mg/m ³)	240		2000		2		GC-FPD	FLT	225-17-01	74	CST	225-2LF	86	
										C/HLD	225-1	87					
Dibutyl phthalate	32	5 mg/m ³	10 mg/m ³	50		100		8		GC-FID	ST	226-35	✓	35			
2,2-Dichloro-4,4'-methylene dianiline (MbOCA)	75	0.005 mg/m ³			200		2000		each 100 min	HPLC	IOM	225-70A	92	FLT	225-58F	79	
2,2'-Dichloro-4,4'-methylene dianiline (MbOCA)	75	0.005 mg/m ³		100		1000		100 min		GC-ECD	CF/CST	225-9004	61	C/HLD	225-1	87	
1,3-Dichloro-5,5-dimethylhydantion	Contact SKC Ltd	0.2 mg/m ³	0.4 mg/m ³														
Dichloroacetylene	See OSHA CSI		0.1 ppm (0.39 mg/m ³)		1		200		5	GC-FID	ST	226-01	35				
1,2-Dichlorobenzene (ortho-dichlorobenzene)	88	25 ppm (153 mg/m ³)	50 ppm (306 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	64				
1,2-Dichlorobenzene (ortho-dichlorobenzene)	96	25 ppm (153 mg/m ³)	50 ppm (306 mg/m ³)	10	3	20	200	8	15	GC-FID	ST	226-01	35				
1,4-Dichlorobenzene (para-dichlorobenzene)	88	25 ppm (153 mg/m ³)	50 ppm (306 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	64				
1,4-Dichlorobenzene (para-dichlorobenzene)	96	25 ppm (153 mg/m ³)	50 ppm (306 mg/m ³)	3		20		2.5		GC-FID	ST	226-01	35				
1,1-Dichloroethane	96	100 ppm		10	3	200	200	8	15	GC-FID	ST	226-01	35				
1,2-Dichloroethane (ethylene dichloride)	72, 80	5 ppm (21 mg/m ³)		24		50		8		GC-ECD	ST	226-358	39				
1,2-Dichloroethane (ethylene dichloride)	88	5 ppm (21 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	64				
1,2-Dichloroethane (ethylene dichloride)	96	5 ppm (21 mg/m ³)		10	3	20	200	8	15	GC-FID	ST	226-01	35				
1,2-Dichloroethylene cis:trans isomers 60:40	88	200 ppm (806 mg/m ³)	250 ppm (1010 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	64				
1,2-Dichloroethylene cis:trans isomers 60:40	96	200 ppm (806 mg/m ³)	250 ppm (1010 mg/m ³)	5		50		100 min		GC-FID	ST	226-01	35				
Dichlorofluoromethane	96	10 ppm (43 mg/m ³)		3		20		2.5		GC-FID	ST	226-01	35				
Dichloromethane	72, 80	100 ppm (350 mg/m ³)	300 ppm (1060 mg/m ³)	24		50		8		GC-ECD	ST	226-358	39				
Dichloromethane	88	100 ppm (350 mg/m ³)	300 ppm (1060 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	64				
Dichloromethane	96	100 ppm (350 mg/m ³)	300 ppm (1060 mg/m ³)	2	1.5	20	100	1.6	15	GC-FID	ST	226-01	35				
Dicyclohexyl phthalate	32	5 mg/m ³		50		100		8		GC-FID	ST	226-35	✓	35			
Dicylopentadiene	88	5 ppm (27 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	64				
Diethyl ether	88	100 ppm (310 mg/m ³)	200 ppm (620 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	64				
Diethyl ether	96	100 ppm (310 mg/m ³)	200 ppm (620 mg/m ³)	3		20		2.5		GC-FID	ST	226-01	35				
Diethyl phthalate	32	5 mg/m ³	10 mg/m ³	50		100		8		GC-FID	ST	226-35	✓	35			
Diethyl sulphate	89	0.05 ppm (0.32 mg/m ³)								GC-MS	ST	226-357	39				
Diethylamine	96	5 ppm (15 mg/m ³)	10 ppm (30 mg/m ³)	24	3	50	200	8	15	GC-FID	ST	226-10	35				
Dihydrogen selenide (as Se)	See OSHA CSI	0.02 ppm (0.07 mg/m ³)	0.05 ppm (0.17 mg/m ³)	480		1000		8		AA	IMP	225-36-2	59	IMP	225-36-5	59	
										IT	225-22	59					
Diisobutyl phthalate	32	5 mg/m ³		50		100		8		GC-FID	ST	226-35	✓	35			
Diisodecyl phthalate	32	5 mg/m ³		50		100		8		GC-FID	ST	226-35	✓	35			
Diisononyl phthalate	32	5 mg/m ³		50		100		8		GC-FID	ST	226-35	✓	35			
Diisooctyl phthalate	32	5 mg/m ³		50	50	100	500	8	100	GC-FID	ST	226-35	✓	35			
Diisopropyl ether	88	250 ppm (1060 mg/m ³)	310 ppm (1310 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	64				
Diisopropyl ether	96	250 ppm (1060 mg/m ³)	310 ppm (1310 mg/m ³)	3		20		2.5		GC-FID	ST	226-01	35				
Diisopropylamine	See OSHA CSI	5 ppm (21 mg/m ³)		120		1000		1		GC-ECD	IMP	225-36-2	59	IT	225-22	59	
Dimethoxymethane	88	1000 ppm (3160 mg/m ³)	1250 ppm (3950 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	64				
Dimethoxymethane	96	1000 ppm (3160 mg/m ³)	1250 ppm (3950 mg/m ³)	2		20		1.5		GC-FID	ST	226-01	35				
Dimethyl ether		400 ppm (766 mg/m ³)	500 ppm (958 mg/m ³)							CLR	DT	810-161					
Dimethyl phthalate	See OSHA 104	5 mg/m ³	10 mg/m ³	240		1000		4		GC-FID	ST	226-56	36				
Dimethyl sulphate	89	0.05 ppm (0.32 mg/m ³)								GC-MS	ST	226-357	39				
Dimethyl sulphate	96	0.05 ppm (0.26 mg/m ³)		12		50		4		GC-ECD	ST	226-114	37				
N,N-Dimethylacetamide	96	10 ppm (36 mg/m ³)	20 ppm (72 mg/m ³)	48		100		8		GC-FID	ST	226-10	35				

See page 196 for abbreviations.

