

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	Agency Reference	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	MDHS 102	20 ppm (37 mg/m ³)	50 ppm (92 mg/m ³)	48-480	1.5-15	100-1000	100-1000	8	15	HPLC-PDA	ST	226-119	or	ST	226-120	50
Acetaldehyde	MDHS 102	20 ppm (37 mg/m ³)	50 ppm (92 mg/m ³)	diffusive	diffusive	diffusive	diffusive			HPLC-PDA	PS	500-100				92
Acetic acid	MDHS 104 §	10 ppm (25 mg/m ³)	20 ppm (50 mg/m ³)	Up to 96	Up to 3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST	226-01				48
Acetone	MDHS 104	500 pm (1210 mg/m ³)	1500 ppm (3620 mg/m ³)	1-1.5	1-1.5	20-100	20-100	1.25	15	GC-FID, GC-MS	ST	226-358				52
Acetone	MDHS 104 §	500 pm (1210 mg/m ³)	1500 ppm (3620 mg/m ³)	0.5-3	0.5-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST	226-01				48
Acetone	MDHS 88 ¥	500 pm (1210 mg/m ³)	1500 ppm (3620 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002				82
Acetonitrile	MDHS 104 §	40 ppm (68 mg/m ³)	60 ppm (102 mg/m ³)	1-25	1-15	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST	226-09				48
Acetonitrile	MDHS 88 ¥	40 ppm (68 mg/m ³)	60 ppm (102 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	or	PS	575-002	82
Acrylamide	MDHS 57/2 Δ	0.1 mg/m ³		48		100		8		HPLC-UV	IMP	225-36-1	70	IT	225-22	70
Acrylonitrile	MDHS 96	2 ppm (4.4 mg/m ³)		3.5-20		10-200		Up to 8		GC-FID	ST	226-01				48
Acrylonitrile	MDHS 88 ¥	2 ppm (4.4 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002				82
Allyl alcohol	MDHS 104 §	2 ppm (4.8 mg/m ³)	4 ppm (9.7 mg/m ³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST	226-01				48
Allyl alcohol	MDHS 88 ¥	2 ppm (4.8 mg/m ³)	4 ppm (9.7 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	or	PS	575-002	82
Aluminium metal (inhalable dust)	MDHS 14/4	10 mg/m ³		960		2000		8		GR	IOM	225-70A	121	FLT	225-58F	108
Aluminium metal (inhalable dust)	ISO 15202:2020	10 mg/m ³		960		2000		8		ICP-AES	IOM	225-70A	121	FLT	225-1930	100
Aluminium metal (respirable dust)	MDHS 14/4	4 mg/m ³		1440		3000		8		GR	CYC	225-69	124	FLT	225-58F	108
Aluminium metal (respirable dust)	MDHS 14/4	4 mg/m ³		960		2000		8		GR	IOM	225-70A	121	FLT	225-58F	108
Aluminium metal (respirable dust)	ISO 15202:2020	4 mg/m ³		1440		3000		8		ICP-AES	CYC	225-69	124	FLT	225-1930	100
Aluminium metal (respirable dust)	ISO 15202:2020	4 mg/m ³		960		2000		8		ICP-AES	IOM	225-70A	121	FLT	225-1930	100
Aluminium metal (respirable dust)										FOAM	225-772	121				
Aluminium oxides (inhalable dust)	MDHS 14/4	10 mg/m ³		960		2000		8		GR	IOM	225-70A	121	FLT	225-58F	108
Aluminium oxides (inhalable dust)	ISO 15202:2020	10 mg/m ³		960		2000		8		ICP-AES	IOM	225-70A	121	FLT	225-1930	100
Aluminium oxides (respirable dust)	MDHS 14/4	4 mg/m ³		1440		3000		8		GR	CYC	225-69	124	FLT	225-58F	108
Aluminium oxides (respirable dust)	MDHS 14/4	4 mg/m ³		960		2000		8		GR	IOM	225-70A	121	FLT	225-58F	108
Aluminium oxides (respirable dust)	ISO 15202:2020	4 mg/m ³		1440		3000		8		ICP-AES	CYC	225-69	124	FLT	225-1930	100

See page 244 for abbreviations.

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Chemical Hazard	Agency Reference	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)						
Aluminium oxides (respirable dust)	ISO 15202:2020	4 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A FOAM 225-772	121 121	FLT	225-1930	100
Aluminium salts (soluble)	ISO 15202:2020	2 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A	121	FLT	225-1930	100
Amines, aromatic (see individual compounds)	MDHS 75/2			200		2000		Up to 8		HPLC-UV	IOM 225-70A ST 226-35	121 48	FLT	225-58F‡	108
2-Aminoethanol	MDHS 96	1 ppm (2.5 mg/m ³)	3 ppm (7.6 mg/m ³)	4-24	4-24	10-200	10-200	Up to 8	15	GC-FID	ST 226-10-04	48			
Aniline (Phenylamine)	MDHS 104 §	1 ppm (4 mg/m ³)		5-30		20-200		Up to 8		GC-FID, GC-MS	ST 226-10	48			
Aniline (Phenylamine)	MDHS 104	1 ppm (4 mg/m ³)		1-10		20-100		Up to 2		GC-FID, GC-MS	ST 226-357	52			
Aniline (Phenylamine)	MDHS 75/2	1 ppm (4 mg/m ³)		200		2000		Up to 8		HPLC-UV	IOM 225-70A	121	FLT	225-58F‡	108
p-Antimony & compounds (except stibine) (as Sb)	ISO 15202:2020	0.5 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A	121	FLT	225-1930	100
p-Aramid respirable fibres (Polymeric aromatic amide derivative)	MDHS 59/2	0.5 fibres/ml		480		1000		8		PCM	FLT/CL 225-54A or FLT 225-1913	or 100	FLT/CL	225-54	or 100
Aromatic carboxylic acid anhydrides (ACAs) (see individual compounds)	MDHS 62/2			960		2000		8		HPLC-UV	IOM 225-70A ST 226-35-01	121 48	FLT	225-58F	108
Arsenic & arsenic compounds (except arsine) (as As)	ISO 15202:2020	0.1 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A	121	FLT	225-1930	100
Asbestos	HSG 248	0.1 fibre/cm ³	0.6 fibre/cm ³	240-480	40	1000-2000	4000	2-4	10	PCM	FLT/CL 225-54A or FLT 225-1913	or 100	FLT/CL	225-54	or 100
Azodicarbonamide	MDHS 92/2	1.0 mg/m ³	3.0 mg/m ³	960	30	2000	2000	8	15	HPLC	IOM 225-70A	121	FLT	225-58F	108
Barium compounds (soluble) (as Ba)	ISO 15202:2020	0.5 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A	121	FLT	225-1930	100
Barium sulphate (inhalable dust)	MDHS 14/4	10 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT	225-58F	108
Barium sulphate (inhalable dust)	ISO 15202:2020	10 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A	121	FLT	225-1930	100
Barium sulphate (respirable dust)	MDHS 14/4	4 mg/m ³		1440		3000		8		GR	CYC 225-69	124	FLT	225-58F	108
Barium sulphate (respirable dust)	MDHS 14/4	4 mg/m ³		960		2000		8		GR	IOM 225-70A FOAM 225-772	121 121	FLT	225-58F	108
Barium sulphate (respirable dust)	ISO 15202:2020	4 mg/m ³		1440		3000		8		ICP-AES	CYC 225-69	124	FLT	225-1930	100
Barium sulphate (respirable dust)	ISO 15202:2020	4 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A FOAM 225-772	121 121	FLT	225-1930	100
Benzaldehyde	MDHS 102			48-480		100-1000		8		HPLC-PDA	ST 226-119	50	ST	226-120	50
Benzaldehyde	MDHS 102			diffusive	diffusive	diffusive	diffusive			HPLC-PDA	PS 500-100	92			
Benzene	MDHS 104 §	1 ppm (3.25 mg/m ³)		5-30		20-200		Up to 8		GC-FID, GC-MS	ST 226-01	48			
Benzene	MDHS 104	1 ppm (3.25 mg/m ³)		1-6.2		20-100		Up to 2		GC-FID, GC-MS	ST 226-357	52			
Benzene	MDHS 104	1 ppm (3.25 mg/m ³)		1-10		20-100		Up to 2		GC-FID, GC-MS	ST 226-358	52			
Benzene	MDHS 88 ¥	1 ppm (3.25 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	or PS 575-002		82	
Benzyl chloride	MDHS 104 §	0.5 ppm (2.6 mg/m ³)	1.5 ppm (7.9 mg/m ³)	6-50	Up to 3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01	48			
Benzyl chloride	MDHS 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	or PS 575-002		82	
Bifenthrin	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A ST 226-35-01	121 48	FLT	225-58F	108
Bis-(2-Ethylhexyl) phthalate (diOctyl phthalate)	MDHS 104 §	5 mg/m ³	10 mg/m ³	240		1000		4		GC-FID, GC-MS	ST 226-56	49			
Bornan-2-one (Camphor, synthetic)	MDHS 104 §	2 ppm (13 mg/m ³)	3 ppm (19 mg/m ³)	1-25	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01	48			
Bornan-2-one (Camphor, synthetic)	MDHS 88 ¥	2 ppm (13 mg/m ³)	3 ppm (19 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	or PS 575-002		82	
Bromoethylene	MDHS 96	1 ppm (4.4 mg/m ³)		2-10		10-200		Up to 8		GC-FID	ST 226-09	48			
Bromomethane (Methyl bromide)	MDHS 88 ¥	5 ppm (20 mg/m ³)	15 ppm (59 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	82			
Bromopropylate	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A ST 226-35-01	121 48	FLT	225-58F	108
Bupirimate	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A ST 226-35-01	121 48	FLT	225-58F	108
Buta-1,3-diene (1,3-Butadiene)	MDHS 104	1 ppm (2.2 mg/m ³)		1-10		20-100		Up to 2		GC-FID, GC-MS	ST 226-363	52			
Buta-1,3-diene (1,3-Butadiene)	MDHS 104 §	1 ppm (2.2 mg/m ³)		5-25		20-200		Up to 8		GC-FID, GC-MS	ST 226-37	49			
Buta-1,3-diene (1,3-Butadiene)	MDHS 53/2	1 ppm (2.2 mg/m ³)		2-5		10-200		Up to 8		GC-FID, GC-MS	ST 226-363	52			
Butan-1-ol (n-Butanol; n-Butyl alcohol)	MDHS 104 §		50 ppm (154 mg/m ³)	2-10	2-10	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01	48			
Butan-1-ol (n-Butanol; n-Butyl alcohol)	MDHS 104		50 ppm (154 mg/m ³)	1-5	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357	or ST 226-358		52	

See page 244 for abbreviations.