Chemical Hazard	MDHS Method No.	SAMPLING								Analytical Method	SKC Collecting Equipment and Page No.		
		WEL		Vol. (liter)		Rate (ml/min)		Time					
		TWA (ppm)	STEL (ppm)	TWA	STEL	TWA	STEL	TWA (hr)	STEL (min)				
Dimethylamine	96	2 ppm (3.8 mg/m ³)	6 ppm (11 mg/m ³)							GC-FID	ST	226-10	35
2-Dimethylaminoethanol	See OSHA CSI	2 ppm (7.4 mg/m ³)	6 ppm (22 mg/m ³)	24		200		8		GC-FID	ST	226-10-04	35
N,N-Dimethylaniline	88	5 ppm (25 mg/m ³)	10 ppm (50 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	64
N,N-Dimethylaniline	96	5 ppm (25 mg/m ³)	10 ppm (50 mg/m ³)	24	3	50	200	8	15	GC-FID	ST	226-10	35
N,N-Dimethylethylamine	See OSHA PV2096	10 ppm (30 mg/m ³)	15 ppm (46 mg/m ³)	40		100		40 min		GC-NPD	ST	226-18	35
Dimethylformamide	88	5 ppm (15 mg/m ³)	10 ppm (30 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	64
2,6-Dimethylheptan-4-one	88	25 ppm (148 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	64
2,6-Dimethylheptan-4-one	96	25 ppm (148 mg/m ³)		10		20(50)		8(3.3)		GC-FID	ST	226-01	35
Dinitrobenzene (all isomers)	See OSHA CSI	0.15 ppm (1 mg/m ³)	0.5 ppm (3.5 mg/m ³)	60		1000		1		HPLC-UV	ST	226-30-16	35
Dinonyl phthalate	32	5 mg/m ³		50		100		8		GC-FID	ST	226-35	√ 35
1,4-Dioxane	88	20 ppm (73 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	64
1,4-Dioxane	96	20 ppm (73 mg/m ³)		10		20		8		GC-FID	ST	226-01	35
Diphenyl ether (vapour)	88	1 ppm (7.1 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	64
Diphenyl ether (vapour)	96	1 ppm (7.1 mg/m ³)		30		100		5		GC-FID	ST	226-35-01	35
Diphenylamine	See OSHA 78	10 mg/m ³	20 mg/m ³	100		1000		100 min		HPLC-UV	CF/CST	225-9004	61 C/HLD 225-1 87
Diphosphorus pentasulphide	See OSHA ID-128SG	1 mg/m ³	2 mg/m ³	960	30	2000	2000	8	15	IC	F/CST	225-802	73 C/HLD 225-1 87
Diphosphorus pentoxide	See OSHA ID-111	1 mg/m ³	2 mg/m ³	480		1000		8		IC	F/CST	225-3-01	77 C/HLD 225-1 87
Dipropylene glycol methyl ether	72	50 ppm (308 mg/m ³)		24		50		8		GC-ECD	ST	226-357	or ST 226-358 39
Dipropylene glycol methyl ether	88	50 ppm (308 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	64
Diquat dibromide (ISO)	See OSHA CSI	0.5 mg/m ³	1 mg/m ³	120		1000		8		HPLC/UV	IOM	225-70A	92 FLT 225-58F 79
Disodium disulphite	See OSHA ID-121	5 mg/m ³		960		2000		8		AA or AES	F/CST	225-3-01	77 C/HLD 225-1 87
Disodium tetraborate (anhydrous)	See OSHA ID-125G	1 mg/m ³		480		2000		4		ICP-AES	F/CST	225-3-01	or F/CST 225-3100 77
Disodium tetraborate (decahydrate)	See OSHA ID-125G	5 mg/m ³		480		2000		4		ICP-AES	F/CST	225-3-01	or F/CST 225-3100 77
Disodium tetraborate (pentahydrate)	See OSHA ID-125G	1 mg/m ³		480		2000		4		ICP-AES	F/CST	225-3-01	or F/CST 225-3100 77
Disulphur dichloride	See OSHA CSI		1 ppm (5.6 mg/m ³)	480		1000		8		CLR	IMP	225-36-2	59 IT 225-22 59
Diuron (ISO)	See NIOSH 5801	10 mg/m ³		240		1000		4		HPLC-UV	ST	226-58	or ST 226-30-16 35
Dusts (inhalable)	14/3			960		2000		8		GR	IOM	225-70A	92 FLT 225-58F 79
Dusts (respirable)	14/3			1056		2000	(2200)	8		GR	IOM	225-70A	92 FLT 225-58F 79
										FOAM	225-772	or CYC 225-69 95	
										FLT	225-58F	79	
Emery (inhalable dust)	14/3	10 mg/m ³		960		2000		8		GR	IOM	225-70A	92 FLT 225-58F 79
Emery (respirable dust)	14/3	4 mg/m ³		1056		2200		8		GR	CYC	225-69	95 FLT 225-58F or IOM 225-70A 92 FOAM 225-772 92
										FLT	225-58F	79	
Endosulfan (ISO)	94	0.1 mg/m ³	0.3 mg/m ³	240		500		8		HPLC-UV	IOM	225-70A	92 FLT 225-58F 79
										ST	226-35	35	
Enflurane	80	50 ppm (383 mg/m ³)		24		50		8		GC-ECD	ST	226-357	39
Enflurane	88	50 ppm (383 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	64
Ethane-1,2-diol (particulate)	14/3	10 mg/m ³		960		2000		8		GR	IOM	225-70A	92 FLT 225-58F 79
Ethane-1,2-diol (vapour)	88	20 ppm (52 mg/m ³)	40 ppm (104 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	64
Ethanethiol	See NIOSH 2542	0.5 ppm (1.3 mg/m ³)	2 ppm (5.2 mg/m ³)	48	12	100	200	8	60	GC-FPD	F/CST	225-9007	61
Ethanol	72	1000 ppm (1920 mg/m ³)		24		50		8		GC-ECD	ST	226-358	39
Ethanol	88	1000 ppm (1920 mg/m ³)		diffusive	diffusive	diffusive	diffusive	8	15	GC-FID	PS	575-002	64
Ethanol	96	1000 ppm (1920 mg/m ³)		1		50		20 min		GC-FID	ST	226-01	35
2-(Methoxyethoxy) ethanol	See OSHA CSI	10 ppm (50.1 mg/m ³)		6		100		1		GC-FID	ST	226-01	35
2-Ethoxyethanol	72	2 ppm (8 mg/m ³)		24		50		8		GC-ECD	ST	226-357	39
2-Ethoxyethanol	80	2 ppm (8 mg/m ³)		24		50		8		GC-ECD	ST	226-357	39
2-Ethoxyethanol	88	2 ppm (8 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	64
2-Ethoxyethanol	96	2 ppm (8 mg/m ³)		5		20		4		GC-FID	ST	226-01	35
2-Ethoxyethyl acetate	72	2 ppm (11 mg/m ³)		24		50		8		GC-ECD	ST	226-357	39
2-Ethoxyethyl acetate	80	2 ppm (11 mg/m ³)		24		50		8		GC-ECD	ST	226-357	or ST 226-358 39
2-Ethoxyethyl acetate	88	2 ppm (11 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	64
Ethyl acetate	72, 80	200 ppm	400 ppm	24		50		8		GC-ECD	ST	226-357	or ST 226-358 39
Ethyl acetate	88	200 ppm	400 ppm	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	64
Ethyl acetate	96	200 ppm	400 ppm	10		20		8		GC-FID	ST	226-01	35
Ethyl acrylate	72	5 ppm (21 mg/m ³)	10 ppm (42 mg/m ³)	24		50		8		GC-ECD	ST	226-357	39
Ethyl acrylate	88	5 ppm (21 mg/m ³)	10 ppm (42 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	64
Ethyl acrylate	96	5 ppm (21 mg/m ³)	10 ppm (42 mg/m ³)	10		20		8		GC-FID	ST	226-01	35
Ethyl benzene	72	100 ppm (441 mg/m ³)	125 ppm (552 mg/m ³)	24		50		8		GC-ECD	ST	226-357	39
Ethyl benzene	80	100 ppm (441 mg/m ³)	125 ppm (552 mg/m ³)	24		50		8		GC-ECD	ST	226-357	39
Ethyl benzene	88	100 ppm (441 mg/m ³)	125 ppm (552 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	64
Ethyl benzene	96	100 ppm (441 mg/m ³)	125 ppm (552 mg/m ³)	12		50		4		GC-FID	ST	226-01	35
Ethyl cyanoacrylate	See OSHA 55	0.3 ppm (1.5 mg/m ³)		12		100		2		HPLC-UV	ST	226-98	37
Ethyl formate	96	100 ppm (308 mg/m ³)	150 ppm (462 mg/m ³)	10		20		8		GC-FID	ST	226-01	35
Ethylamine	See OSHA 36	2 ppm (3.8 mg/m ³)	6 ppm (11 mg/m ³)	10		200		50 min		HPLC-UV	ST	226-96	37
Ethylene oxide	88	5 ppm (9.2 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-005	64
Ethylene oxide	96	5 ppm (9.2 mg/m ³)								GC-FID	ST	226-01	35
Ethylenediamine	See NIOSH 2540	1 ppm (4.3 mg/m ³)		10		100		1.7		HPLC-UV	ST	226-30-18	35

See page 196 for abbreviations.

Chemical Hazard	MDHS Method No.	SAMPLING								Analytical Method	SKC Collecting Equipment and Page No.							
		WEL		Vol. (liter)		Rate (ml/min)		Time										
		TWA (ppm)	STEL (ppm)	TWA	STEL	TWA	STEL	TWA (hr)	STEL (min)									
2-Ethylhexyl chloroformate	Contact SKC Ltd	1 ppm (8 mg/m ³)																
bis-2-Ethylhexyl phthalate (dioctyl phthalate)	32	5 mg/m ³	10 mg/m ³	50	50	100	500	8	100	GC-FID	ST	226-35	√	35				
bis-2-Ethylhexyl phthalate (dioctyl phthalate)	96	5 mg/m ³	10 mg/m ³	50		10		8		GC-FID	ST	226-10	¶	36				
4-Ethylmorpholine	See OSHA CSI	5 ppm (24 mg/m ³)	20 ppm (96 mg/m ³)	10		20		8		GC-FID	ST	226-10		35				
Ferrous foundary particulate (inhalable)	14/3	10 mg/m ³		960		2000		8		GR	IOM	225-70A	92	FLT	225-58F	79		
Ferrous foundary particulate (respirable)	14/3	4 mg/m ³		1056		2200 (2000)		8		GR	CYC IOM FLT	225-69 225-70A 225-58F	95 92	FLT FOAM	225-58F 225-772	79 92		
Flour dust	14/3	10 mg/m ³	30 mg/m ³			2000	2000	8	15	GR	IOM	225-70A	92	FLT	225-58F	79		
Fluoride (inorganic as F)	35/2	2.5 mg/m ³		960	30	2000	2000	8	15	IC	IOM	225-70A	92	FLT	225-19 †	76		
Fluorine	See OSHA CSI	1 ppm (1.6 mg/m ³)	1 ppm (1.6 mg/m ³)	480		1000		8		CLR	IMP	225-36-2	59	IMP	225-36-5	59		
										IT		225-22		59				
Formaldehyde	102	2 ppm (2.5 mg/m ³)	2 ppm (2.5 mg/m ³)	varies		varies		varies		HPLC	CF/CST ST	225-9003 226-120	or	ST	226-119	or		
Formaldehyde	78	2 ppm (2.5 mg/m ³)	2 ppm (2.5 mg/m ³)	diffusive	diffusive	diffusive	diffusive			HPLC	PS	500-100		67				
Formamide	See OSHA CSI	20 ppm (37 mg/m ³)	30 ppm (56 mg/m ³)	10	1.5	100	100	100 min	100 min	GC-NPD	ST	226-10		35				
Formic acid	See NIOSH 2011	5 ppm (9.6 mg/m ³)		24		200		2		IC-ECN	FLT	225-2708	74	CST	225-325LF	86		
										ST		226-10-03	35	C/HLD	225-1	87		
2-Furaldehyde (furfural)	72	2 ppm (8 mg/m ³)	5 ppm (20 mg/m ³)	24		50		8		GC-ECD	ST	226-357		39				
2-Furaldehyde (furfural)	See OSHA 72	2 ppm (8 mg/m ³)	5 ppm (20 mg/m ³)	10		20		8		GC-FID	ST	226-81A	or	ST	226-118	37		
Germane	See OSHA CSI	0.2 ppm (0.64 mg/m ³)	0.6 ppm (1.9 mg/m ³)	48		200		4		AA-GF	ST	226-01		35				
Glutaraldehyde	102	0.05 ppm (0.2 mg/m ³)	0.05 ppm (0.2 mg/m ³)	varies		varies		varies		HPLC	CF/CST ST	225-9003 226-120	or	ST	226-119	or		
Glutaraldehyde	102	0.05 ppm (0.2 mg/m ³)	0.05 ppm (0.2 mg/m ³)	diffusive	diffusive	diffusive	diffusive			HPLC	PS	500-100		67				
Glutaraldehyde	93	0.05 ppm (0.2 mg/m ³)	0.05 ppm (0.2 mg/m ³)			200				HPLC	CF/CST	225-9003	61	C/HLD	225-1	87		
Glycerol mist	See NIOSH 0600	10 mg/m ³		375		2500		2.5		GR	CYC CST	225-01-02 225-3LF	95 86	FLT C/HLD	225-8-01 225-1	73 87		
Grain dust	14/3	10 mg/m ³		960		2000		8		GR	IOM	225-70A	92	FLT	225-58F	79		
Graphite (inhalable dust)	14/3	10 mg/m ³		960		2000		8		GR	IOM	225-70A	92	FLT	225-58F	79		
Graphite (respirable dust)	14/3	4 mg/m ³		1056		2200		8		GR	CYC IOM FLT	225-69 225-70A 225-58F	95 92	FLT FOAM	225-58F 225-772	79 92		
Gypsum (inhalable dust)	14/3	10 mg/m ³		960		2000		8		GR	IOM	225-70A	92	FLT	225-58F	79		
Gypsum (respirable dust)	14/3	4 mg/m ³		1056		2200		8		GR	CYC IOM FLT	225-69 225-70A 225-58F	95 92	FLT FOAM	225-58F 225-772	79 92		
Halogeno platinum compounds as Pt	91	0.002 mg/m ³		30		50		8		AAS	IOM	225-70A	92	FLT	225-19	76		
Halothane	80	10 ppm (82 mg/m ³)		24		50		8		GC-ECD	ST	226-357	or	ST	226-358	39		
Halothane	88	10 ppm (82 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002		64				
Hardwood dust	14/3	5 mg/m ³								GR	IOM	225-70A	92	FLT	225-58F	79		
Heptan-2-one	88	50 ppm (237 mg/m ³)	100 ppm (475 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002		64				
Heptan-2-one	96	50 ppm (237 mg/m ³)	100 ppm (475 mg/m ³)							GC-FID	ST	226-01		35				
Heptan-3-one	88	35 ppm (166 mg/m ³)	100 ppm (475 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	or	PS	575-002	64		
Heptan-3-one	96	35 ppm (166 mg/m ³)	100 ppm (475 mg/m ³)							GC-FID	ST	226-01		35				
n-Heptane	72, 80	500 ppm (2085 mg/m ³)								GC-FID	ST	226-357		39				
n-Heptane	88	500 ppm (2085 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001		64				
n-Heptane	96	500 ppm (2085 mg/m ³)								GC-FID	ST	226-01		35				
Hexan-2-one	88	5 ppm (21 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002		64				
Hexan-2-one	96	5 ppm (21 mg/m ³)		10		20		8		GC-FID	ST	226-01		35				
n-Hexane	72	20 ppm (72 mg/m ³)		24		50		8		GC-ECD	ST	226-357		39				
n-Hexane	80	20 ppm (72 mg/m ³)		24		50		8		GC-ECD	ST	226-358		39				
n-Hexane	88	20 ppm (72 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001		64				
n-Hexane	96	20 ppm (72 mg/m ³)		4		20		3.3		GC-FID	ST	226-01		35				
1,6-Hexanolactam (dust & vapour)	See OSHA PV2012	10 mg/m ³	20 mg/m ³	100	15	1000	1000	8	15	HPLC-UV	ST	226-57		36				
1,6-Hexanolactam (dust only)	14/3	1 mg/m ³	3 mg/m ³	1056		2000 (2200)		8		GR	IOM CYC	225-70A 225-69	92 95	FOAM FLT	225-772 225-58F	79 79		
Hydrazine	86	0.02 ppm (0.03 mg/m ³)	0.1 ppm (0.13 mg/m ³)	240		1000		4		IC-UV	CF/CST	225-9012	61	C/HLD	225-1	87		
Hydrogen bromide	See OSHA ID-16SSG		3 ppm (10 mg/m ³)	48	4.5	200	300	4	15	IC	ST	226-10-03		35				
Hydrogen chloride (gas & aerosol mists)	See OSHA ID-174SG	1 ppm (2 mg/m ³)	5 ppm (8 mg/m ³)	48	4.5	200	300	4	15	IC	ST	226-10-03		35				
Hydrogen cyanide	56/2		10 ppm (11 mg/m ³)	40	15	200	1000	3	15	ISE	IMP IOM	225-36-2 225-70A	59 92	IT FLT	225-22 225-19	59 76		
Hydrogen fluoride (as F)	35/2	1.8 ppm (1.5 mg/m ³)	3 ppm (2.5 mg/m ³)		30		2000		15	ISE	IOM	225-70A	92	FLT	225-19 †	76		
Hydrogen peroxide	See OSHA ID-126SG	1 ppm (1.4 mg/m ³)	2 ppm (2.8 mg/m ³)	100				100 min		DPP	IMP IT	225-36-2 225-22	59	IMP	225-36-5	59		
Hydrogen sulphide	See OSHA 1008	5 ppm (7 mg/m ³)	10 ppm (14 mg/m ³)							IC	ST	226-177		38				
Hydroquinone	98/2 See OSHA 5004	0.5 mg/m ³			30		2000		15	HPLC-UV	IOM ST	225-70A 226-35-03	92	FLT	225-58F	79		
4-Hydroxy-4-methylpentan-2-one	88	50 ppm (241 mg/m ³)	75 ppm (362 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002		64				
4-Hydroxy-4-methylpentan-2-one	96	50 ppm (241 mg/m ³)	75 ppm (362 mg/m ³)	10		20		8		GC-FID	ST	226-01		35				
2-Hydroxypropyl acrylate	See OSHA PV2078	0.5 ppm (2.7 mg/m ³)		10		100		100 min		GC-FID	ST	226-73		36				
Indene	See OSHA CSI	10 ppm (48 mg/m ³)	15 ppm (72 mg/m ³)	10		20		8		GC-FID	ST	226-110		37				
Indium & compounds (as In)	91	0.1 mg/m ³	0.3 mg/m ³	960		2000		8		XRF	IOM	225-70A	92	FLT	225-19	76		

See page 196 for abbreviations.