Chemical Hazard	Agency Reference	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)					
Butan-1-ol (n-Butanol; n-Butyl alcohol)	MDHS 88 ¥		50 ppm (154 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	or	PS 575-002	82
Butan-2-ol (2-Butanol; sec-Butanol; sec-Butyl alcohol)	MDHS 88 ¥	100 ppm (308 mg/m ³)	150 ppm (462 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	or	PS 575-002	82
Butan-2-ol (2-Butanol; sec-Butanol; sec-Butyl alcohol)	MDHS 104 §	100 ppm (308 mg/m ³)	150 ppm (462 mg/m ³)	2-10	2-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01			48
Butan-2-one (Methyl ethyl ketone; MEK)	MDHS 104	200 ppm (600 mg/m ³)	300 ppm (899 mg/m ³)	1-3.2	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357			52
Butan-2-one (Methyl ethyl ketone; MEK)	MDHS 104	200 ppm (600 mg/m ³)	300 ppm (899 mg/m ³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-358			52
Butan-2-one (Methyl ethyl ketone; MEK)	MDHS 88 ¥	200 ppm (600 mg/m ³)	300 ppm (899 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002			82
2-(2-Butoxyethoxy)ethanol (Butyl carbitol)	MDHS 104 §	10 ppm (67.5 mg/m ³)	15 ppm (101.2 mg/m ³)	10		200		50 min		GC-FID, GC-MS	ST 226-01			48
2-Butoxyethanol (Butyl Cellosolve)	MDHS 104 §	25 ppm (123 mg/m ³)	50 ppm (246 mg/m ³)	5-25	Up to 3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01			48
2-Butoxyethanol (Butyl Cellosolve)	MDHS 104	25 ppm (123 mg/m ³)	50 ppm (246 mg/m ³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357			52
2-Butoxyethanol (Butyl Cellosolve)	MDHS 88 ¥	25 ppm (123 mg/m ³)	50 ppm (246 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002			82
n-Butoxyethyl acetate (n-Butoxyethanol acetate; Butyl Cellosolve acetate)	MDHS 104	20 ppm (133 mg/m ³)	50 ppm (332 mg/m ³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357			52
n-Butoxyethyl acetate (n-Butoxyethanol acetate; Butyl Cellosolve acetate)	MDHS 104 §	20 ppm (133 mg/m ³)	50 ppm (332 mg/m ³)	48	15	100	1000	8	15	GC-FID, GC-MS	ST 226-01			48
n-Butoxyethyl acetate (n-Butoxyethanol acetate; Butyl Cellosolve acetate)	MDHS 88 ¥	20 ppm (133 mg/m ³)	50 ppm (332 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002			82
Butyl acetate (n-Butyl acetate)	MDHS 104	150 ppm (724 mg/m ³)	200 ppm (966 mg/m ³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357	or	ST 226-358	52
Butyl acetate (n-Butyl acetate)	MDHS 104 §	150 ppm (724 mg/m ³)	200 ppm (966 mg/m ³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01			48
Butyl acetate (n-Butyl acetate)	MDHS 88 ¥	150 ppm (724 mg/m ³)	200 ppm (966 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	or	PS 575-002	82
sec-Butyl acetate	MDHS 88 ¥	200 ppm (966 mg/m ³)	250 ppm (1210 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	or	PS 575-002	82
sec-Butyl acetate	MDHS 104 §	200 ppm (966 mg/m ³)	250 ppm (1210 mg/m ³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01			48
tert-Butyl acetate(1,1-dimethylethyl ester)	MDHS 104	200 ppm (966 mg/m ³)	250 ppm (1210 mg/m ³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-358			52
tert-Butyl acetate (1,1-dimethylethyl ester)	MDHS 104 §	200 ppm (966 mg/m ³)	250 ppm (1210 mg/m ³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01			48
tert-Butyl acetate (1,1-dimethylethyl ester)	MDHS 72	200 ppm (966 mg/m ³)	250 ppm (1210 mg/m ³)	2.5	2.5	5-200	5-200	Up to 8	15	GC-FID	ST 226-357			52
tert-Butyl acetate (1,1-dimethylethyl ester)	MDHS 88 ¥	200 ppm (966 mg/m ³)	250 ppm (1210 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	or	PS 575-002	82
n-Butyl acrylate	MDHS 104 §	1 ppm (5 mg/m ³)	5 ppm (26 mg/m ³)	12		50		4		GC-FID	ST 226-73			49
n-Butyl acrylate	MDHS 88 ¥	1 ppm (5 mg/m ³)	5 ppm (26 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002			82
2-sec-Butylphenol (o-sec-Butylphenol)	MDHS 104 §	5 ppm (31 mg/m ³)		20		200		100 min		GC-FID, GC-MS	ST 226-95			50
Cadmium & compounds (except oxide fume, sulphide & sulphide pigments) (as Cd)	ISO 15202:2020	0.025 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A	121	FLT 225-1930	100
Cadmium oxide fume (as Cd)	ISO 15202:2020	0.025 mg/m ³	0.05 mg/m ³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A	121	FLT 225-1930	100
Cadmium sulphide & cadmium sulphide pigments (respirable dust) (as Cd)	ISO 15202:2020	0.03 mg/m ³		1440		3000		8		ICP-AES	CYC 225-69	124	FLT 225-1930	100
Cadmium sulphide & cadmium sulphide pigments (respirable dust) (as Cd)	ISO 15202:2020	0.03 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A	121	FLT 225-1930	100
Calcium carbonate (inhalable dust)	MDHS 14/4	10 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT 225-58F	108
Calcium carbonate (inhalable dust)	ISO 15202:2020	10 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A	121	FLT 225-1930	100
Calcium carbonate (respirable)	MDHS 14/4	4 mg/m ³		1440		3000		8		GR	CYC 225-69	124	FLT 225-58F	108
Calcium carbonate (respirable)	MDHS 14/4	4 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT 225-58F	108
Calcium carbonate (respirable)	ISO 15202:2020	4 mg/m ³		1440		3000		8		ICP-AES	CYC 225-69	124	FLT 225-1930	100
Calcium carbonate (respirable)	ISO 15202:2020	4 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A	121	FLT 225-1930	100
Calcium cyanamide	ISO 15202:2020	0.5 mg/m ³	1 mg/m ³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A	121	FLT 225-1930	100
Calcium hydroxide	MDHS 14/4	5 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT 225-58F	108
Calcium hydroxide	ISO 15202:2020	5 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A	121	FLT 225-1930	100
Calcium hydroxide (respirable fraction)	MDHS 14/4	1 mg/m ³	4 mg/m ³	1440	45	3000	3000	8	15	GR	CYC 225-69	124	FLT 225-58F	108
Calcium hydroxide (respirable fraction)	MDHS 14/4	1 mg/m ³	4 mg/m ³	960	30	2000	2000	8	15	GR	IOM 225-70A	121	FLT 225-58F	108
Calcium hydroxide (respirable fraction)	ISO 15202:2020	1 mg/m ³	4 mg/m ³	1440	45	3000	3000	8	15	ICP-AES	CYC 225-69	124	FLT 225-1930	100
Calcium hydroxide (respirable fraction)	ISO 15202:2020	1 mg/m ³	4 mg/m ³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A	121	FLT 225-1930	100
Calcium oxide	MDHS 14/4	2 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT 225-58F	108

See page 244 for abbreviations.

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Chemical Hazard	Agency Reference	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)							
Calcium oxide	ISO 15202:2020	2 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A	121	FLT	225-1930	100	
Calcium oxide (respirable fraction)	MDHS 14/4	1 mg/m ³	4 mg/m ³	1440	45	3000	3000	8	15	GR	CYC 225-69	124	FLT	225-58F	108	
Calcium oxide (respirable fraction)	MDHS 14/4	1 mg/m ³	4 mg/m ³	960	30	2000	2000	8	15	GR	IOM 225-70A FOAM 225-772	121	FLT	225-58F	108	
Calcium oxide (respirable fraction)	ISO 15202:2020	1 mg/m ³	4 mg/m ³	1440	45	3000	3000	8	15	ICP-AES	CYC 225-69	124	FLT	225-1930	100	
Calcium oxide (respirable fraction)	ISO 15202:2020	1 mg/m ³	4 mg/m ³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A FOAM 225-772	121	FLT	225-1930	100	
Calcium silicate (inhalable dust)	MDHS 14/4	10 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT	225-58F	108	
Calcium silicate (respirable)	MDHS 14/4	4 mg/m ³		1440		3000		8		GR	CYC 225-69	124	FLT	225-58F	108	
Calcium silicate (respirable)	MDHS 14/4	4 mg/m ³		960		2000		8		GR	IOM 225-70A FOAM 225-772	121	FLT	225-58F	108	
Captan (ISO)	MDHS 94/2	5 mg/m ³	15 mg/m ³	960	30	2000	2000	8	15	GC-MS	IOM 225-70A ST 226-35-01	121	FLT	225-58F	108	
Carbaryl	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A ST 226-35-01	121	FLT	225-58F	108	
Carbon black	MDHS 14/4	3.5 mg/m ³	7 mg/m ³	960	30	2000	2000	8	15	GR	IOM 225-70A	121	FLT	225-58F	108	
Carbon disulphide	MDHS 96	5 ppm (15 mg/m ³)		2-25		10-200		Up to 8		GC-FPD	ST 226-01	and	ST 226-44	49		
Carbon disulphide	MDHS 96	5 ppm (15 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001			82		
Carbon tetrachloride	MDHS 104	1 ppm (6.4 mg/m ³)	5 ppm (32 mg/m ³)	1-6.2	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357			52		
Carbon tetrachloride	MDHS 104	1 ppm (6.4 mg/m ³)	5 ppm (32 mg/m ³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-358			52		
Carbon tetrachloride	MDHS 88 ¥	1 ppm (6.4 mg/m ³)	5 ppm (32 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001			82		
Carbon tetrachloride	MDHS 104 §	1 ppm (6.4 mg/m ³)	5 ppm (32 mg/m ³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-35			48		
Carbon tetrachloride	MDHS 104 §	1 ppm (6.4 mg/m ³)	5 ppm (32 mg/m ³)	3-96	3	10-200	10-200	Up to 8	15	GC-FID, GC-MS	ST 226-01			48		
Cellulose (inhalable dust)	MDHS 14/4	10 mg/m ³	20 mg/m ³	960	30	2000	2000	8	15	GR	IOM 225-70A	121	FLT	225-58F	108	
Cellulose (respirable)	MDHS 14/4	4 mg/m ³		1440		3000		8		GR	CYC 225-69	124	FLT	225-58F	108	
Cellulose (respirable)	MDHS 14/4	4 mg/m ³		960		2000		8		GR	IOM 225-70A FOAM 225-772	121	FLT	225-58F	108	
Chlorfenvinphos	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A ST 226-35-01	121	FLT	225-58F	108	
o-Chloroaniline (OCA; 2-chloroaniline)	MDHS 75/2			200		2000		Up to 8		HPLC-UV	IOM 225-70A ST 226-35	121	FLT	225-58F‡	108	
Chlorobenzene	MDHS 104	1 ppm (4.7 mg/m ³)	3 ppm (14 mg/m ³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357			52		
Chlorobenzene	MDHS 88 ¥	1 ppm (4.7 mg/m ³)	3 ppm (14 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	or	PS 575-002	82		
Chlorobenzene	MDHS 104 §	1 ppm (4.7 mg/m ³)	3 ppm (14 mg/m ³)	1.5-40	1.5-3	20-200	10-200	Up to 8	15	GC-FID, GC-MS	ST 226-01			48		
1-Chloro-2,3-epoxypropane (Epichlorohydrin; ECH)	MDHS 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			82		
1-Chloro-2,3-epoxypropane (epichlorohydrin)	MDHS 104	0.5 ppm (1.9 mg/m ³)	1.5 ppm (5.8 mg/m ³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357	or	ST 226-358	52		
1-Chloro-2,3-epoxypropane (epichlorohydrin)	MDHS 96	0.5 ppm (1.9 mg/m ³)	1.5 ppm (5.8 mg/m ³)	2-30	2-3	10-200	10-200	Up to 8	15	GC-FID	ST 226-01			48		
Chloroethane (Ethyl chloride)	MDHS 104 §	50 ppm (134 mg/m ³)		0.3-3		20-50		Up to 8		GC-FID, GC-MS	ST 226-25			48		
2-Chloroethanol	MDHS 96		1 ppm (3.4 mg/m ³)	2-35	2-3	10-200	10-200	2-8	15	GC-FID	ST 226-81A			49		
Chloroform	MDHS 88 ¥	2 ppm (9.9 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001			82		
Chloroform	MDHS 104 §	2 ppm (9.9 mg/m ³)		1-50		20-200		Up to 8		GC-FID, GC-MS	ST 226-01			48		
Chloromethane	MDHS 104 §	50 ppm (105 mg/m ³)	100 ppm (210 mg/m ³)	1-10	1-10	50-200	50-200	2-8	15	GC-FID	ST 226-09 ✓	and	ST 226-01 ✓	48		
1-Chloro-4-nitrobenzene	MDHS 104 §	1 mg/m ³	2 mg/m ³	1-96	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01			48		
Chlorothalonil	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A ST 226-35-01	121	FLT	225-58F	108	
Chlorpyrifos (ISO)	MDHS 94/2	0.2 mg/m ³	0.6 mg/m ³	960	30	2000	2000	8	15	GC-MS	IOM 225-70A ST 226-35-01	121	FLT	225-58F	108	
Chlorpyrifos-Methyl	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A ST 226-35-01	121	FLT	225-58F	108	
Chromium	ISO 15202:2020	0.5 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A	121	FLT	225-1930	100	
Chromium (II) compounds (as Cr)	ISO 15202:2020	0.5 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A	121	FLT	225-1930	100	
Chromium (III) compounds (as Cr)	ISO 15202:2020	0.5 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A	121	FLT	225-1930	100	
Chromium (VI) (Hexavalent chromium) compounds (as Cr)	MDHS 52/4	Static method only		240		2000		2		CLR	IOM 225-70A	121	FLT	225-9026	68	

See page 244 for abbreviations.

Chemical Hazard	Agency Reference	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)						
Chromium (VI) (Hexavalent chromium) compounds (as Cr)	ISO 16740:2005	0.01 mg/m ³ ⚡		960		2000		8		IC	IOM FLT	225-70A 225-9026	121 68	or FLT	225-5-25 105
Cobalt & cobalt compounds (as Co)	ISO 15202:2020	0.1 mg/m ³		960		2000		8		ICP-AES	IOM	225-70A	121	FLT	225-1930 100
Copper & compounds (dust & mists) (as Cu)	ISO 15202:2020	1 mg/m ³	2 mg/m ³	960	30	2000	2000	8	15	ICP-AES	IOM	225-70A	121	FLT	225-1930 100
Copper fume (as Cu)	ISO 15202:2020	0.2 mg/m ³		960		2000		8		ICP-AES	IOM	225-70A	121	FLT	225-1930 100
Cotton dust	MDHS 14/4	2.5 mg/m ³		960		2000		8		GR	IOM	225-70A	121	FLT	225-58F 108
Crotonaldehyde	MDHS 102			48-480		100-1000		8		HPLC-PDA	ST	226-119	or	ST	226-120 50
Crotonaldehyde	MDHS 102			diffusive	diffusive	diffusive	diffusive			HPLC-PDA	PS	500-100			92
Cumene (Isopropylbenzene)	MDHS 104 §	25 ppm (125 mg/m ³)	50 ppm (250 mg/m ³)	1-30	1-3	20-200	10-200	Up to 8	15	GC-FID, GC-MS	ST	226-01			48
Cumene (Isopropylbenzene)	MDHS 104	25 ppm (125 mg/m ³)	50 ppm (250 mg/m ³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST	226-357			52
Cumene (Isopropylbenzene)	MDHS 88 ¥	25 ppm (125 mg/m ³)	50 ppm (250 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	or	PS	575-002 82
Cyclohexane	MDHS 88 ¥	100 ppm (350 mg/m ³)	300 ppm (1050 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	or	PS	575-002 82
Cyclohexane	MDHS 104 §	100 ppm (350 mg/m ³)	300 ppm (1050 mg/m ³)	2.5-5	2.5-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST	226-01			48
Cyclohexanol	MDHS 88 ¥	50 ppm (208 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	or	PS	575-002 82
Cyclohexanol	MDHS 104 §	50 ppm (208 mg/m ³)		1-10		20-200		Up to 8		GC-FID, GC-MS	ST	226-01			48
Cyclohexanone	MDHS 104	10 ppm (41 mg/m ³)	20 ppm (82 mg/m ³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST	226-357			52
Cyclohexanone	MDHS 88 ¥	10 ppm (41 mg/m ³)	20 ppm (82 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002			82
Cyclohexanone	MDHS 104 §	10 ppm (41 mg/m ³)	20 ppm (82 mg/m ³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST	226-01			48
Cypermethrin	MDHS 94/2			960		2000		8		GC-MS	IOM ST	225-70A 226-35-01	121 48	FLT	225-58F 108
Deltamethrin	MDHS 94/2			960		2000		8		GC-MS	IOM ST	225-70A 226-35-01	121 48	FLT	225-58F 108
Diatomaceous earth (natural) (respirable dust)	MDHS 14/4	1.2 mg/m ³		1440		3000		8		GR	CYC	225-69	124	FLT	225-58F 108
Diatomaceous earth (natural) (respirable dust)	MDHS 14/4	1.2 mg/m ³		960		2000		8		GR	IOM FOAM	225-70A 225-772	121 121	FLT	225-58F 108
Dibismuth telluride	ISO 15202:2020	10 mg/m ³	20 mg/m ³	960	30	2000	2000	8	15	ICP-AES	IOM	225-70A	121	FLT	225-1930 100
Diboron trioxide (Boron oxide)	MDHS 14/4	10 mg/m ³	20 mg/m ³	960	30	2000	2000	8	15	GR	IOM	225-70A	121	FLT	225-58F 108
Diboron trioxide (Boron oxide)	ISO 15202:2020	10 mg/m ³	20 mg/m ³	960	30	2000	2000	8	15	ICP-AES	IOM	225-70A	121	FLT	225-1930 100
1,2-Dibromoethane (Ethylene dibromide; EDB)	MDHS 96	0.5 ppm (3.9 mg/m ³)		0.1-25		50		Up to 8		GC-ECD	ST	226-01			48
1,2-Dibromoethane (Ethylene dibromide; EDB)	MDHS 88 ¥	0.5 ppm (3.9 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	or	PS	575-002 82
2,6-Di-tert-butyl-p-cresol	MDHS 104 §	10 mg/m ³		100		1000		100 min		GC-FID, GC-MS	ST	226-57			49
Dibutyl phthalate (DBP)	MDHS 104 §	5 mg/m ³	10 mg/m ³	240	15	1000	1000	4	15	GC-FID, GC-MS	ST	226-56			49
Dichlofluanid	MDHS 94/2			960		2000		8		GC-MS	IOM ST	225-70A 226-35-01	121 48	FLT	225-58F 108
2,2'-Dichloro-4,4'-methylene dianiline (MbOCA; 4,4'-Methylenebis(2-chloroaniline); 3'-Dichloro-4,4'-diaminodiphenyl methane)	MDHS 75/2	0.005 mg/m ³		200		2000		Up to 8		HPLC-UV	IOM	225-70A	121	FLT	225-58F‡ 108
1,2-Dichlorobenzene (ortho-dichlorobenzene)	MDHS 88 ¥	25 ppm (153 mg/m ³)	50 ppm (306 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	or	PS	575-002 82
1,2-Dichlorobenzene (ortho-dichlorobenzene)	MDHS 104 §	25 ppm (153 mg/m ³)	50 ppm (306 mg/m ³)	1-10	1-3	20-200	20-200	Up to 8	15 min	GC-FID, GC-MS	ST	226-01			48
1,4-Dichlorobenzene (para-dichlorobenzene)	MDHS 104 §	2 ppm (12 mg/m ³)	10 ppm (60 mg/m ³)	1-8	1-3	20-200	20-200	Up to 8	15 min	GC-FID, GC-MS	ST	226-01			48
1,4-Dichlorobenzene (para-dichlorobenzene)	MDHS 88 ¥	2 ppm (12 mg/m ³)	10 ppm (60 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	or	PS	575-002 82
1,1-Dichloroethane	MDHS 104 §	100 ppm		0.5-15		20-200		Up to 8		GC-FID, GC-MS	ST	226-01			48
1,1-Dichloroethane	MDHS 88 ¥	100 ppm		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001			82
1,2-Dichloroethane (Ethylene dichloride)	MDHS 104	5 ppm (21 mg/m ³)		1-5.4		20-100		Up to 2		GC-FID, GC-MS	ST	226-357			52
1,2-Dichloroethane (Ethylene dichloride)	MDHS 104	5 ppm (21 mg/m ³)		1-10		20-100		Up to 2		GC-FID, GC-MS	ST	226-358			52
1,2-Dichloroethane (Ethylene dichloride)	MDHS 104 §	5 ppm (21 mg/m ³)		1-50		20-200		Up to 8		GC-FID, GC-MS	ST	226-01			48
1,2-Dichloroethane (Ethylene dichloride)	MDHS 88 ¥	5 ppm (21 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001			82
1,2-Dichloroethylene, cis:trans isomers 60:40	MDHS 104 §	200 ppm (806 mg/m ³)	250 ppm (1010 mg/m ³)	0.2-5	0.2-3	20-200	10-200	Up to 8	15 min	GC-FID, GC-MS	ST	226-01			48

See page 244 for abbreviations.

Sampling Guide — UK (HSE)

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Chemical Hazard	Agency Reference	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)					
Dichlorofluoromethane		10 ppm (43 mg/m ³)								GC-FID	ST 226-09 ✓	48		
Dichloromethane (Methylene chloride)	MDHS 104	100 ppm (353 mg/m ³)	200 ppm (706 mg/m ³)	1-2.1		20-100			Up to 1.75	GC-FID, GC-MS	ST 226-358	52		
Dichloromethane (Methylene chloride)	MDHS 104 §	100 ppm (353 mg/m ³)	200 ppm (706 mg/m ³)	0.5-2.5	0.5-2.5	10-200	10-200	Up to 8	15	GC-FID	ST 226-01 ✓	48		
Dichloromethane (Methylene chloride)	MDHS 88 ¥	100 ppm (353 mg/m ³)	200 ppm (706 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	82		
2,2'-Dichloro-4,4'-methylene dianiline (MbOCA; 4,4'-Methylenebis(2-chloroaniline); 3'-Dichloro-4,4'-diaminodiphenyl methane)	MDHS 75/2	0.005 mg/m ³		200		2000		Up to 8		HPLC-JV	IOM 225-70A	121	FLT 225-58F ‡	108
Dicyclopentadiene	MDHS 88 ¥	5 ppm (27 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	82		
Diethylamine	MDHS 104 §	5 ppm (15 mg/m ³)	10 ppm (30 mg/m ³)	3-30	3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-10	48		
Diethyl ether (Ethyl ether; Ether)	MDHS 96	100 ppm (310 mg/m ³)	200 ppm (620 mg/m ³)	0.25-3	0.25-3	10-200	10-200	Up to 8	15	GC-FID	ST 226-01	48		
Diethyl ether (Ethyl ether; Ether)	MDHS 88 ¥	100 ppm (310 mg/m ³)	200 ppm (620 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	82		
Diethyl phthalate (DEP)	MDHS 104 §	5 mg/m ³	10 mg/m ³	240	15	1000	1000	4	15	GC-FID, GC-MS	ST 226-56	49		
Diethyl sulphate (DES)	MDHS 104	0.05 ppm (0.32 mg/m ³)		1-10		20-100		Up to 2		GC-FID, GC-MS	ST 226-357	52		
Diethyl sulphate (DES)	MDHS 89	0.05 ppm (0.32 mg/m ³)		3-96		200		Up to 8		GC-MSD	ST 226-357	52		
Diisopropyl ether (Isopropyl ether)	MDHS 88 ¥	250 ppm (1060 mg/m ³)	310 ppm (1310 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	82		
Diisopropyl ether (Isopropyl ether)	MDHS 96	251 ppm (1060 mg/m ³)	311 ppm (1310 mg/m ³)	0.1-3	0.1-3	10-50	10-50	Up to 8	15	GC-FID	ST 226-01	48		
Dimethoate	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A	121	FLT 225-58F ‡	108
Dimethoxymethane (Methylal)	MDHS 88 ¥	1000 ppm (3160 mg/m ³)	1250 ppm (3950 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	82		
Dimethoxymethane (Methylal)	MDHS 104 §	1000 ppm (3160 mg/m ³)	1250 ppm (3950 mg/m ³)	1-3	1-3	10-200	10-200	Up to 8	15	GC-FID, GC-MS	ST 226-01	48		
N,N-Dimethylacetamide	MDHS 104 §	10 ppm (36 mg/m ³)	20 ppm (72 mg/m ³)	15-80	15	10-1000	10-1000	Up to 8	15	GC-FID, GC-MS	ST 226-10	48		
Dimethylamine (2-Dimethylamine)	MDHS 104 §	2 ppm (3.8 mg/m ³)	6 ppm (11 mg/m ³)	3-30	3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-10	48		
N,N-Dimethylaniline	MDHS 88 ¥	5 ppm (25 mg/m ³)	10 ppm (50 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	82		
N,N-Dimethylaniline	MDHS 104 §	5 ppm (25 mg/m ³)	10 ppm (50 mg/m ³)	3-20	3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-10	48		
N,N-Dimethylformamide (DMF)	MDHS 88 ¥	5 ppm (15 mg/m ³)	10 ppm (30 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	82		
2,6-Dimethylheptan-4-one (Diisobutyl ketone; DIBK)	MDHS 104 §	25 ppm (148 mg/m ³)		1-10		20-200		Up to 8		GC-FID, GC-MS	ST 226-01	48		
2,6-Dimethylheptan-4-one (Diisobutyl ketone; DIBK)	MDHS 88 ¥	25 ppm (148 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	82		
Dimethyl phthalate (DMP)	MDHS 104 §	5 mg/m ³	10 mg/m ³	240	15	1000	1000	4	15	GC-FID, GC-MS	ST 226-56	49		
Dimethyl sulphate (DMS)	MDHS 96	0.05 ppm (0.26 mg/m ³)		0.25-12		10-200		Up to 8		GC-ECD	ST 226-114	50		
Dimethyl sulphate (DMS)	MDHS 89	0.05 ppm (0.26 mg/m ³)		3-96		200		Up to 8		GC-MSD	ST 226-357	52		
Dimethyl sulphate	MDHS 104	0.05 ppm (0.26 mg/m ³)		1-10		20-100		Up to 2		GC-FID, GC-MS	ST 226-357	52		
1,4-Dioxane	MDHS 96	20 ppm (73 mg/m ³)		0.5-15		10-200		Up to 8		GC-FID	ST 226-01	48		
1,4-Dioxane	MDHS 88 ¥	20 ppm (73 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	82		
Diphenyl ether (Diphenyl oxide; Phenyl ether)	MDHS 88 ¥	1 ppm (7 mg/m ³)	2 ppm (14 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	82		
Diphenyl ether (vapour)	MDHS 96	1 ppm (7 mg/m ³)	2 ppm (14 mg/m ³)	1-50	1-3	10-200	10-200	Up to 8	15	GC-FID	ST 226-01	48		
Dusts (Inhalable)	MDHS 14/4	10 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT 225-58F ‡	108
Dusts (Respirable)	MDHS 14/4	4 mg/m ³		1440		3000		8		GR	CYC 225-69	124	FLT 225-58F ‡	108
Dusts (Respirable)	MDHS 14/4	4 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT 225-58F ‡	108
										FOAM	225-772	121		
Emery (inhalable dust)	MDHS 14/4	10 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT 225-58F ‡	108
Emery (respirable)	MDHS 14/4	4 mg/m ³		1440		3000		8		GR	CYC 225-69	124	FLT 225-58F ‡	108
Emery (respirable)	MDHS 14/4	4 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT 225-58F ‡	108
										FOAM	225-772	121		
Endosulfan	MDHS 94/2	0.1 mg/m ³	0.3 mg/m ³	960	30	2000	2000	8	15	GC-MS	IOM 225-70A	121	FLT 225-58F ‡	108
										ST	226-35-01	48		
Endosulfan-sulphate	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A	121	FLT 225-58F ‡	108
										ST	226-35-01	48		
Enflurane (Enthane; Ethrane)	MDHS 88 ¥	50 ppm (383 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	82		
Ethane-1,2-diol (particulate)	MDHS 14/4	10 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT 225-58F ‡	108
Ethane-1,2-diol (vapour) (Ethylene glycol; Glycol)	MDHS 88 ¥	20 ppm (52 mg/m ³)	40 ppm (104 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	82		

See page 244 for abbreviations.