Chemical Hazard	MDHS Method No.	SAMPLING								Analytical Method	SKC Collecting Equipment and Page No.							
		WEL		Vol. (liter)		Rate (ml/min)		Time										
		TWA (ppm)	STEL (ppm)	TWA	STEL	TWA	STEL	TWA (hr)	STEL (min)									
Iodine	See NIOSH 6005		0.1 ppm (1.1 mg/m ³)	15		1000				15		IC	ST	226-67	36			
Iodoform	See OSHA CSI	0.6 ppm (9.8 mg/m ³)	1 ppm (16 mg/m ³)	10		100				100 min		GC-ECD	F/CST	225-706	79	C/HLD	225-1	87
Iodomethane	88	2 ppm (12 mg/m ³)			diffusive	diffusive	diffusive	diffusive				GC-FID	PS	575-001	64			
Iodomethane	96	2 ppm (12 mg/m ³)		10		20				8		GC-FID	ST	226-01	35			
Iron oxide (fume) (as Fe)	91	5 mg/m ³	10 mg/m ³	960		2000				8		XRF	IOM	225-70A	92	FLT	225-19	76
Iron salts (as Fe)	91	1 mg/m ³	2 mg/m ³	960		2000				8		XRF	IOM	225-70A	92	FLT	225-19	76
Isobutyl acetate	72	150 ppm (724 mg/m ³)	187 ppm (903 mg/m ³)	24		50				8		GC-ECD	ST	226-357	39			
Isobutyl acetate	88	150 ppm (724 mg/m ³)	187 ppm (903 mg/m ³)	diffusive	diffusive	diffusive	diffusive					GC-FID	PS	575-002	64			
Isobutyl acetate	96	150 ppm (724 mg/m ³)	187 ppm (903 mg/m ³)	10		20				8		GC-FID	ST	226-01	35			
Isocyanates (all) (as -NCO)	25/3	0.02 mg/m ³	0.07 mg/m ³	960		2000				8		HPLC	IOM	225-79A	92	FLT	225-9011	61
Isoflurane	80	50 ppm (383 mg/m ³)		24		50				8		GC-ECD	ST	226-357	39			
Isoflurane	88	50 ppm (383 mg/m ³)		diffusive	diffusive	diffusive	diffusive					GC-FID	PS	575-002	64			
Isooctyl alcohol (mixed isomers)	88	50 ppm (271 mg/m ³)		diffusive	diffusive	diffusive	diffusive					GC-FID	PS	575-002	64			
Isopentane	88	600 ppm (1800 mg/m ³)		diffusive	diffusive	diffusive	diffusive					GC-FID	PS	575-002	64			
Isopentane	96	600 ppm (1800 mg/m ³)		varies		varies		varies				GC-FID	ST	226-01	35			
Isopropyl acetate	72		200 ppm (849 mg/m ³)	24		50				8		GC-ECD	ST	226-357	39			
Isopropyl acetate	88		200 ppm (849 mg/m ³)	diffusive	diffusive	diffusive	diffusive					GC-FID	PS	575-001	64			
Isopropyl acetate	96		200 ppm (849 mg/m ³)	9		50				3		GC-FID	ST	226-01	35			
Isopropyl chloroformate	Contact SKC Ltd.	1 ppm (5.1 mg/m ³)																
Kaolin (respirable dust)	14/3	2 mg/m ³		1056		varies				8		GR	CYC	225-69	95	FLT	225-58F	or
												IOM	225-70A	92	FOAM	225-772	92	
												FLT	225-58F	79				
Ketene	See OSHA CSI	0.5 ppm (0.87 mg/m ³)	1.5 ppm (2.6 mg/m ³)	50	15	1000	1000	50 min	15			CLR	IMP	225-36-2	59	IMP	225-36-5	59
												IT	225-22	59				
Lead & inorganic compounds	6/3			960	30	2000	2000	8	15			AAS	IOM	225-70A	92	FLT	225-19	76
Lead & inorganic compounds	91			960	30	2000	2000	8	15			XRF	IOM	225-70A	92	FLT	225-19	76
Limestone (inhalable dust)	14/3	10 mg/m ³		960		2000		8				GR	IOM	225-70A	92	FLT	225-58F	79
Limestone (respirable dust)	14/3	4 mg/m ³		1056		2200		8				GR	CYC	225-69	95	FLT	225-58F	or
												IOM	225-70A	92	FOAM	225-772	92	
												FLT	225-58F	79				
Liquified petroleum gas	See OSHA CSI	1000 ppm (1750 mg/m ³)	1250 ppm (2180 mg/m ³)									DET TB	DT	810-100A				
Lithium hydride	14/3	0.025 mg/m ³		1056		2200		8				GR	CYC	225-69	95	FLT	225-58F	or
												IOM	225-70A	92	FOAM	225-772	92	
												FLT	225-58F	79				
Lithium hydroxide	See OSHA ID-121		1 mg/m ³	960		2000		8				AA or AES	F/CST	225-3-01	77	C/HLD	225-1	87
Machine made mineral fibre (MMMF) (except for ceramic refractory)	59	5 mg/m ³ & 2 fibres/ml		240		1000		8				GR + PCM	FLT/CL	225-54	92	FLT	225-1913	76
Magnesite (inhalable dust)	14/3	10 mg/m ³		960		2000		8				GR	IOM	225-70A	92	FLT	225-58F	79
Magnesite (respirable dust)	14/3	4 mg/m ³		1056		2200		8				GR	CYC	225-69	95	FLT	225-58F	or
												IOM	225-70A	92	FOAM	225-772	92	
												FLT	225-58F	79				
Magnesium oxide (as Mg) (inhalable dust)	14/3	10 mg/m ³		960		2000		8				GR	IOM	225-70A	92	FLT	225-58F	79
Magnesium oxide (as Mg) (respirable dust)	14/3	4 mg/m ³		1056		2200		8				GR	CYC	225-69	95	FLT	225-58F	or
												IOM	225-70A	92	FOAM	225-772	92	
												FLT	225-58F	79				
Malathion	See OSHA 62	10 mg/m ³		60		1000		1				GC-FPD	ST	226-30-16	35			
Maleic anhydride	72	1 mg/m ³	3 mg/m ³	24		50		8				GC-ECD	ST	226-357	39			
Manganese & inorganic compounds	91	0.5 mg/m ³		960		2000		8				XRF	IOM	225-70A	92	FLT	225-19	76
Manganese in welding fume	See ISO 10882-1	0.5 mg/m ³				750						GR	H/SET	225-6200	89	MINI	225-6201	89
												CAL	225-6202	89	FLT	225-8050	89	
Marble (total inhalable)	14/3	10 mg/m ³		960		2000		8				GR	IOM	225-70A	92	FLT	225-58F	79
Marble (total respirable)	14/3	4 mg/m ³		1056		2200		8				GR	CYC	225-69	95	FLT	225-58F	or
												IOM	225-70A	92	FOAM	225-772	92	
												FLT	225-58F	79				
Mercaptoacetic acid	See OSHA CSI	1 ppm (3.8 mg/m ³)		120		1000		2				HPLC-UV	IMP	225-36-1	59	IT	225-22	59
Mercury & compounds (except alkyl compounds)	See NIOSH 6009	0.02 mg/m ³		48		200		4				AA	ST	226-17-1A	35	F/CST	225-3-01	77
Methacrylic acid	See OSHA PV2005	20 ppm (72 mg/m ³)	40 ppm (143 mg/m ³)	24		100		4				HPLC-UV	ST	226-30-08	35			
Methanethiol	See OSHA 26	0.5 ppm (1 mg/m ³)		20		200		100 min				GC-FPD	F/CST	225-9007	59	C/HLD	225-1	87
Methanol	72	200 ppm (266 mg/m ³)	250 ppm (333 mg/m ³)	24		50		8				GC-ECD	ST	226-358	39			
Methanol	80	200 ppm (266 mg/m ³)	250 ppm (333 mg/m ³)	24		50		8				GC-ECD	ST	226-357	39			
Methanol	96	200 ppm (266 mg/m ³)	250 ppm (333 mg/m ³)	5	3	20	200	4	15			GC-FID	ST	226-51	36			
2-Methoxyethanol	72, 80	1 ppm (3 mg/m ³)		24		50		8				GC-ECD	ST	226-358	39			
2-Methoxyethanol	88	1 ppm (3 mg/m ³)		diffusive	diffusive	diffusive	diffusive					GC-FID	PS	575-002	64			
2-Methoxyethanol	96	1 ppm (3 mg/m ³)		10		20		8				GC-FID	ST	226-01	35			
2-Methoxyethyl acetate	72	1 ppm (5 mg/m ³)		8		15		8				GC-FID	ST	226-37	36			
2-Methoxyethyl acetate	88	1 ppm (5 mg/m ³)		diffusive	diffusive	diffusive	diffusive					GC-FID	PS	575-002	or	PS	575-001	64
2-Methoxyethyl acetate	96	1 ppm (5 mg/m ³)		10	7.5	20	500	8	15			GC-FID	ST	226-01	35			
1-Methoxypropan-2-ol	72	100 ppm (375 mg/m ³)	150 ppm (560 mg/m ³)									GC-FID	ST	226-357	39			
1-Methoxypropan-2-ol	88	100 ppm (375 mg/m ³)	150 ppm (560 mg/m ³)	diffusive	diffusive	diffusive	diffusive					GC-FID	PS	575-002	64			
1-Methoxypropyl acetate	72	50 ppm (274 mg/m ³)	100 ppm (548 mg/m ³)									GC-FID	ST	226-358	35			
1-Methoxypropyl acetate	88	50 ppm (274 mg/m ³)	100 ppm (548 mg/m ³)	diffusive	diffusive	diffusive	diffusive					GC-FID	PS	575-001	64			

See page 196 for abbreviations.