Chemical Hazard	Agency Reference	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)							
Ethanol (Ethyl alcohol)	MDHS 104	1000 ppm (1920 mg/m ³)		1-1.2		20-100		Up to 1		GC-FID, GC-MS	ST	226-358	52			
Ethanol (Ethyl alcohol)	MDHS 104 §	1000 ppm (1920 mg/m ³)		0.1-1		20-200		Up to 8		GC-FID, GC-MS	ST	226-01	48			
Ethanol (Ethyl alcohol)	MDHS 88 ¥	1000 ppm (1920 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	82			
2-Ethoxyethanol (Cellosolve)	MDHS 104	2 ppm (8 mg/m ³)		1-5		20-100		Up to 2		GC-FID, GC-MS	ST	226-357	52			
2-Ethoxyethanol (Cellosolve)	MDHS 104	2 ppm (8 mg/m ³)		1-10		20-100		Up to 2		GC-FID, GC-MS	ST	226-358	52			
2-Ethoxyethanol (Cellosolve)	MDHS 104 §	2 ppm (8 mg/m ³)		1-10		20-200		Up to 8		GC-FID, GC-MS	ST	226-01	48			
2-Ethoxyethanol (Cellosolve)	MDHS 88 ¥	2 ppm (8 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	or	PS	575-002	82
2-Ethoxyethyl acetate (2-Cellosolve acetate)	MDHS 104	2 ppm (11 mg/m ³)		1-10		20-100		Up to 2		GC-FID, GC-MS	ST	226-357	or	ST	226-358	52
2-Ethoxyethyl acetate (2-Cellosolve acetate)	MDHS 104 §	2 ppm (11 mg/m ³)		1-10		20-200		Up to 8		GC-FID, GC-MS	ST	226-01	48			
2-Ethoxyethyl acetate (2-Cellosolve acetate)	MDHS 88 ¥	2 ppm (11 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	82			
Ethyl acetate	MDHS 104	200 ppm (734 mg/m ³)	400 ppm (1468 mg/m ³)	1-3.6	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST	226-357	52			
Ethyl acetate	MDHS 104	200 ppm (734 mg/m ³)	400 ppm (1468 mg/m ³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST	226-358	52			
Ethyl acetate	MDHS 104 §	200 ppm (734 mg/m ³)	400 ppm (1468 mg/m ³)	0.1-10	0.1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST	226-01	48			
Ethyl acetate	MDHS 88 ¥	200 ppm (734 mg/m ³)	400 ppm (1468 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	or	PS	575-002	82
Ethyl acrylate	MDHS 104	5 ppm (21 mg/m ³)	10 ppm (42 mg/m ³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST	226-357	52			
Ethyl acrylate	MDHS 104 §	5 ppm (21 mg/m ³)	10 ppm (42 mg/m ³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST	226-01	48			
Ethyl acrylate	MDHS 88 ¥	5 ppm (21 mg/m ³)	10 ppm (42 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	82			
Ethylbenzene	MDHS 104 §	100 ppm (441 mg/m ³)	125 ppm (552 mg/m ³)	1-24	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST	226-01	48			
Ethylbenzene	MDHS 88 ¥	100 ppm (441 mg/m ³)	125 ppm (552 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	or	PS	575-002	82
Ethyl formate	MDHS 104 §	100 ppm (308 mg/m ³)	150 ppm (462 mg/m ³)	0.3-10	0.3-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST	226-01	48			
Ethyl formate	MDHS 88 ¥	100 ppm (308 mg/m ³)	150 ppm (462 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	82			
Ethylene oxide	MDHS 104	1 ppm (1.8 mg/m ³)		0.43		20-100		Up to 0.3		GC-FID, GC-MS	ST	226-358	52			
Ethylene oxide	MDHS 88 ¥	1 ppm (1.8 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-005	82			
Fenoxycarb	MDHS 94/2			960		2000		8		GC-MS	IOM ST	225-70A 226-35-01	121 48	FLT	225-58F	108
Ferrous foundry particulate (inhalable dust)	MDHS 14/4	10 mg/m ³		960		2000		8		GR	IOM	225-70A	121	FLT	225-58F	108
Ferrous foundry particulate (respirable dust)	MDHS 14/4	4 mg/m ³		1440		3000		8		GR	CYC	225-69	124	FLT	225-58F	108
Ferrous foundry particulate (respirable dust)	MDHS 14/4	4 mg/m ³		960		2000		8		GR	IOM FOAM	225-70A 225-772	121 121	FLT	225-58F	108
Flour dust	MDHS 14/4	10 mg/m ³	30 mg/m ³	960	30	2000	2000	8	15	GR	IOM	225-70A	121	FLT	225-58F	108
Formaldehyde	MDHS 102	2 ppm (2.5 mg/m ³)	2 ppm (2.5 mg/m ³)	48-480	1.5-15	100-1000	100-1000	8	15	HPLC-PDA	ST	226-119	or	ST	226-120	50
Formaldehyde	MDHS 102	2 ppm (2.5 mg/m ³)	2 ppm (2.5 mg/m ³)	diffusive	diffusive	diffusive	diffusive			HPLC-PDA	PS	500-100	92			
2-Furaldehyde (furfural)	MDHS 104 §	2 ppm (8 mg/m ³)	5 ppm (20 mg/m ³)	1-10	1-1.5	20-100	20-100	Up to 8	15	GC-FID, GC-MS	ST	226-357	52			
Glass wool mineral fibre (see MMMF) (as inhalable dust)	MDHS 59/2 (MDHS 14/4)	5 mg/m ³		960		2000		8		GR	IOM	225-70A	121	FLT	225-58F	108
Glass wool mineral fibre (see MMMF) (as respirable fibres)	MDHS 59/2	2 fibres/ml		480		1000		8		PCM	FLT/CL FLT	225-54A 225-1913	or 100	FLT/CL	225-54	or
Glutaraldehyde	MDHS 102	0.05 ppm (0.2 mg/m ³)	0.05 ppm (0.2 mg/m ³)	48-480	1.5-15	100-1000	100-1000	8	15	HPLC-PDA	ST	226-119	or	ST	226-120	50
Glutaraldehyde	MDHS 102	0.05 ppm (0.2 mg/m ³)	0.05 ppm (0.2 mg/m ³)	diffusive	diffusive	diffusive	diffusive			HPLC-PDA	PS	500-100	92			
Glycerol, mist	MDHS 14/4	10 mg/m ³		960		2000		8		GR	IOM	225-70A	121	FLT	225-58F	108
Glycerol trinitrate	MDHS 104 §	0.01 ppm (0.095 mg/m ³)	0.02 ppm (0.19 mg/m ³)	3-100	3-15	200-1000	200-1000	Up to 8	15	GC-FID, GC-MS	ST	226-35-03	48			
Grain dust	MDHS 14/4	10 mg/m ³		960		2000		8		GR	IOM	225-70A	121	FLT	225-58F	108
Graphite (inhalable dust)	MDHS 14/4	10 mg/m ³		960		2000		8		GR	IOM	225-70A	121	FLT	225-58F	108
Graphite (respirable)	MDHS 14/4	4 mg/m ³		1440		3000		8		GR	CYC	225-69	124	FLT	225-58F	108
Graphite (respirable)	MDHS 14/4	4 mg/m ³		960		2000		8		GR	IOM FOAM	225-70A 225-772	121 121	FLT	225-58F	108
Gypsum (inhalable dust)	MDHS 14/4	10 mg/m ³		960		2000		8		GR	IOM	225-70A	121	FLT	225-58F	108

See page 244 for abbreviations.

Sampling Guide — UK (HSE)

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Chemical Hazard	Agency Reference	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)						
Gypsum (respirable)	MDHS 14/4	4 mg/m ³		1440		3000		8		GR	CYC 225-69	124	FLT	225-58F	108
Gypsum (respirable)	MDHS 14/4	4 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT	225-58F	108
											FOAM 225-772	121			
Halogeno-platinum compounds (as Pt)	ISO 15202:2020	0.002 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A	121	FLT	225-1930	100
Halogeno-platinum compounds (as Pt)	MDHS 91/2 ◊	0.002 mg/m ³		960		2000		8		XRFS	IOM 225-70A	121	FLT	225-1930	100
Halothane (Fluothane)	MDHS 88 ¥	10 ppm (82 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	82			
Hardwood dust (or wood dust mixture containing hardwood) (inhalable fraction)	MDHS 14/4	3 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT	225-58F	108
HDI (1,6-Hexamethylene diisocyanate) (as -NCO)	MDHS 25/4 Δ	0.02 mg/m ³	0.07 mg/m ³	480	15	1000	1000	8	15	HPLC	IMP 225-36-4	70	IT	225-22	70
											CST 225-1109	or	FLT	CONTACT	
											IOM 225-79A	121		SKC	
HDI (1,6-Hexamethylene diisocyanate) (as -NCO)	MDHS 25/4 **	0.02 mg/m ³	0.07 mg/m ³	960	15	2000	2000	8	15	HPLC	IOM 225-79A	121	FLT	CONTACT	
														SKC	
HDI (1,6-Hexamethylene diisocyanate) (as -NCO) (vapour only)	MDHS 25/4	0.02 mg/m ³	0.07 mg/m ³	900	30	2000	2000	7.5	15	HPLC	IOM 225-79A	121	FLT	CONTACT	
														SKC	
n-Heptane	MDHS 104	500 ppm (2085 mg/m ³)		1-10		20-100		Up to 2		GC-FID, GC-MS	ST 226-357	or	ST	226-358	52
n-Heptane	MDHS 104 §	500 ppm (2085 mg/m ³)		10		20-200		Up to 8		GC-FID, GC-MS	ST 226-01	48			
n-Heptane	MDHS 88 ¥	500 ppm (2085 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	or	PS	575-002	82
Heptan-2-one (2-Heptanone; Methyl n-amyl ketone)	MDHS 88 ¥	50 ppm (237 mg/m ³)	100 ppm (475 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	82			
Heptan-2-one (2-Heptanone; Methyl n-amyl ketone)	MDHS 104 §	50 ppm (237 mg/m ³)	100 ppm (475 mg/m ³)	1-25	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01	48			
Heptan-3-one (3-Heptanone; Ethyl butyl ketone)	MDHS 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	82
Heptan-3-one (3-Heptanone; Ethyl butyl ketone)	MDHS 104 §	35 ppm (166 mg/m ³)	100 ppm (475 mg/m ³)	1-25	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01	48			
Hexanal (Hexanaldehyde)	MDHS 102			48-480		100-1000		8		HPLC-PDA	ST 226-119	or	ST	226-120	50
Hexanal (Hexanaldehyde)	MDHS 102			diffusive	diffusive	diffusive	diffusive			HPLC-PDA	PS 500-100	92			
n-Hexane	MDHS 104	20 ppm (72 mg/m ³)		1-3.2		20-100		Up to 2		GC-FID, GC-MS	ST 226-357	52			
n-Hexane	MDHS 104	20 ppm (72 mg/m ³)		1-10		20-100		Up to 2		GC-FID, GC-MS	ST 226-358	52			
n-Hexane	MDHS 104 §	20 ppm (72 mg/m ³)		10		20-200		Up to 8		GC-FID, GC-MS	ST 226-01	48			
n-Hexane	MDHS 88 ¥	20 ppm (72 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	or	PS	575-002	82
Hexan-2-one (2-Hexanone; Methyl butyl ketone; MBK)	MDHS 88 ¥	5 ppm (21 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	82			
Hexan-2-one (2-Hexanone; Methyl butyl ketone; MBK)	MDHS 104 §	5 ppm (21 mg/m ³)		1-10		20-200		Up to 8		GC-FID, GC-MS	ST 226-01	48			
Hydrazine	MDHS 86/2 Δ	0.01 ppm (0.013 mg/m ³)	0.1 ppm (0.13 mg/m ³)	480		1000		8		HPLC-UV	IMP 225-36-1	70	IT	225-22	70
Hydrazine	MDHS 86/2	0.01 ppm (0.013 mg/m ³)	0.1 ppm (0.13 mg/m ³)	240		2000		2		HPLC-UV	SH 225-1107	114	FLT	225-58F ‡	108
Hydrogen cyanide	MDHS 56/3 Δ	0.9 ppm (1 mg/m ³)	4.5 ppm (5 mg/m ³)	36	15	200	1000	3	15	ISE	IMP 225-36-2	70	IT	225-22	70
											IOM 225-70A	121	FLT	225-1911	100
Hydroquinone	MDHS 98/3	0.5 mg/m ³		960		2000		8		HPLC-UV	IOM 225-70A	121	FLT	225-58F	108
											ST 226-35-03	48			
4-Hydroxy-4-methylpentan-2-one (Diacetone alcohol)	MDHS 88 ¥	50 ppm (241 mg/m ³)	75 ppm (362 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	82			
4-Hydroxy-4-methylpentan-2-one (diacetone alcohol)	MDHS 104 §	50 ppm (241 mg/m ³)	75 ppm (362 mg/m ³)	1-10	1-10	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01	48			
2-Hydroxypropyl acrylate	MDHS 104 §	0.5 ppm (2.7 mg/m ³)		10		100		Up to 8		GC-FID, GC-MS	ST 226-73	49			
Indium & compounds (as In)	ISO 15202:2020	0.1 mg/m ³	0.3 mg/m ³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A	121	FLT	225-1930	100
Iodomethane (Methyl iodide)	MDHS 88 ¥	2 ppm (12 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	82			
Iodomethane (methyl iodine)	MDHS 96	2 ppm (12 mg/m ³)		15-50		10-1000		Up to 8		GC-FID	ST 226-01	48			
Ipodione	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A	121	FLT	225-58F	108
											ST 226-35-01	48			
Iron oxide (fume) (as Fe)	ISO 15202:2020	5 mg/m ³	10 mg/m ³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A	121	FLT	225-1930	100
Iron salts (as Fe)	ISO 15202:2020	1 mg/m ³	2 mg/m ³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A	121	FLT	225-1930	100
Isobutyl acetate	MDHS 104	150 ppm (724 mg/m ³)	187 ppm (903 mg/m ³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357	or	ST	226-358	52
Isobutyl acetate	MDHS 104 §	150 ppm (724 mg/m ³)	187 ppm (903 mg/m ³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01	48			
Isobutyl acetate	MDHS 88 ¥	150 ppm (724 mg/m ³)	187 ppm (903 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	82			

See page 244 for abbreviations.

Chemical Hazard	Agency Reference	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)							
Isocyanates (all, except methyl isocyanate) (as -NCO)	MDHS 25/4 Δ	0.02 mg/m ³	0.07 mg/m ³	480	15	1000	1000	8	15	HPLC	IOM 225-36-4 CST 225-1109 IOM 225-79A	70 or 121	IT FLT	225-22 CONTACT SKC	70	
Isocyanates (all, except methyl isocyanate) (as -NCO)	MDHS 25/4 **	0.02 mg/m ³	0.07 mg/m ³	480	15	1000	1000	8	15	HPLC	IOM 225-79A	121	FLT	CONTACT SKC		
Isocyanates (all, except methyl isocyanate) (as -NCO) (vapour only)	MDHS 25/4	0.02 mg/m ³	0.07 mg/m ³	960	30	2000	2000	8	15	HPLC	IOM 225-79A	121	FLT	CONTACT SKC		
Isoflurane	MDHS 88 ¥	50 ppm (383 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	82				
IsoOctyl alcohol (mixed isomers)	MDHS 104 §	50 ppm (271 mg/m ³)		10		200		50 min		GC-FID, GC-MS	ST 226-01	48				
IsoOctyl alcohol (mixed isomers)	MDHS 88 ¥	50 ppm (271 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	82				
Isopropyl acetate	MDHS 104		200 ppm (849 mg/m ³)	1-6	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357	or	ST 226-358	52		
Isopropyl acetate	MDHS 104 §		200 ppm (849 mg/m ³)	0.1-9	0.1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01	48				
Isopropyl acetate	MDHS 88 ¥		200 ppm (849 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	or	PS 575-002	82		
Isovaleraldehyde	MDHS 102			48-480		100-1000		8		HPLC-PDA	ST 226-119	or	ST 226-120	50		
Isovaleraldehyde	MDHS 102			diffusive	diffusive	diffusive	diffusive			HPLC-PDA	PS 500-100	92				
Kaolin (respirable dust)	MDHS 14/4	2 mg/m ³		1440		3000		8		GR	CYC 225-69	124	FLT	225-58F	108	
Kaolin (respirable dust)	MDHS 14/4	2 mg/m ³		960		2000		8		GR	IOM 225-70A FOAM 225-772	121	FLT	225-58F	108	
Lead & lead compounds	MDHS 91/2	0.15 mg/m ³ #		960		2000		8		XRFS	IOM 225-70A	121	FLT	225-1930	100	
Lead & lead compounds	ISO 15202:2020	0.15 mg/m ³ #		960		2000		8		ICP-AES	IOM 225-70A	121	FLT	225-1930	100	
Limestone (inhalable, total)	MDHS 14/4	10 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT	225-58F	108	
Limestone (respirable)	MDHS 14/4	4 mg/m ³		1440		3000		8		GR	CYC 225-69	124	FLT	225-58F	108	
Limestone (respirable)	MDHS 14/4	4 mg/m ³		960		2000		8		GR	IOM 225-70A FOAM 225-772	121	FLT	225-58F	108	
Lindane	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A ST 226-35-01	121	FLT	225-58F	108	
Lithium hydride	ISO 15202:2020		0.02 mg/m ³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A	121	FLT	225-1930	100	
Lithium hydroxide	ISO 15202:2020		1 mg/m ³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A	121	FLT	225-1930	100	
Machine-made mineral fibre (MMMMF) (except for refractory ceramic fibres and special purpose fibres) (as inhalable dust)	MDHS 59/2	5 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT	225-58F	108	
Machine-made mineral fibre (MMMMF) (except for refractory ceramic fibres and special purpose fibres) (as respirable fibres)	MDHS 59/2	2 fibres/ml		480		1000		8		PCM	FLT/CL 225-54A FLT 225-1913	or	FLT/CL 225-54	or		
Magnesite (inhalable dust)	MDHS 14/4	10 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT	225-58F	108	
Magnesite (inhalable dust)	ISO 15202:2020	10 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A	121	FLT	225-1930	100	
Magnesite (respirable dust)	MDHS 14/4	4 mg/m ³		1440		3000		8		GR	CYC 225-69	124	FLT	225-58F	108	
Magnesite (respirable dust)	MDHS 14/4	4 mg/m ³		960		2000		8		GR	IOM 225-70A FOAM 225-772	121	FLT	225-58F	108	
Magnesite (respirable dust)	ISO 15202:2020	4 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A FOAM 225-772	121	FLT	225-58F	108	
Magnesite (respirable dust)	ISO 15202:2020	4 mg/m ³		1440		3000		8		ICP-AES	CYC 225-69	124	FLT	225-1930	100	
Magnesium oxide (as Mg) (inhalable dust fume)	ISO 15202:2020	10 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A	121	FLT	225-1930	100	
Magnesium oxide (as Mg) (respirable dust)	ISO 15202:2020	4 mg/m ³		1440		3000		8		ICP-AES	CYC 225-69	124	FLT	225-1930	100	
Magnesium oxide (as Mg) (respirable dust)	ISO 15202:2020	4 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A FOAM 225-772	121	FLT	225-58F	108	
Maleic anhydride	MDHS 104	1 mg/m ³	3 mg/m ³	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357	52				
Manganese & its inorganic compounds (as Mn) (inhalable fraction)	ISO 15202:2020	0.2 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A	121	FLT	225-1930	100	
Manganese & its inorganic compounds (as Mn) (respirable fraction)	ISO 15202:2020	0.05 mg/m ³		1440		3000		8		ICP-AES	CYC 225-69	124	FLT	225-1930	100	
Manganese & its inorganic compounds (as Mn) (respirable fraction)	ISO 15202:2020	0.05 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A	121	FLT	225-1930	100	
Manganese in welding fume	ISO 10882-1:2011			varies		750		varies		GR & others	H/SET 225-6200 CAL 225-6202	117	MINI FLT	225-6201	117	
Marble (total inhalable)	MDHS 14/4	10 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT	225-58F	108	
Marble (respirable)	MDHS 14/4	4 mg/m ³		1440		3000		8		GR	CYC 225-69	124	FLT	225-58F	108	
Marble (respirable)	MDHS 14/4	4 mg/m ³		960		2000		8		GR	IOM 225-70A FOAM 225-772	121	FLT	225-58F	108	

See page 244 for abbreviations.

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Chemical Hazard	Agency Reference	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)						
MDI (Methylenebis(4-phenyl isocyanate)) (as -NCO) (see Isocyanates)	MDHS 25/4 Δ	0.02 mg/m ³	0.07 mg/m ³	480	15	1000	1000	8	15	HPLC	IMP 225-36-4 CST 225-1109 IOM 225-79A	70 or 121	IT FLT	225-22 CONTACT SKC	70
MDI (Methylenebis(4-phenyl isocyanate)) (as -NCO) (see Isocyanates)	MDHS 25/4 **	0.02 mg/m ³	0.07 mg/m ³	960	15	2000	2000	8	15	HPLC	IOM 225-79A	121	FLT	CONTACT SKC	
MDI (Methylenebis(4-phenyl isocyanate)) (as -NCO) (vapour only) (see Isocyanates)	MDHS 25/4	0.02 mg/m ³	0.07 mg/m ³	900	30	2000	2000	450 mins	15	HPLC	IOM 225-79A	121	FLT	CONTACT SKC	
Mercury and divalent inorganic compounds including mercuric oxide and mercurous chloride (as mercury)	MDHS 91/2 ◊	0.02 mg/m ³		960		2000		8		XRFS	IOM 225-70A	121	FLT	225-1930	100
Metalaxyl	MDHS 94/2			960		2000		8		GC-MS	IOM ST 226-35-01	121 48	FLT	225-58F	108
Metalworking fluids (water-mix)	MDHS 95/3			960		2000		8		AAS/ICP-AES	IOM FLT 225-1825	121 107	FLT	225-1930	or
Methanol (Methyl alcohol)	MDHS 104 §	200 ppm (266 mg/m ³)	250 ppm (333 mg/m ³)	1-5	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-51	49			
2-Methoxyethanol (Methyl Cellosolve)	MDHS 104	1 ppm (3 mg/m ³)		1-3		20-100		Up to 2		GC-FID, GC-MS	ST 226-357	52			
2-Methoxyethanol (Methyl Cellosolve)	MDHS 104	1 ppm (3 mg/m ³)		1-5		20-100		Up to 2		GC-FID, GC-MS	ST 226-358	52			
2-Methoxyethanol (Methyl Cellosolve)	MDHS 104 §	1 ppm (3 mg/m ³)		6-50		10-50		Up to 8		GC-FID, GC-MS	ST 226-01	48			
2-Methoxyethanol (Methyl Cellosolve)	MDHS 88 ¥	1 ppm (3 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	or PS 575-002		82	
2-Methoxyethyl acetate (Methyl Cellosolve acetate; ethylene glycol monomethyl ether acetate)	MDHS 104	1 ppm (5 mg/m ³)		1-8		20-100		Up to 2		GC-FID, GC-MS	ST 226-357	52			
2-Methoxyethyl acetate (Methyl Cellosolve acetate; ethylene glycol monomethyl ether acetate)	MDHS 104	1 ppm (5 mg/m ³)		1-10		20-100		Up to 2		GC-FID, GC-MS	ST 226-358	52			
2-Methoxyethyl acetate (Methyl Cellosolve acetate; ethylene glycol monomethyl ether acetate)	MDHS 104 §	1 ppm (5 mg/m ³)		0.2-20		20-200		Up to 8		GC-FID, GC-MS	ST 226-01	48			
2-Methoxyethyl acetate (Methyl Cellosolve acetate; ethylene glycol monomethyl ether acetate)	MDHS 88 ¥	1 ppm (5 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	82			
(2-methoxymethylethoxy)propanol (Dipropylene glycol monomethyl ether; DPGME)	MDHS 104 §	50 ppm (308 mg/m ³)		10		100		Up to 8		GC-FID, GC-MS	ST 226-01	48			
(2-methoxymethylethoxy)propanol (Dipropylene glycol monomethyl ether; DPGME)	MDHS 88 ¥	50 ppm (308 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	82			
1-Methoxypropan-2-ol (Propylene glycol monomethyl ether; PGME)	MDHS 104 §	100 ppm (375 mg/m ³)	150 ppm (560 mg/m ³)	10	3	100	200	Up to 8	15	GC-FID, GC-MS	ST 226-01	48			
1-Methoxypropan-2-ol (Propylene glycol monomethyl ether; PGME)	MDHS 88 ¥	100 ppm (375 mg/m ³)	150 ppm (560 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	or PS 575-002		82	
1-Methoxypropyl acetate (1-Methoxy-2-propyl acetate; Propylene glycol monomethyl ether acetate; PGMEA)	MDHS 104 §	50 ppm (274 mg/m ³)	100 ppm (548 mg/m ³)	10	3	100	200	Up to 8	15	GC-FID, GC-MS	ST 226-01	48			
1-Methoxypropyl acetate (1-Methoxy-2-propyl acetate; Propylene glycol monomethyl ether acetate; PGMEA)	MDHS 88 ¥	50 ppm (274 mg/m ³)	100 ppm (548 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	or PS 575-002		82	
Methyl acetate	MDHS 104	200 ppm (616 mg/m ³)	250 ppm (770 mg/m ³)	1-7	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-358	52			
Methyl acetate	MDHS 88 ¥	200 ppm (616 mg/m ³)	250 ppm (770 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	82			
Methyl acetate	MDHS 104 §	200 ppm (616 mg/m ³)	250 ppm (770 mg/m ³)	0.2-10	0.2-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01	48			
Methyl acrylate	MDHS 104	5 ppm (18 mg/m ³)	10 ppm (36 mg/m ³)	1-6.5	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357	52			
Methyl acrylate	MDHS 88 ¥	5 ppm (18 mg/m ³)	10 ppm (36 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	82			
Methyl acrylate	MDHS 104 §	5 ppm (18 mg/m ³)	10 ppm (36 mg/m ³)	1-5	1-5	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01	48			
3-Methylbutan-1-ol (Isoamyl alcohol)	MDHS 104 §	100 ppm (366 mg/m ³)	125 ppm (458 mg/m ³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01	48			
3-Methylbutan-1-ol (Isoamyl alcohol)	MDHS 88 ¥	100 ppm (366 mg/m ³)	125 ppm (458 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	82			
Methyl-tert-butyl-ether (Methyl t-butyl ether; MTBE)	MDHS 88 ¥	50 ppm (183.5 mg/m ³)	100 ppm (367 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	82			
Methyl-tert-butyl-ether (Tertiary-butyl-methylether, Methyl t-butyl ether; MTBE)	MDHS 96	50 ppm (183.5 mg/m ³)	100 ppm (367 mg/m ³)	2-96	2-3	100-200	100-200	Up to 8	15	GC-FID	ST 226-37	49			