Chemical Hazard	MDHS Method No.	SAMPLING								Analytical Method	SKC Collecting Equipment and Page No.					
		WEL		Vol. (liter)		Rate (ml/min)		Time								
		TWA (ppm)	STEL (ppm)	TWA	STEL	TWA	STEL	TWA (hr)	STEL (min)							
1-Methoxypropyl acetate	96	50 ppm (274 mg/m ³)	100 ppm (548 mg/m ³)							GC-FID	ST	226-01	35			
Methyl acetate	72, 80	200 ppm (616 mg/m ³)	250 ppm (770 mg/m ³)	24		50		8		GC-ECD	ST	226-358	39			
Methyl acetate	88	200 ppm (616 mg/m ³)	250 ppm (770 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	64			
Methyl acetate	96	200 ppm (616 mg/m ³)	250 ppm (770 mg/m ³)	5	3	20	200	4	15	GC-FID	ST	226-01	35			
Methyl acrylate	72	5 ppm (18 mg/m ³)	10 ppm (36 mg/m ³)	24		50		8		GC-FID	ST	226-357	39			
Methyl acrylate	88	5 ppm (18 mg/m ³)	10 ppm (36 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	64			
Methyl acrylate	96	5 ppm (18 mg/m ³)	10 ppm (36 mg/m ³)	varies		varies		varies		GC-FID	ST	226-01	35			
Methyl cyanoacrylate	See OSHA 55		0.3 ppm (1.4 mg/m ³)	12	3	100	200	8	15	HPLC-UV	ST	226-98	37			
Methyl ethyl ketone peroxide (MEKP)	See OSHA 77		0.2 ppm (1.5 mg/m ³)		15		1000		15	HPLC-UV	ST	226-93	37			
Methyl isocyanate	See OSHA 54		0.02 ppm	15		50		5		HPLC-FD	ST	NA SKC				
Methyl methacrylate	72	50 ppm (208 mg/m ³)	100 ppm (416 mg/m ³)	24		50		8		GC-ECD	ST	226-357	39			
Methyl methacrylate	80	50 ppm (208 mg/m ³)	100 ppm (416 mg/m ³)	25		50		8		GC-ECD	ST	226-115	37			
Methyl methacrylate	88	50 ppm (208 mg/m ³)	100 ppm (416 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	64			
Methyl methacrylate	96	50 ppm (208 mg/m ³)	100 ppm (416 mg/m ³)	5		20		4		GC-FID	ST	226-30-06	35			
1-Methyl-2-pyrrolidone	72	25 ppm (103 mg/m ³)	75 ppm (309 mg/m ³)	24		50		8		GC-ECD	ST	226-357	39			
1-Methyl-2-pyrrolidone	96	25 ppm (103 mg/m ³)	75 ppm (309 mg/m ³)	10		200		8		GC-FID	ST	226-01	35			
N-Methyl-2-pyrrolidone	72, 80	10 ppm (40 mg/m ³)	20 ppm (80 mg/m ³)	24		50		8		GC-ECD	ST	226-357	39			
N-Methyl-2-pyrrolidone	96	10 ppm (40 mg/m ³)	20 ppm (80 mg/m ³)	10		200		8		GC-FID	ST	226-01	35			
Methyl-tert-butyl-ether	88	50 ppm (183.5 mg/m ³)	100 ppm (367 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	64			
Methyl-tert-butyl-ether	96	50 ppm (183.5 mg/m ³)	100 ppm (367 mg/m ³)	96		200		8		GC-FID	ST	226-09	35			
Methylacrylonitrile	See OSHA 37	1 ppm (2.8 mg/m ³)		20		200		100 min		GC-NPD	ST	226-01	35			
N-Methylaniline	See NIOSH 3511	0.5 ppm (2.2 mg/m ³)		100		1000		100 min		GC-FID	IMP	225-36-2	59	IMP	225-36-5	59
										IT		225-22	59			
3-Methylbutan-1-ol	88	100 ppm (366 mg/m ³)	125 ppm (458 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	64			
3-Methylbutan-1-ol	96	100 ppm (366 mg/m ³)	125 ppm (458 mg/m ³)	10	3	20(50)	200	8(3.3)	15	GC-FID	ST	226-01	35			
Methylcyclohexanol	88	50 ppm (237 mg/m ³)	75 ppm (356 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	64			
Methylcyclohexanol	96	50 ppm (237 mg/m ³)	75 ppm (356 mg/m ³)	12		25		8		GC-FID	ST	226-01	35			
2-Methylcyclohexanone	72, 80	50 ppm (233 mg/m ³)	75 ppm (350 mg/m ³)	24		50		8		GC-ECD	ST	226-357	39			
2-Methylcyclohexanone	96	50 ppm (233 mg/m ³)	75 ppm (350 mg/m ³)	4		20		3.3		GC-FID	ST	226-01	35			
4,4'-Methylenebis(orthochloroaniline) (MbOCA)	75			200		500				HPLC	IOM	225-70A	92	FLT	225-58F	or
										F/CST		225-9004	61			
4,4'-Methylenedianiline (MDA)	75	0.01 ppm (0.08 mg/m ³)		200		2000		100 min		HPLC	IOM	225-70A	92	FLT	225-58F	or
										F/CST		225-9004	61			
5-Methylheptane-3-one	88	10 ppm (53 mg/m ³)	20 ppm (107 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	or PS	575-002	64	
5-Methylheptane-3-one	96	10 ppm (53 mg/m ³)	20 ppm (107 mg/m ³)	10	3	20	200	8	15	GC-FID	ST	226-01	35			
5-Methylhexan-2-one	72	20 ppm (95 mg/m ³)	100 ppm (475 mg/m ³)	24		50		8		GC-ECD	ST	226-357	39			
5-Methylhexan-2-one	88	20 ppm (95 mg/m ³)	100 ppm (475 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	64			
4-Methylpentan-2-ol	88	25 ppm (106 mg/m ³)	40 ppm (170 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	64			
4-Methylpentan-2-ol	96	25 ppm (106 mg/m ³)	40 ppm (170 mg/m ³)	10	3	20	200	8	15	GC-FID	ST	226-01	35			
4-Methylpentan-2-one	72, 80	50 ppm (208 mg/m ³)	100 ppm (416 mg/m ³)	24		50		8		GC-ECD	ST	226-357	39			
4-Methylpentan-2-one	88	50 ppm (208 mg/m ³)	100 ppm (416 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	64			
4-Methylpentan-2-one	96	50 ppm (208 mg/m ³)	100 ppm (416 mg/m ³)	10	3	20	200	8	15	GC-FID	ST	226-01	35			
2-Methylpentane-2,4-diol	See OSHA PV2101	25 ppm (123 mg/m ³)	25 ppm (123 mg/m ³)		3		200		15	GC-FID	ST	226-01	35			
2-Methylpropan-1-ol	72	50 ppm (154 mg/m ³)	75 ppm (231 mg/m ³)	24		50		8		GC-ECD	ST	226-357	39			
2-Methylpropan-1-ol	88	50 ppm (154 mg/m ³)	75 ppm (231 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	64			
2-Methylpropan-1-ol	96	50 ppm (154 mg/m ³)	75 ppm (231 mg/m ³)	10		20(50)		8(3.3)		GC-FID	ST	226-01	35			
Mica (total inhalable)	14/3	10 mg/m ³		960		2000		8		GR	IOM	225-70A	92	FLT	225-58F	79
Mica (total respirable)	14/3	0.8 mg/m ³		1056		2200		8		GR	CYC	225-69	95	FLT	225-58F	or
										IOM	225-70A	92	FOAM	225-772	92	
										FLT		225-58F	79			
Molybdenum compounds (insoluble) (as Mo)	91	10 mg/m ³	20 mg/m ³	240		1000		8		XRF	IOM	225-70A	92	FLT	225-19	76
Molybdenum compounds (soluble) (as Mo)	91	5 mg/m ³	10 mg/m ³	240		1000		8		XRF	IOM	225-70A	92	FLT	225-19	76
Monochloroacetic acid	See NIOSH 2008	0.3 ppm (1.2 mg/m ³)		48		100		8		IC-ECN	ST	226-47-01	36			
Nickel (insoluble compounds except nickel tetracarbonyl) (as Ni)	42/2	0.5 mg/m ³		960	30	2000	2000	8	15	AA	IOM	225-70A	92	FLT	225-19	76
Nickel (insoluble compounds except nickel tetracarbonyl) (as Ni)	91	0.5 mg/m ³		960		2000		8		XRF	IOM	225-70A	92	FLT	225-19	76
Nickel (soluble compounds except nickel tetracarbonyl) (as Ni)	42/2	0.1 mg/m ³		960	30	2000	2000	8	15	AA	IOM	225-70A	92	FLT	225-19	76
Nickel (soluble compounds except nickel tetracarbonyl) (as Ni)	91	0.1 mg/m ³		960		2000		8		XRF	IOM	225-70A	92	FLT	225-19	76
Nicotine	96	0.5 mg/m ³	1.5 mg/m ³	360		1000		6		GC-NPD	ST	226-30-04	35			
Nitric acid	See NIOSH 7903		1 ppm (2.6 mg/m ³)	48	3	200	200	4	15	IC	ST	226-10-03	35			
Nitrobenzene	72	0.2 ppm (1 mg/m ³)		24		50		8		GC-ECD	ST	226-357	39			
Nitrobenzene	96	0.2 ppm (1 mg/m ³)		48		100		8		GC-FID	ST	226-10	35			
Nitrogen oxides	See NIOSH 6014			1.5-6		25		1-4		VIS	ST	226-40	36			
Nitromethane	See NIOSH 2527	100 ppm (254 mg/m ³)	150 ppm (381 mg/m ³)	2.4		20		2		GC-NSD	ST	226-111A	37			
2-Nitropropane	96	5 ppm (19 mg/m ³)				20		1.5		GC-FID	ST	226-110	37			
Nitrous oxide	88	100 ppm (183 mg/m ³)		diffusive	diffusive	diffusive	diffusive				PS	590-300	69	TD	P226530	
Oil mist	84			960	30	2000	2000	8	15	GR	IOM	225-70A	92	FLT	225-19	76
Orthophosphoric acid	See NIOSH 7903	1 mg/m ³	2 mg/m ³	48	3	200	200	4	15	IC	ST	226-10-03	35			

See page 196 for abbreviations.