See page 244 for abbreviations.

Chemical Hazard	Agency Reference	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)						
Methylcyclohexanol	MDHS 104 §	50 ppm (237 mg/m ³)	75 ppm (356 mg/m ³)	1-15	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST	226-01	48		
Methylcyclohexanol	MDHS 88 ¥	50 ppm (237 mg/m ³)	75 ppm (356 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	or	PS	575-002 82
4,4'-Methylenedianiline (MDA)	MDHS 75/2	0.01 ppm (0.08 mg/m ³)		200		2000		Up to 8		HPLC-UV	IOM	225-70A	121	FLT	225-58F‡ 108
Methyl formate	MDHS 88 ¥	50 ppm (125 mg/m ³)	100 ppm (250 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	82		
5-Methylheptan-3-one (5-Methyl-3-heptanone; Ethyl amyl ketone; EAK)	MDHS 104 §	10 ppm (53 mg/m ³)	20 ppm (107 mg/m ³)	1-25	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST	226-01	48		
5-Methylheptan-3-one (5-Methyl-3-heptanone; Ethyl amyl ketone; EAK)	MDHS 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 82
5-Methylhexan-2-one (5-Methyl-2-hexanone; Methyl isoamyl ketone; MIAK)	MDHS 104 §	20 ppm (95 mg/m ³)	100 ppm (475 mg/m ³)	10		200		50 min		GC-FID, GC-MS	ST	226-01	48		
5-Methylhexan-2-one (5-Methyl-2-hexanone; Methyl isoamyl ketone; MIAK)	MDHS 88 ¥	20 ppm (95 mg/m ³)	100 ppm (475 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	82		
Methyl isocyanate (MIC) (as -NCO)	MDHS 25/4 Δ		0.02 ppm	480	15	1000	1000	8	15	HPLC	IMP CST IOM	225-36-4 225-1109 225-79A	70 or 121	IT FLT	225-22 CONTACT SKC 70
Methyl isocyanate (MIC) (as -NCO)	MDHS 25/4 **		0.02 ppm	960	30	2000	2000	8	15	HPLC	IOM	225-79A	121	FLT	CONTACT SKC
Methyl isocyanate (MIC) (as -NCO) (vapour only)	MDHS 25/4		0.02 ppm	900	30	2000	2000	450 mins	15	HPLC	IOM	225-79A	121	FLT	CONTACT SKC
Methyl methacrylate	MDHS 104	50 ppm (208 mg/m ³)	100 ppm (416 mg/m ³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID	ST	226-357	52		
Methyl methacrylate	MDHS 88 ¥	50 ppm (208 mg/m ³)	100 ppm (416 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	82		
Methyl methacrylate	MDHS 96	50 ppm (208 mg/m ³)	100 ppm (416 mg/m ³)	1-8	1-8	10-50	10-50	Up to 8	15	GC-FID	ST	226-30-06	48		
4-Methylpentan-2-ol (Methyl amyl alcohol; Methyl isobutyl carbinol)	MDHS 88 ¥	25 ppm (106 mg/m ³)	40 ppm (170 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	82		
4-Methylpentan-2-ol (Methyl amyl alcohol; Methyl isobutyl carbinol)	MDHS 104 §	25 ppm (106 mg/m ³)	40 ppm (170 mg/m ³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST	226-01	48		
4-Methylpentan-2-one (Methyl isobutyl ketone; MIBK; Hexone; Isopropyl acetone)	MDHS 104	50 ppm (208 mg/m ³)	100 ppm (416 mg/m ³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST	226-357	or	ST	226-358 52
4-Methylpentan-2-one (Methyl isobutyl ketone; MIBK; Hexone; Isopropyl acetone)	MDHS 104 §	50 ppm (208 mg/m ³)	100 ppm (416 mg/m ³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST	226-01	48		
4-Methylpentan-2-one (Methyl isobutyl ketone; MIBK; Hexone; Isopropyl acetone)	MDHS 88 ¥	50 ppm (208 mg/m ³)	100 ppm (416 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	82		
2-Methylpropan-1-ol (Isobutanol; Isobutyl alcohol)	MDHS 104	50 ppm (154 mg/m ³)	75 ppm (231 mg/m ³)	1-2.8	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST	226-357	52		
2-Methylpropan-1-ol (Isobutanol; Isobutyl alcohol)	MDHS 104	50 ppm (154 mg/m ³)	75 ppm (231 mg/m ³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST	226-358	52		
2-Methylpropan-1-ol (Isobutanol; Isobutyl alcohol)	MDHS 104 §	50 ppm (154 mg/m ³)	75 ppm (231 mg/m ³)	2-10	2-3	20-500	20-500	Up to 8	15	GC-FID, GC-MS	ST	226-01	48		
2-Methylpropan-1-ol (Isobutanol; Isobutyl alcohol)	MDHS 88 ¥	50 ppm (154 mg/m ³)	75 ppm (231 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	or	PS	575-002 82
2-Methylpropan-2-ol (t-Butanol)	MDHS 104 §	100 ppm (308 mg/m ³)	150 ppm (462 mg/m ³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST	226-01	48		
2-Methylpropan-2-ol (t-Butanol)	MDHS 72	100 ppm (308 mg/m ³)	150 ppm (462 mg/m ³)	2.5	2.5	5-200	5-200	Up to 8	15	GC-FID	ST	226-357	52		
2-Methylpropan-2-ol (t-Butanol)	MDHS 88 ¥	100 ppm (308 mg/m ³)	150 ppm (462 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	82		
N-Methyl-2-pyrrolidone	MDHS 96	10 ppm (40 mg/m ³)	20 ppm (80 mg/m ³)	0.5-96	0.5-3	50-200	50-200	Up to 8	15	GC-NPD, GC-FID	ST	226-01	48		
N-Methyl-2-pyrrolidone	MDHS 88 ¥	10 ppm (40 mg/m ³)	20 ppm (80 mg/m ³)	diffusive	diffusive	diffusive	diffusive				PS	575-001	82		
Mica (respirable)	MDHS 14/4	0.8 mg/m ³		1440		3000		8		GR	CYC	225-69	124	FLT	225-58F 108
Mica (respirable)	MDHS 14/4	0.8 mg/m ³		960		2000		8		GR	IOM FOAM	225-70A 225-772	121 121	FLT	225-58F 108
Molybdenum compounds (insoluble) (as Mo)	ISO 15202:2020	10 mg/m ³	20 mg/m ³	960	30	2000	2000	8	15	ICP-AES	IOM	225-70A	121	FLT	225-1930 100
Molybdenum compounds (soluble) (as Mo)	ISO 15202:2020	5 mg/m ³	10 mg/m ³	960	30	2000	2000	8	15	ICP-AES	IOM	225-70A	121	FLT	225-1930 100
NDI (1,5-Diisocyanatonaphthalene) (as -NCO) (see Isocyanates)	MDHS 25/4 Δ	0.02 mg/m ³	0.07 mg/m ³	480	15	1000	1000	8	15	HPLC	IMP CST IOM	225-36-4 225-1109 225-79A	70 or 121	IT FLT	225-22 CONTACT SKC 70
NDI (1,5-Diisocyanatonaphthalene) (as -NCO) (see Isocyanates)	MDHS 25/4 **	0.02 mg/m ³	0.07 mg/m ³	960	15	2000	2000	8	15	HPLC	IOM	225-79A	121	FLT	CONTACT SKC
NDI (1,5-Diisocyanatonaphthalene) (as -NCO) (vapour only) (see Isocyanates)	MDHS 25/4	0.02 mg/m ³	0.07 mg/m ³	900	30	2000	2000	450 mins	15	HPLC	IOM	225-79A	121	FLT	CONTACT SKC
Nickel and its water-insoluble inorganic compounds (except nickel tetracarbonyl) (as Ni)	ISO 15202:2020	0.5 mg/m ³		960		2000		8		ICP-AES	IOM	225-70A	121	FLT	225-1930 100
Nickel and its water-soluble inorganic compounds (except nickel tetracarbonyl) (as Ni)	ISO 15202:2020	0.1 mg/m ³		960		2000		8		ICP-AES	IOM	225-70A	121	FLT	225-1930 100

See page 244 for abbreviations.