Chemical Hazard	MDHS Method No.	SAMPLING								Analytical Method	SKC Collecting Equipment and Page No.					
		WEL		Vol. (liter)		Rate (ml/min)		Time								
		TWA (ppm)	STEL (ppm)	TWA	STEL	TWA	STEL	TWA (hr)	STEL (min)							
Orthotolidine	75			200		500					HPLC	IOM 225-70A ST 226-35	92 35	FLT 225-58F	79	
Osmium tetroxide (as Os)	91	0.0002 ppm (0.002 mg/m ³)	0.0006 ppm (0.006 mg/m ³)	960		2000		8			XRF	IOM 225-70A	92	FLT	225-19	76
Oxalic acid	See OSHA PV2115	1 mg/m ³	2 mg/m ³	100		1000		100 min			IC	F/CST 225-3-01	77	C/HLD	225-1	87
2,2'-Oxydiethanol	See NIOSH 5523	23 ppm (101 mg/m ³)		60		1000		1			GC-FID	ST 226-57	36			
Ozone	See OSHA ID-214		0.2 ppm (0.4 mg/m ³)	90		500		3			IC	CF/CST 225-9014	61	C/HLD	225-1	87
Paracetamol (inhalable dust)	14/3	10 mg/m ³		960		2000		8			GR	IOM 225-70A	92	FLT	225-58F	79
Paraffin wax (fume)	See OSHA PV2047	2 mg/m ³	6 mg/m ³	100		1000		100 min			GC-FID	F/CST 225-706	79	C/HLD	225-1	87
Paraquat dichloride (ISO) (respirable dust)	14/3	0.08 mg/m ³		1056		2200		8			GR	CYC 225-69 IOM 225-70A FLT 225-58F	95 92	FLT FOAM	225-58F 225-772	87 92
Pentacarbonyliron (as Fe)	See OSHA CSI	0.01 ppm (0.08 mg/m ³)		480	30	2000	2000	4	15		CLR	IMP 225-36-2 IT 225-22	59	IMP	225-36-5	59
Pentaerythritol (inhalable dust)	14/3	10 mg/m ³		960		2000		8			GR	IOM 225-70A	92	FLT	225-58F	79
Pentaerythritol (respirable dust)	14/3	4 mg/m ³		1056		2200 (2000)		8			GR	CYC 225-69 IOM 225-70A FLT 225-58F	95 92	FLT FOAM	225-58F 225-772	87 92
Pentan-2-one	88	200 ppm (716 mg/m ³)	250 ppm (895 mg/m ³)	diffusive	diffusive	diffusive	diffusive				GC-FID	PS 575-002	64			
Pentan-2-one	96	200 ppm (716 mg/m ³)	250 ppm (895 mg/m ³)	10		20(50)		8(3.3)			GC-FID	ST 226-01	35			
Pentan-3-one	88	200 ppm (716 mg/m ³)	250 ppm (895 mg/m ³)	diffusive	diffusive	diffusive	diffusive				GC-FID	PS 575-002	64			
Pentane	72, 80	600 ppm (1800 mg/m ³)		varies		varies		varies			GC-FID	ST 226-358	39			
Pentane	88	600 ppm (1800 mg/m ³)		diffusive	diffusive	diffusive	diffusive				GC-FID	PS 575-001	64			
Pentane	96	600 ppm (1800 mg/m ³)		varies		varies		varies			GC-FID	ST 226-01	35			
Pentyl acetates (all isomers)	88	50 ppm (270 mg/m ³)	100 ppm (541 mg/m ³)	diffusive	diffusive	diffusive	diffusive				GC-FID	PS 575-001	64			
Pentyl acetates (all isomers)	96	50 ppm (270 mg/m ³)	100 ppm (541 mg/m ³)	varies		varies		varies			GC-FID	ST 226-01	35			
Peroxodisulphate salts	79			960	30	2000	2000	8	15		IC	IOM 225-70A	92	FLT	225-19	76
Phenol	96	2 ppm (7.8 mg/m ³)	4 ppm (16 mg/m ³)	24	3	100	200	4	15		GC-FID	ST 226-95	37			
p-Phenyldiamine	See OSHA 87	0.1 mg/m ³		100		1000		100 min			HPLC-UV	CF/CST 225-9004	61	C/HLD	225-1	87
2-Phenylpropene (alpha-methyl styrene)	72	50 ppm (246 mg/m ³)	100 ppm (491 mg/m ³)	24		50		8			GC-ECD	ST 226-357	39			
2-Phenylpropene (alpha-methyl styrene)	88	50 ppm (246 mg/m ³)	100 ppm (491 mg/m ³)	diffusive	diffusive	diffusive	diffusive				GC-FID	PS 575-002	or PS 575-003			64
2-Phenylpropene (alpha-methyl styrene)	96	50 ppm (246 mg/m ³)	100 ppm (491 mg/m ³)	10	3	20	200	8	15		GC-FID	ST 226-01	35			
Phorate (ISO)	See NIOSH 5600	0.05 mg/m ³	0.2 mg/m ³	240		1000		4			GC-FPD	ST 226-58	36			
Phosgene	See OSHA 61	0.02 ppm (0.08 mg/m ³)	0.06 ppm (0.25 mg/m ³)	240		1000		4			GC-NPD	ST 226-117	37			
Phosphine	See NIOSH 6002	0.1 ppm (0.14 mg/m ³)	0.2 ppm (0.28 mg/m ³)	12	3	100	200	2	15		UV-VAS	ST 226-165A	38			
Phosphorus pentachloride	See OSHA CSI	0.1 ppm (0.87 mg/m ³)	0.2 ppm (2 mg/m ³)	48		200		4			CLR	F/CST 225-803 IT 225-22	73 59	IMP SCN	225-36-1 225-26	59 87
Phosphorus trichloride	See OSHA CSI	0.2 ppm (1.1 mg/m ³)	0.5 ppm (2.9 mg/m ³)	240		1000		4			IC	IMP 225-36-2 IT 225-22	59	IMP	225-36-5	59
Phosphorus yellow	See OSHA CSI	0.1 mg/m ³	0.3 mg/m ³	96		200		8			GC-FPD	ST 226-35-03	36			
Phthalic anhydride	62	4 mg/m ³	12 mg/m ³	960	30	2000	2000	8	15		HPLC	IOM 225-70A ST 226-35	92 35	FLT	225-58F	79
Picloram (ISO)	See OSHA PV2049	10 mg/m ³	20 mg/m ³	60		1000		1			GR	FLT 225-8-01	73	CST	225-3LF	86
Picric acid	See OSHA CSI	0.1 mg/m ³	0.3 mg/m ³	180		1500		2			HPLC-UV	IOM 225-70A	92	FLT	225-19	76
Piperazine	See OSHA CSI	0.1 mg/m ³	0.3 mg/m ³	10		100		8			HPLC-UV	ST 226-30-18	35			
Piperazine dihydrochloride	14/3	0.1 mg/m ³	0.3 mg/m ³	120		1000		8			GC-NPD	IOM 225-70A	92	FLT	225-58F	79
Piperidine	See OSHA CSI	1 ppm (3.5 mg/m ³)		6		200		30 min			GC-FID	ST 226-01	35			
Plaster of Paris (inhalable dust)	14/3	10 mg/m ³		960		2000		8			GR	IOM 225-70A	92	FLT	225-58F	79
Plaster of Paris (respirable dust)	14/3	4 mg/m ³		1056		2200		8			GR	CYC 225-69 IOM 225-70A FLT 225-58F	95 92	FLT FOAM	225-58F 225-772	87 92
Platinum (soluble compounds)	46/2	0.002 mg/m ³		960	120	2000	2000	8	60		AA	IOM 225-70A	92	FLT	225-19	76
Platinum as metal	46/2	5 mg/m ³		960	120	2000	2000	8	60		AA	IOM 225-70A	92	FLT	225-19	76
Polychlorinated biphenyls (PCB)	See ASTM 4861	0.1 mg/m ³		960		2000		8			GC-ECD	PUF 226-124	38	PUF	226-92	37
Polychlorinated biphenyls (PCB)	See OSHA PV2088	0.1 mg/m ³		60		1000		1			GC-ECD	ST 226-30-16	35			
Polyvinylchloride (inhalable dust)	14/3	10 mg/m ³		960		2000		8			GR	IOM 225-70A	92	FLT	225-58F	79
Polyvinylchloride (respirable dust)	14/3	4 mg/m ³		1056		2200		8			GR	CYC 225-69 IOM 225-70A FLT 225-58F	95 92	FLT FOAM	225-58F 225-772	87 92
Portland cement (inhalable dust)	14/3	10 mg/m ³		960		2000		8			GR	IOM 225-70A	92	FLT	225-58F	79
Portland cement (respirable dust)	14/3	4 mg/m ³		1056		2200		8			GR	CYC 225-69 IOM 225-70A FLT 225-58F	95 92	FLT FOAM	225-58F 225-772	87 92
Potassium hydroxide	14/3		2 mg/m ³	10		2000		5			AA or AES	IOM 225-70A	92	FLT	225-19	76
Prop-2-yn-1-ol	See OSHA 97	1 ppm (2.3 mg/m ³)	3 ppm (7 mg/m ³)	6		50		2			GC-ECD	ST 226-178	38			
Propan-1-ol	72	200 ppm (500 mg/m ³)	250 ppm (625 mg/m ³)	24		50		8			GC-ECD	ST 226-358	39			
Propan-1-ol	72	200 ppm (500 mg/m ³)	250 ppm (625 mg/m ³)	24		50		8			GC-ECD	ST 226-358	39			
Propan-1-ol	88	200 ppm (500 mg/m ³)	250 ppm (625 mg/m ³)	diffusive	diffusive	diffusive	diffusive				GC-FID	PS 575-001	or PS 575-002			64
Propan-1-ol	88	200 ppm (500 mg/m ³)	250 ppm (625 mg/m ³)	diffusive	diffusive	diffusive	diffusive				GC-FID	PS 575-001	or PS 575-002			64
Propan-1-ol	96	200 ppm (500 mg/m ³)	250 ppm (625 mg/m ³)	varies		varies		varies			GC-FID	ST 226-01	35			
Propan-1-ol	96	200 ppm (500 mg/m ³)	250 ppm (625 mg/m ³)	10	3	20(50)	200	8(3.3)	15		GC-FID	ST 226-01	35			
Propan-2-ol	72	400 ppm (999 mg/m ³)	500 ppm (1250 mg/m ³)	24		50		8			GC-ECD	ST 226-358	39			
Propan-2-ol	88	400 ppm (999 mg/m ³)	500 ppm (1250 mg/m ³)	diffusive	diffusive	diffusive	diffusive				GC-FID	PS 575-002	64			

See page 196 for abbreviations.