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Chemical Hazard	Agency Reference	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)					
Nicotine	MDHS 96	0.5 mg/m ³	1.5 mg/m ³	0.5-600	0.5-15	100-1000	100-1000	8	15	GC-NPD	ST 226-93	50		
Nitrobenzene	MDHS 104	0.2 ppm (1 mg/m ³)		3-6		50		1-2		TD, GC	ST 226-357	52		
Nitrobenzene	MDHS 104 §	0.2 ppm (1 mg/m ³)		10-96		20-200		Up to 8		GC-FID, GC-MS	ST 226-10	48		
Nitroethane	MDHS 96	20 ppm (62 mg/m ³)	100 ppm (312 mg/m ³)	1.5-3	1.5-3	10-50	10-50	Up to 8	15	GC-FID	ST 226-3002A	48		
2-Nitropropane	MDHS 96	5 ppm (18 mg/m ³)		0.1-2		10-50		Up to 8		GC-FID	ST 226-110	50		
Oil mist, from mineral	MDHS 84/2			960		2000		8		GR	IOM 225-70A	121	FLT	225-58F 108
oil-based metalworking fluids														
Omethoate	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A	121	FLT	225-58F 108
											ST 226-35-01	48		
Osmium tetroxide (as Os)	MDHS 91/2 ◊	0.0002 ppm (0.002 mg/m ³)	0.0006 ppm (0.006 mg/m ³)	960	30	2000	2000	8	15	XRFS	IOM 225-70A	121	FLT	225-1930 100
Paracetamol (inhalable dust)	MDHS 14/4	10 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT	225-58F 108
Paraquat dichloride (ISO) (respirable dust)	MDHS 14/4	0.08 mg/m ³		1440		3000		8		GR	CYC 225-69	124	FLT	225-58F 108
Paraquat dichloride (ISO) (respirable dust)	MDHS 14/4	0.08 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT	225-58F 108
											FOAM 225-772	121		
Pentaerythritol (inhalable dust)	MDHS 14/4	10 mg/m ³	20 mg/m ³	960	30	2000	2000	8	15	GR	IOM 225-70A	121	FLT	225-58F 108
Pentaerythritol (respirable dust)	MDHS 14/4	4 mg/m ³		1440		3000		8		GR	CYC 225-69	124	FLT	225-58F 108
Pentaerythritol (respirable dust)	MDHS 14/4	4 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT	225-58F 108
											FOAM 225-772	121		
Pentan-2-one (2-Pentanone; Methyl propyl ketone)	MDHS 88 ¥	200 ppm (716 mg/m ³)	250 ppm (895 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	82		
Pentan-2-one (2-Pentanone; Methyl propyl ketone)	MDHS 104 §	200 ppm (716 mg/m ³)	250 ppm (895 mg/m ³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01	48		
Pentan-3-one (3-Pentanone; Diethyl ketone)	MDHS 88 ¥	200 ppm (716 mg/m ³)	250 ppm (895 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	or PS 575-002	82	
Pentane	MDHS 104	600 ppm (1800 mg/m ³)		1-5.5		20-100		Up to 2		GC-FID, GC-MS	ST 226-358	52		
Pentane	MDHS 104 §	600 ppm (1800 mg/m ³)		4		20-200		Up to 8		GC-FID, GC-MS	ST 226-01	48		
Pentane	MDHS 88 ¥	600 ppm (1800 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	82		
Pentyl acetates (all isomers) (Amyl acetates)	MDHS 88 ¥	50 ppm (270 mg/m ³)	100 ppm (541 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	or PS 575-002	82	
Pentyl acetates (all isomers) (Amyl acetates)	MDHS 104 §	50 ppm (270 mg/m ³)	100 ppm (541 mg/m ³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01	48		
Permethrin	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A	121	FLT	225-58F 108
											ST 226-35-01	48		
Peroxodisulphate salts	MDHS 79/2			960		2000		8		IC	IOM 225-70A	121	FLT	225-1911 100
2-Phenylpropene (alpha-Methyl styrene)	MDHS 104	50 ppm (246 mg/m ³)	100 ppm (491 mg/m ³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357	52		
2-Phenylpropene (alpha-Methyl styrene)	MDHS 88 ¥	50 ppm (246 mg/m ³)	100 ppm (491 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002	82		
Phosalone	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A	121	FLT	225-58F 108
											ST 226-35-01	48		
Phosphorus, yellow	ISO 15202:2020	0.1 mg/m ³	0.3 mg/m ³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A	121	FLT	225-1930 100
Phthalic anhydride (PA)	MDHS 62/2	4 mg/m ³	12 mg/m ³	960	30	2000	2000	8	15	HPLC-UV	IOM 225-70A	121	FLT	225-58F 108
											ST 226-35-01	48		
Pirimiphos-Methyl	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A	121	FLT	225-58F 108
											ST 226-35-01	48		
Plaster of Paris (inhalable dust)	MDHS 14/4	10 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT	225-58F 108
Plaster of Paris (respirable dust)	MDHS 14/4	4 mg/m ³		1440		3000		8		GR	CYC 225-69	124	FLT	225-58F 108
Plaster of Paris (respirable dust)	MDHS 14/4	4 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT	225-58F 108
											FOAM 225-772	121		
Platinum compounds, soluble (except certain halogeno-Pt compounds) (as Pt)	MDHS 91/2 ◊	0.002 mg/m ³		960		2000		8		XRFS	IOM 225-70A	121	FLT	225-1930 100
Platinum compounds, soluble (except certain halogeno-Pt compounds) (as Pt)	ISO 15202:2020	0.002 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A	121	FLT	225-1930 100
Platinum metal	MDHS 91/2 ◊	5 mg/m ³		960		2000		8		XRFS	IOM 225-70A	121	FLT	225-1930 100
Platinum metal	ISO 15202:2020	5 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A	121	FLT	225-1930 100
Polyvinyl chloride (inhalable dust)	MDHS 14/4	10 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT	225-58F 108
Polyvinyl chloride (respirable dust)	MDHS 14/4	4 mg/m ³		1440		3000		8		GR	CYC 225-69	124	FLT	225-58F 108
Polyvinyl chloride (respirable dust)	MDHS 14/4	4 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT	225-58F 108
											FOAM 225-772	121		
Portland cement (inhalable dust)	MDHS 14/4	10 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT	225-58F 108
Portland cement (respirable dust)	MDHS 14/4	4 mg/m ³		1440		3000		8		GR	CYC 225-69	124	FLT	225-58F 108

See page 244 for abbreviations.

Chemical Hazard	Agency Reference	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)						
Portland cement (respirable dust)	MDHS 14/4	4 mg/m ³		960		2000		8		GR	IOM FOAM	225-70A 225-772	121 121	FLT 121	225-58F 108
Potassium hydroxide	ISO 15202:2020		2 mg/m ³	960	30	2000	2000	8	15	ICP-AES	IOM	225-70A	121	FLT	225-1930 100
Propan-1-ol (n-Propanol)	MDHS 104	200 ppm (500 mg/m ³)	250 ppm (625 mg/m ³)	1-8	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST	226-358	52		
Propan-1-ol (n-Propanol)	MDHS 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 82
Propan-2-ol (2-Propanol; Isopropanol; Isopropyl alcohol)	MDHS 104	400 ppm (999 mg/m ³)	500 ppm (1250 mg/m ³)	1-4.4	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST	226-358	52		
Propan-2-ol (2-Propanol; Isopropanol; Isopropyl alcohol)	MDHS 88 ¥	400 ppm (999 mg/m ³)	500 ppm (1250 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	82		
Propan-2-ol (2-Propanol; Isopropanol; Isopropyl alcohol)	MDHS 104 §	400 ppm (999 mg/m ³)	500 ppm (1250 mg/m ³)	0.3-3	0.3-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST	226-01	48		
Propane-1,2-diol (particulates)	MDHS 14/4	10 mg/m ³		960		2000		8		GR	IOM	225-70A	121	FLT	225-58F 108
Propionaldehyde	MDHS 102			48-480		100-1000		8		HPLC-PDA	ST	226-119	or	ST	226-120 50
Propionaldehyde	MDHS 102			diffusive	diffusive	diffusive	diffusive			HPLC-PDA	PS	500-100	92		
Propranolol	MDHS 14/4	2 mg/m ³	6 mg/m ³	960	30	2000	2000	8	15	GR	IOM	225-70A	121	FLT	225-58F 108
n-Propyl acetate (1-Propyl acetate)	MDHS 104 §	200 ppm (849 mg/m ³)	250 ppm (1060 mg/m ³)	1-10	1-3	20-200	10-200	Up to 8	15	GC-FID, GC-MS	ST	226-01	48		
n-Propyl acetate (1-Propyl acetate)	MDHS 104	200 ppm (849 mg/m ³)	250 ppm (1060 mg/m ³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST	226-357	or	ST	226-358 52
n-Propyl acetate (1-Propyl acetate)	MDHS 88 ¥	200 ppm (849 mg/m ³)	250 ppm (1060 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	or	PS	575-002 82
Propylene oxide	MDHS 104	1 ppm (2.4 mg/m ³)		1		20-100		Up to 0.8		GC-FID, GC-MS	ST	226-358	52		
Propylene oxide	MDHS 88 ¥	1 ppm (2.4 mg/m ³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	or	PS	575-002 82
Propylene oxide	MDHS 96	1 ppm (2.4 mg/m ³)		0.5-5		10-200		Up to 8		GC-FID	ST	226-01	48		
Pulverized fuel ash (inhalable dust)	MDHS 14/4	10 mg/m ³		960		2000		8		GR	IOM	225-70A	121	FLT	225-58F 108
Pulverized fuel ash (respirable dust)	MDHS 14/4	4 mg/m ³		1440		3000		8		GR	CYC	225-69	124	FLT	225-58F 108
Pulverized fuel ash (respirable dust)	MDHS 14/4	4 mg/m ³		960		2000		8		GR	IOM FOAM	225-70A 225-772	121 121	FLT	225-58F 108
Pyridine	MDHS 104	5 ppm (16 mg/m ³)	10 ppm (33 mg/m ³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST	226-357	52		
Pyridine	MDHS 88 ¥	5 ppm (16 mg/m ³)	10 ppm (33 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	82		
Pyridine	MDHS 96	5 ppm (16 mg/m ³)	10 ppm (33 mg/m ³)	18-150	15	100-1000	1000	8	15	GC-FID	ST	226-01	48		
Pyrocatechol (Catechol)	MDHS 104 §	5 ppm (23 mg/m ³)		100		1000		100 min		GC-FID, GC-MS	ST	226-57	49		
Refractory ceramic fibres (RCF) & special purpose fibres (total inhalable)	MDHS 59/2	5 mg/m ³		960		2000		8		GR	IOM	225-70A	121	FLT	225-58F 108
Refractory ceramic fibres (RCF) & special purpose fibres (respirable fraction)	MDHS 59/2	0.3 fibre/ml		480		1000		8		PCM	FLT/CL FLT	225-54A 225-1913	or 100	FLT/CL	225-54 or 100
Resorcinol	MDHS 104 §	10 ppm (46 mg/m ³)	20 ppm (92 mg/m ³)	5-160	5-160	200-1000	200-1000	Up to 8	15	GC-FID, GC-MS	ST	226-57	49		
Rhodium metal fume & dust (as Rh)	ISO 15202:2020	0.1 mg/m ³	0.3 mg/m ³	960	30	2000	2000	8	15	ICP-AES	IOM	225-70A	121	FLT	225-1930 100
Rhodium soluble salts (as Rh)	ISO 15202:2020	0.001 mg/m ³	0.003 mg/m ³	960	30	2000	2000	8	15	ICP-AES	IOM	225-70A	121	FLT	225-1930 100
Rock wool mineral fibre (see MMMF) (as inhalable dust)	MDHS 59/2 (MDHS 14/4)	5 mg/m ³		960		2000		8		GR	IOM	225-70A	121	FLT	225-58F 108
Rock wool mineral fibre (see MMMF) (as respirable fibres)	MDHS 59/2	2 fibres/ml		480		1000		8		PCM	FLT/CL FLT	225-54A 225-1913	or 100	FLT/CL	225-54 or 100
Rosin-based solder flux fume (Colophony)	MDHS 83/3	0.05 mg/m ³	0.15 mg/m ³	960	30	2000	2000	8	15	GC-FID	H/SET CAL	225-6200 225-6202	117 117	MINI FLT	225-6201 225-8050 100
Rouge (total inhalable)	MDHS 14/4	10 mg/m ³		960		2000		8		GR	IOM	225-70A	121	FLT	225-58F 108
Rouge (respirable)	MDHS 14/4	4 mg/m ³		1440		3000		8		GR	CYC	225-69	124	FLT	225-58F 108
Rouge (respirable)	MDHS 14/4	4 mg/m ³		960		2000		8		GR	IOM FOAM	225-70A 225-772	121 121	FLT	225-58F 108
Rouge (total inhalable)	ISO 15202:2020	10 mg/m ³		960		2000		8		ICP-AES	IOM	225-70A	121	FLT	225-1930 100
Rouge (respirable)	ISO 15202:2020	4 mg/m ³		1440		3000		8		ICP-AES	CYC	225-69	124	FLT	225-1930 100
Rouge (respirable)	ISO 15202:2020	4 mg/m ³		960		2000		8		ICP-AES	IOM FOAM	225-70A 225-772	121 121	FLT	225-1930 100
Rubber fume (as cyclohexane-soluble material)	MDHS 47/3	0.6 mg/m ³		960		2000		8		GR, SE	IOM	225-70A	121	FLT	225-58F† 108
Rubber process dust (with rubber fume determined from same sample)	MDHS 47/3	6 mg/m ³		960		2000		8		GR	IOM	225-70A	121	FLT	225-58F† 108
Rubber process dust (only)	MDHS 14/4	6 mg/m ³		960		2000		8		GR	IOM	225-70A	121	FLT	225-58F 108
Selenium & compounds (except hydrogen selenide) (as Se)	ISO 15202:2020	0.1 mg/m ³		960		2000		8		ICP-AES	IOM	225-70A	121	FLT	225-1930 100
Silica, amorphous (inhalable dust)	MDHS 14/4	6 mg/m ³		960		2000		8		GR	IOM	225-70A	121	FLT	225-58F 108
Silica, amorphous (respirable dust)	MDHS 14/4	2.4 mg/m ³		1440		3000		8		GR	CYC	225-69	124	FLT	225-58F 108

See page 244 for abbreviations.