Chemical Hazard	MDHS Method No.	SAMPLING								Analytical Method	SKC Collecting Equipment and Page No.					
		WEL		Vol. (liter)		Rate (ml/min)		Time								
		TWA (ppm)	STEL (ppm)	TWA	STEL	TWA	STEL	TWA (hr)	STEL (min)							
Propan-2-ol	96	400 ppm (999 mg/m ³)	500 ppm (1250 mg/m ³)	3	3	20	200	2.5	15	GC-FID	ST	228-01	35			
Propane-1,2-diol (particulates)	14/3	10 mg/m ³		960		2000		8		GR	IOM	225-70A	92	FLT	225-58F	79
Propane-1,2-diol (total vapour & particulates)	See OSHA PV2051	150 ppm (474 mg/m ³)		60	15	1000	1000	1	15	GC-FID	ST	228-57	36			
Propionic acid	See OSHA CSI	10 ppm (31 mg/m ³)	15 ppm (46 mg/m ³)	10		20		8		GC-FID	ST	226-15	35			
Propoxur (ISO)	See NIOSH 5601	0.5 mg/m ³	2 mg/m ³	240		1000		4		HPLC-UV	ST	226-58	36			
Propranolol	14/3	2 mg/m ³	6 mg/m ³	960		2000		8		GR	IOM	225-70A	92	FLT	225-58F	79
n-Propyl acetate	72	200 ppm (849 mg/m ³)	250 ppm (1060 mg/m ³)	24		50		8		GC-ECD	ST	226-357	39			
n-Propyl acetate	88	200 ppm (849 mg/m ³)	250 ppm (1060 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	64			
n-Propyl acetate	96	200 ppm (849 mg/m ³)	250 ppm (1060 mg/m ³)	10	3	20(50)	200	8(3.3)	15	GC-FID	ST	226-01	35			
Propylene oxide	72	5 ppm (12 mg/m ³)		24		50		8		GC-ECD	ST	226-357	39			
Propylene oxide	80, 88	5 ppm (12 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	64			
Propylene oxide	96	5 ppm (12 mg/m ³)		5		20		4.2		GC-FID	ST	226-01	35			
Pulverized fuel ash (inhalable)	14/3	10 mg/m ³		960		2000		8		GR	IOM	225-70A	92	FLT	225-58F	79
Pulverized fuel ash (respirable)	14/3	4 mg/m ³		1056		2200 (2000)		8		GR	CYC	225-69	95	FLT	225-58F	or
											IOM	225-70A	92	FOAM	225-772	92
											FLT	225-58F	79			
Pyrethrum	See OSHA 70	1 mg/m ³		60		1000		1		GC-ECD	ST	226-30-16	35			
Pyridine	72	5 ppm (16 mg/m ³)	10 ppm (33 mg/m ³)	24		50		8		GC-ECD	ST	226-357	39			
Pyridine	88	5 ppm (16 mg/m ³)	10 ppm (33 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	64			
Pyridine	96	5 ppm (16 mg/m ³)	10 ppm (33 mg/m ³)	40		100		8		GC-FID	ST	226-01	35			
2-Pyridylamine	See OSHA PV2143	0.5 ppm (2 mg/m ³)	2 ppm (7.8 mg/m ³)	240		1000		4		GC-NPD	F/CST	225-9004	61			
Pyrocatechol	See OSHA PV2014	5 ppm (23 mg/m ³)		100		1000		100 min		HPLC-UV	ST	226-57	36			
Refractory ceramic & special purpose fibres		5 mg/m ³ (1 fibre/mm)		240		1000		8		PCM	FLT/CL	225-54	92	FLT	225-1913	76
Rhodium (metal fume & dust) as Rh	91	0.1 mg/m ³	0.3 mg/m ³	960	30	2000	2000	8	15	XRF	IOM	225-70A	92	FLT	225-19	76
Rhodium (soluble salts) as Rh	91	0.001 mg/m ³	0.003 mg/m ³	960	30	2000	2000	8	15	XRF	IOM	225-70A	92	FLT	225-19	76
Rosin-based solder flux fume	83/2	0.05 mg/m ³	0.15 mg/m ³	960	30	2000	2000	8	15	GC-FID	CST	225-8050K (kit)	FLT	225-8050	89	
Rotenone (ISO)	See NIOSH 5007	5 mg/m ³	10 mg/m ³	120		1000		2		HPLC-UV	FLT	225-17-01	74	CST	225-2LF	86
											C/HLD	225-1	87			
Rouge (total inhalable)	14/3	10 mg/m ³		960		2000		8		GR	IOM	225-70A	92	FLT	225-58F	79
Rouge (total respirable)	14/3	4 mg/m ³		1056		2200 (2000)		8		GR	CYC	225-69	95	FLT	225-58F	or
											IOM	225-70A	92	FOAM	225-772	92
											FLT	225-58F	79			
Rubber fume	47/2	0.6 mg/m ³		960	500	2000	2000	8		GR + SE	IOM	225-70A	92	FLT	225-58F	79
Rubber process dust	14/3	6 mg/m ³		960	30	2000	2000	8	15	GR	IOM	225-70A	92	FLT	225-58F	79
Selenium & compounds (except hydrogen selenide) (as Se)	91	0.1 mg/m ³		960		2000		8		XRF	IOM	225-70A	92	FLT	225-19	76
Silane		0.5 ppm (0.67 mg/m ³)	1 ppm (1.3 mg/m ³)	480		1000		4		AAS-GF	IMP	225-36-2	59	IMP	225-36-5	59
											IT	225-22	59			
Silica amorphous (inhalable dust)	14/3	6 mg/m ³		960	30	2000	2000	8	15	GR	IOM	225-70A	92	FLT	225-5-25	73
Silica amorphous (respirable dust)	14/3	2.4 mg/m ³		1056	30	2200 (2000)	2200/2000	8	15	GR	CYC	225-69	95	FLT	225-5-25	or
											IOM	225-70A	92	FOAM	225-772	92
											FLT	225-5-25	73			
Silica fused (respirable dust)	14/3	0.08 mg/m ³		1056	33	2200	2200/2000	8	15	GR	CYC	225-69	95	FLT	225-5-25	or
											IOM	225-70A	92	FOAM	225-772	92
											FLT	225-5-25	73			
Silica, crystalline (respirable)	14/3	0.1 mg/m ³		1056		2200 (2000)		8		GR	CYC	225-69	95	FLT	225-5-25	or
											IOM	225-70A	92	FOAM	225-772	92
											FLT	225-5-25	73			
Silicone carbide (not whiskers) (total inhalable)	14/3	10 mg/m ³		960		2000		8		GR	IOM	225-70A	92	FLT	225-58F	79
Silicone carbide (not whiskers) (total respirable)	14/3	4 mg/m ³		1056		2200		8		GR	CYC	225-69	95	FLT	225-58F	or
											IOM	225-70A	92	FOAM	225-772	92
											FLT	225-58F	79			
Silver (soluble compounds as Ag)	91	0.01 mg/m ³		960	30	2000	2000	8	15	XRF	IOM	225-70A	92	FLT	225-19	76
Silver, metallic	91	0.1 mg/m ³		240	60	2000	2000	0.5	2	XRF	IOM	225-70A	92	FLT	225-19	76
Sodium azide (as NaN ₃)	See OSHA ID-211	0.1 mg/m ³	0.3 mg/m ³		5		1000		5 min	IC-UV	ST	226-55	36	FLT	225-8-01	73
											CST	225-2LF	86	SPC	225-23	87
											C/HLD	225-1	87			
Sodium hydrogen sulphite	See OSHA ID-121	5 mg/m ³		960		2000		8		AA or AES	F/CST	225-3-01	77			
Sodium hydroxide	14/3		2 mg/m ³	960		2000		8		GR	IOM	225-70A	92	FLT	225-58F	79
Sodium-2-(2,4-dichlorophenoxy) ethyl sulphate	See OSHA CSI	10 mg/m ³	20 mg/m ³	varies	varies	varies	varies			CLR	IOM	225-70A	92	FLT	225-19	76
Softwood dust	14/3	5 mg/m ³		960	30	2000	2000	8	15	GR	IOM	225-70A	92	FLT	225-58F	79
Starch (respirable)	14/3	4 mg/m ³		1056		2200 (2000)		8		GR	CYC	225-69	95	FLT	225-58F	or
											IOM	225-70A	92	FOAM	225-772	92
											FLT	225-58F	79			
Starch (total inhalable)	14/3	10 mg/m ³		960		2000		8		GR	IOM	225-70A	92	FLT	225-58F	79
Styrene	72, 80	100 ppm (430 mg/m ³)	250 ppm (1080 mg/m ³)	24		50		8		GC-ECD	ST	226-357	39			
Styrene	88	100 ppm (430 mg/m ³)	250 ppm (1080 mg/m ³)	diffusive	diffusive	diffusive	diffusive		15	GC-FID	PS	575-003	64			
Styrene	96	100 ppm (430 mg/m ³)	250 ppm (1080 mg/m ³)	10	5	20(50)	330	8(3.3)	15	GC-FID	ST	226-01	35			
Subtilisins (Bacillus subtilis BPN & Carlsberg)	See OSHA CSI / Σ	0.00004 mg/m ³						8		FP	IOM	225-70A	92	FLT	225-58F	79
Sucrose	14/3	10 mg/m ³	20 mg/m ³	960		2000		8		GR	IOM	225-70A	92	FLT	225-58F	79
Sulfotep (tetraethyl dithiopyrophosphate, TEPP)	See OSHA CSI	0.1 mg/m ³		480		1000		100 min		GC-FPD	ST	226-30-16	35			

See page 196 for abbreviations.

Chemical Hazard	MDHS Method No.	SAMPLING								Analytical Method	SKC Collecting Equipment and Page No.							
		WEL		Vol. (liter)		Rate (ml/min)		Time										
		TWA (ppm)	STEL (ppm)	TWA	STEL	TWA	STEL	TWA (hr)	STEL (min)									
Sulphuric acid	See NIOSH 7903	0.05 mg/m ³		48		200		4		IC	ST	226-10-03	35					
Sulphuric acid	See OSHA 113	0.05 mg/m ³		480		2000		4		IC	PPI	225-3861	96					
Sulphuryl difluoride	See NIOSH 6012	5 ppm (21 mg/m ³)	10 ppm (42 mg/m ³)	10		20		8		IC-ECN	ST	226-16	35					
Talc (respirable dust)	14/3	1 mg/m ³		1056	33	2200	2200	8	15	GR	CYC IOM FLT	225-69 225-70A 225-58F	95 FOAM 79	225-58F 225-772	or			
Tantalum	91	5 mg/m ³	10 mg/m ³	240	6	2000	2000	0.5	2	XRF	IOM	225-70A	92	FLT	225-19		76	
Tellurium & compounds (except hydrogen telluride) as Te	91	0.1 mg/m ³		960		2000		8		XRF	IOM	225-70A	92	FLT	225-19		76	
Terphenyls (all isomers)	See OSHA CSI		0.5 ppm (4.8 mg/m ³)		8.5		1700		5	HPLC-FD	F/CST	225-709	79	C/HLD	225-1		87	
1,1,2,2-Tetrabromomethane	96	0.5 ppm (7.2 mg/m ³)		96		200		8		GC-FID	ST	226-10	35					
Tetracarbonylnickel	See OSHA CSI		0.1 ppm (0.24 mg/m ³)	480		1000		8		AA-GF	F/CST IMP	225-709 225-36-2	79 59	C/HLD IT	225-1 225-22		87 59	
1,1,2,2-Tetrachloroethane	88			diffusive	diffusive	diffusive	diffusive	8	15	GC-FID	PS	575-001	64					
1,1,2,2-Tetrachloroethane	96			10	3	20	200	8	15	GC-FID	ST	226-01	35					
Tetrachloroethylene	72, 80	50 ppm (345 mg/m ³)	100 ppm (689 mg/m ³)	24		50		8		GC-ECD	ST	226-357	39					
Tetrachloroethylene	88	50 ppm (345 mg/m ³)	100 ppm (689 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	64					
Tetrachloroethylene	96	50 ppm (345 mg/m ³)	100 ppm (689 mg/m ³)	3		20		2.5		GC-FID	ST	226-01	35					
Tetrachlorophthalic anhydride	62			240	7.5	500	500	8	15	HPLC	IOM ST	225-70A 226-35	92 35	FLT	225-58F		79	
Tetraethyl lead (as Pb)				960	120	2000	2000	8	60	AA	IOM	225-70A	92	FLT	225-19		76	
Tetrahydrofuran	88	50 ppm (150 mg/m ³)	100 ppm (300 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	64					
Tetrahydrofuran	96	50 ppm (150 mg/m ³)	100 ppm (300 mg/m ³)	9	1.5	20(50)	100	7(3)	15	GC-FID	ST	226-01	35					
Tetrasodium pyrophosphate	See OSHA ID-111	5 mg/m ³		960		2000		8		GR IC	FLT C/HLD	225-5 225-1	76 87	CST	225-2LF		86	
Thallium (soluble compounds) (as Tl)	91	0.1 mg/m ³		960		2000		8		XRF	IOM	225-70A	92	FLT	225-19		76	
Thionyl chloride	See OSHA CSI		1 ppm (4.9 mg/m ³)		15		1000		15	IC	IMP IT	225-36-2 225-22	59 59	IMP	225-36-5		59	
Tin compounds (inorganic except SnH ₄) (as Sn)	91	2 mg/m ³	4 mg/m ³	960		2000		8		XRF	IOM	225-70A	92	FLT	225-19		76	
Tin compounds (organic except cyhexatin) (ISO) (as Sn)	See NIOSH 5504	0.1 mg/m ³	0.2 mg/m ³	480		1000		8		HPLC AA-GF	ST C/HLD	226-30 225-1	35 87	F/CST	225-706		79	
Titanium dioxide - respirable	14/3	4 mg/m ³		1056		2200 (2000)		8		GR	CYC IOM FLT	225-69 225-70A 225-58F	95 FOAM 79	FLT 225-772	or			
Titanium dioxide (inhalable)	14/3	10 mg/m ³		960		2000		8		GR	IOM	225-70A	92	FLT	225-58F		79	
Toluene	72	50 ppm (191 mg/m ³)	100 ppm (384 mg/m ³)	24		50		8		GC-ECD	ST	226-357	39					
Toluene	80	50 ppm (191 mg/m ³)	100 ppm (384 mg/m ³)	24		50		8		GC-ECD	ST	226-357	or ST	226-358		39		
Toluene	88	50 ppm (191 mg/m ³)	100 ppm (384 mg/m ³)	diffusive	diffusive	diffusive	diffusive	8	15	GC-FID	PS	575-001	64					
Toluene	96	50 ppm (191 mg/m ³)	100 ppm (384 mg/m ³)	6	3	100	200	1	15	GC-FID	ST	226-01	35					
o-Toluidine	75	0.2 ppm (0.89 mg/m ³)		200		500				HPLC	IOM ST	225-70A 226-35	92 35	FLT	225-58F		79	
o-Toluidine	96	0.2 ppm (0.89 mg/m ³)		48		100		8		GC-FID	ST	226-10	35					
o-Toluidine	96			48		100		8		GC-FID	ST	226-10	35					
Tri- <i>o</i> -tolyl phosphate	See NIOSH 5037	0.1 mg/m ³	0.3 mg/m ³	90		1000		1.5		GC-FPD	F/CST	225-3-01	77	C/HLD	225-1		87	
Tributyl phosphate (all isomers)	See NIOSH 5034	5 mg/m ³	5 mg/m ³	90		1500		1		GC-FPD	F/CST	225-3-01	77	C/HLD	225-1		87	
1,2,4-Trichlorobenzene	80	1 ppm	5 ppm	varies		varies		varies		GC-ECD	FLT CST	225-17-03 Special order	74	ST C/HLD	226-30-04 225-1		35 87	
1,1,1-Trichloroethane	72, 80	100 ppm (555 mg/m ³)	200 ppm (1110 mg/m ³)	24		50		8		GC-ECD	ST	226-358	39					
1,1,1-Trichloroethane	88	100 ppm (555 mg/m ³)	200 ppm (1110 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	64					
1,1,1-Trichloroethane	96	100 ppm (555 mg/m ³)	200 ppm (1110 mg/m ³)		3		200		15	GC-FID	ST	226-01	35					
1,1,2-Trichloroethane	72			24		50		8		GC-ECD	ST	226-358	39					
1,1,2-Trichloroethane	88			diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	64					
1,1,2-Trichloroethane	96			10	3	20	200	8	15	GC-FID	ST	226-01	35					
Trichloroethylene	72, 80	100 ppm (550 mg/m ³)	150 ppm (820 mg/m ³)	24		50		8		GC-ECD	ST	226-357	39					
Trichloroethylene	88	100 ppm (550 mg/m ³)	150 ppm (820 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	64					
Trichloroethylene	96	100 ppm (550 mg/m ³)	150 ppm (820 mg/m ³)	10	3	20(50)	200	8(3,3)	15	GC-FID	ST	226-01	35					
Trichloronitromethane	See OSHA PV2103	0.1 ppm (0.68 mg/m ³)	0.3 ppm (2.1 mg/m ³)	3		200		15	min	GC-ECD	ST	226-93	37					
Triethylamine	See OSHA PV2060	2 ppm (8 mg/m ³)	4 ppm (17 mg/m ³)	5	3	100	200	50	15	GC-FID	ST	226-98	37					
Triglycidyl isocyanurate (TGIC)	85	0.1 mg/m ³		960	30	2000	2000	8	15	LC	IOM	225-70A	92	FLT	225-58F		79	
Trimellitic anhydride	62	0.04 mg/m ³	0.12 mg/m ³	240	7.5	500	500	8	15	HPLC	IOM ST	225-70A 226-35	92 35	FLT	225-58F		79	
Trimethyl phosphite	See NIOSH 5037	2 ppm (10 mg/m ³)		90		1000		1.5		GC-FPD	IOM	225-70A	92	FLT	225-19		76	
Trimethylbenzenes (all isomers or mixtures)	72, 80	25 ppm (125 mg/m ³)		24		50		8		GC-ECD	ST	226-357	39					
Trimethylbenzenes (all isomers or mixtures)	88	25 ppm (125 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	64					
3,5,5-Trimethylcyclohex-2-enone	72		5 ppm (29 mg/m ³)	24		50		8		GC-ECD	ST	226-357	39					
3,5,5-Trimethylcyclohex-2-enone	88		5 ppm (29 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	64					
3,5,5-Trimethylcyclohex-2-enone	96		5 ppm (29 mg/m ³)	10		20(50)		8(3,3)		GC-FID	ST	226-01	35					
2,4,6-Trinitrotoluene	See OSHA 44	0.5 mg/m ³		60		1000		1		GC-TEA-EAP	ST	226-56	36					
Triphenyl phosphate	See NIOSH 5038	3 mg/m ³	6 mg/m ³	240		1000		4		GC-FPD	F/CST	225-3-01	77	C/HLD	225-1		87	
Tungsten & insoluble compounds (as W) & others	91	5 mg/m ³	10 mg/m ³	960		2000		8		XRF	IOM	225-70A	92	FLT	225-19		76	

See page 196 for abbreviations.