Sampling Guide — UK (HSE)

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Chemical Hazard	Agency Reference	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)							
Silica, amorphous (respirable dust)	MDHS 14/4	2.4 mg/m ³		960		2000		8		GR	IOM 225-70A FOAM 225-772	121 121	FLT	225-58F	108	
Silica, fused (respirable dust)	MDHS 14/4	0.08 mg/m ³		1440		3000		8		GR	CYC 225-69	124	FLT	225-58F	108	
Silica, fused (respirable dust)	MDHS 14/4	0.08 mg/m ³		960		2000		8		GR	IOM 225-70A FOAM 225-772	121 121	FLT	225-58F	108	
Silica, respirable crystalline (respirable fraction) (RCS; Cristobalite, respirable; Quartz, respirable)	MDHS 101/2	0.1 mg/m ³		1440		3000		8		IR, XRD	CYC 225-69	124	FLT	225-5-25	105	
Silicon (total inhalable)	MDHS 14/4	10 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT	225-58F	108	
Silicon (total respirable)	MDHS 14/4	4 mg/m ³		1440		3000		8		GR	CYC 225-69	124	FLT	225-58F	108	
Silicon (total respirable)	MDHS 14/4	4 mg/m ³		960		2000		8		GR	IOM 225-70A FOAM 225-772	121 121	FLT	225-58F	108	
Silicon carbide (not whiskers) (total inhalable)	MDHS 14/4	10 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT	225-58F	108	
Silicon carbide (not whiskers) (total respirable)	MDHS 14/4	4 mg/m ³		1440		3000		8		GR	CYC 225-69	124	FLT	225-58F	108	
Silicon carbide (not whiskers) (total respirable)	MDHS 14/4	4 mg/m ³		960		2000		8		GR	IOM 225-70A FOAM 225-772	121 121	FLT	225-58F	108	
Silver (soluble compounds as Ag)	ISO 15202:2020	0.01 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A	121	FLT	225-1930	100	
Silver metallic	ISO 15202:2020	0.1 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A	121	FLT	225-1930	100	
Slag wool mineral fibre (as inhalable dust)	MDHS 59/2 (MDHS 14/4)	5 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT	225-58F	108	
Slag wool mineral fibre (as MMMF) (as respirable fibres)	MDHS 59/2	2 fibres/ml		480		1000		8		PCM	FLT/CL 225-54A or FLT 225-1913	or 100	FLT/CL	225-54	or 100	
Softwood dust	MDHS 14/4	5 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT	225-58F	108	
Starch (respirable)	MDHS 14/4	4 mg/m ³		1440		3000		8		GR	CYC 225-69	124	FLT	225-58F	108	
Starch (respirable)	MDHS 14/4	4 mg/m ³		960		2000		8		GR	IOM 225-70A FOAM 225-772	121 121	FLT	225-58F	108	
Starch (total inhalable)	MDHS 14/4	10 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT	225-58F	108	
Styrene	MDHS 104	100 ppm (430 mg/m ³)	250 ppm (1080 mg/m ³)	1-10	1-1.5	20-100	20-00	Up to 2	15	GC-FID, GC-MS	ST 226-357	52				
Styrene	MDHS 88 ¶	100 ppm (430 mg/m ³)	250 ppm (1080 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-006	82				
Styrene	MDHS 104 §	100 ppm (430 mg/m ³)	250 ppm (1080 mg/m ³)	1-14	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01	48				
Sucrose	MDHS 14/4	10 mg/m ³	20 mg/m ³	960	30	2000	2000	8	15	GR	IOM 225-70A	121	FLT	225-58F	108	
Talc (respirable dust)	MDHS 14/4	1 mg/m ³		1440		3000		8		GR	CYC 225-69	124	FLT	225-58F	108	
Talc (respirable dust)	MDHS 14/4	1 mg/m ³		960		2000		8		GR	IOM 225-70A FOAM 225-772	121 121	FLT	225-58F	108	
Tantalum	MDHS 91/2 ◊	5 mg/m ³	10 mg/m ³	960		2000		8		XRFS	IOM 225-70A	121	FLT	225-1930	100	
Tantalum	ISO 15202:2020	5 mg/m ³	10 mg/m ³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A	121	FLT	225-1930	100	
2,4-TDI (2,4-Toluene diisocyanate) (as -NCO) (see Isocyanates)	MDHS 25/4 Δ	0.02 mg/m ³	0.07 mg/m ³	480	15	1000	1000	8	15	HPLC	IMP 225-36-4 CST 225-1109 IOM 225-79A	70 or 121	IT FLT	225-22 CONTACT SKC	70	
2,4-TDI (2,4-Toluene diisocyanate) (as -NCO) (see Isocyanates)	MDHS 25/4 **	0.02 mg/m ³	0.07 mg/m ³	960	15	2000	2000	8	15	HPLC	IOM 225-79A	121	FLT	CONTACT SKC		
2,4-TDI (2,4-Toluene diisocyanate) (as -NCO) (vapour only) (see Isocyanates)	MDHS 25/4	0.02 mg/m ³	0.07 mg/m ³	900	30	2000	2000	450 mins	15	HPLC	IOM 225-79A	121	FLT	CONTACT SKC		
2,6-TDI (2,6-Toluene diisocyanate) (as -NCO) (see Isocyanates)	MDHS 25/4 Δ	0.02 mg/m ³	0.07 mg/m ³	480	15	1000	1000	8	15	HPLC	IMP 225-36-4 CST 225-1109 IOM 225-79A	70 or 121	IT FLT	225-22 CONTACT SKC	70	
2,6-TDI (2,6-Toluene diisocyanate) (as -NCO) (see Isocyanates)	MDHS 25/4 **	0.02 mg/m ³	0.07 mg/m ³	960	15	2000	2000	8	15	HPLC	IOM 225-79A	121	FLT	CONTACT SKC		
2,6-TDI (2,6-Toluene diisocyanate) (as -NCO) (vapour only) (see Isocyanates)	MDHS 25/4	0.02 mg/m ³	0.07 mg/m ³	900	30	2000	2000	450 mins	15	HPLC	IOM 225-79A	121	FLT	CONTACT SKC		
Tellurium & compounds (except hydrogen telluride) as Te	ISO 15202:2020	0.1 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A	121	FLT	225-1930	100	
1,1,2,2-Tetrabromoethane	MDHS 96	0.5 ppm (7.2 mg/m ³)		50-100		20-1000		Up to 8		GC-FID	ST 226-10	48				
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene)	MDHS 104	20 ppm (138 mg/m ³)	40 ppm (275 mg/m ³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357	52				
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene)	MDHS 88 ¶	20 ppm (138 mg/m ³)	40 ppm (275 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	or	PS 575-002	82		
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene)	MDHS 104 §	20 ppm (138 mg/m ³)	40 ppm (275 mg/m ³)	1-40	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01	48				
Tetrachlorophthalic anhydride (TCPA)	MDHS 62/2			960		2000		8		HPLC-UV	IOM ST 225-70A 226-35-01	121 48	FLT	225-58F	108	
Tetradifon	MDHS 94/2			960		2000		8		GC-MS	IOM ST 225-70A 226-35-01	121 48	FLT	225-58F	108	

See page 244 for abbreviations.

Chemical Hazard	Agency Reference	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)					
Tetrahydrofuran	MDHS 88 ¥	50 ppm (150 mg/m³)	100 ppm (300 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	82	
Tetrahydrofuran	MDHS 96	50 ppm (150 mg/m³)	100 ppm (300 mg/m³)	1-9	1-3	10-200	10-200	Up to 8	15	GC-FID	ST	226-01	48	
Thallium (soluble compounds) (as Tl)	ISO 15202:2020	0.1 mg/m³		960		2000		8		ICP-AES	IOM	225-70A	121 FLT 225-1930 100	
Tin compounds (inorganic, except SnH4) (as Sn)	ISO 15202:2020	2 mg/m³	4 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM	225-70A	121 FLT 225-1930 100	
Tin compounds (organic, except Cyhexath (ISO)) (as Sn)	ISO 15202:2020	0.1 mg/m³	0.2 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM	225-70A	121 FLT 225-1930 100	
Titanium dioxide (total inhalable)	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM	225-70A	121 FLT 225-58F 108	
Titanium dioxide (total inhalable)	ISO 15202:2020	10 mg/m³		960		2000		8		ICP-AES	IOM	225-70A	121 FLT 225-1930 100	
Titanium dioxide (respirable)	ISO 15202:2020	4 mg/m³		1440		3000		8		ICP-AES	CYC	225-69	124 FLT 225-1930 100	
Titanium dioxide (respirable)	ISO 15202:2020	4 mg/m³		960		2000		8		ICP-AES	IOM FOAM	225-70A 225-772	121 FLT 225-1930 100	
Titanium dioxide (respirable)	MDHS 14/4	4 mg/m³		1440		3000		8		GR	CYC	225-69	124 FLT 225-58F 108	
Titanium dioxide (respirable)	MDHS 14/4	4 mg/m³		960		2000		8		GR	IOM FOAM	225-70A 225-772	121 FLT 225-58F 108	
o-, m-, p-Tolualdehyde	MDHS 102			48-480		100-1000		8		HPLC-PDA	ST	226-119	or ST 226-120 50	
o-Tolualdehyde	MDHS 102			diffusive	diffusive	diffusive	diffusive			HPLC-PDA	PS	500-100	92	
Toluene	MDHS 104	50 ppm (191 mg/m³)	100 ppm (384 mg/m³)	1-10	1.0-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST	226-357	or ST 226-358 52	
Toluene	MDHS 104	50 ppm (191 mg/m³)	100 ppm (384 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID, GC-MS	ST	226-521	97	
Toluene	MDHS 88 ¥	50 ppm (191 mg/m³)	100 ppm (384 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	or PS 575-002 82	
Toluene	MDHS 104 §	50 ppm (191 mg/m³)	100 ppm (384 mg/m³)	1-8	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST	226-01	48	
o-Toluidine (2-methylaniline)	MDHS 75/2	0.1 ppm (0.5 mg/m³)		200		2000		Up to 8		HPLC-UV	IOM ST	225-70A 226-35	121 FLT 225-58F‡ 108 48	
o-Toluidine (2-methylaniline)	MDHS 104 §	0.1 ppm (0.5 mg/m³)		10-150		20-200		Up to 8		GC-FID, GC-MS	ST	226-10	48	
Tolylfluorid	MDHS 94/2			960		2000		8		GC-MS	IOM ST	225-70A 226-35-01	121 FLT 225-58F 108 48	
Triazophos	MDHS 94/2			960		2000		8		GC-MS	IOM ST	225-70A 226-35-01	121 FLT 225-58F 108 48	
1,1,1-Trichloroethane	MDHS 104	100 ppm (555 mg/m³)	200 ppm (1110 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST	226-358	52	
1,1,1-Trichloroethane	MDHS 104 §	100 ppm (555 mg/m³)	200 ppm (1110 mg/m³)	0.1-8	0.1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST	226-01	48	
1,1,1-Trichloroethane	MDHS 88 ¥	100 ppm (555 mg/m³)	200 ppm (1110 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	82	
Trichloroethylene (1,1,2-Trichloroethene)	MDHS 104 §	100 ppm (550 mg/m³)	150 ppm (820 mg/m³)	0.2-30	0.2-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST	226-01	48	
Trichloroethylene (1,1,2-Trichloroethene)	MDHS 104	100 ppm (550 mg/m³)	150 ppm (820 mg/m³)	1-5.6	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST	226-357	52	
Trichloroethylene (1,1,2-Trichloroethene)	MDHS 104	100 ppm (550 mg/m³)	150 ppm (820 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST	226-358	52	
Trichloroethylene (1,1,2-Trichloroethene)	MDHS 88 ¥	100 ppm (550 mg/m³)	150 ppm (820 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	or PS 575-002 82	
Triglycidyl isocyanurate (TGIC)	MDHS 85/2	0.1 mg/m³		200		2000		100 min		HPLC-UV	IOM	225-70A	121 FLT 225-58F 108	
Trimellitic anhydride (TMA; 1,2,4-Benzenetricarboxylic anhydride)	MDHS 62/2	0.04 mg/m³	0.12 mg/m³	960	30	2000	2000	8	15	HPLC-UV	IOM ST	225-70A 226-35-01	121 FLT 225-58F 108 48	
Trimethylbenzenes (all isomers or mixtures)	MDHS 104	25 ppm (125 mg/m³)		1-10		20-100		Up to 2		GC-FID, GC-MS	ST	226-357	or ST 226-358 52	
Trimethylbenzenes (all isomers or mixtures)	MDHS 104 §	25 ppm (125 mg/m³)		12		50		4		GC-FID, GC-MS	ST	226-01	48	
Trimethylbenzene (all isomers or mixtures)	MDHS 88 ¥	25 ppm (125 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	or PS 575-002 82	
3,5,5-Trimethylcyclohex-2-enone	MDHS 104		5 ppm (29 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST	226-357	52	
3,5,5-Trimethylcyclohex-2-enone	MDHS 96		5 ppm (29 mg/m³)	2-25	2-3	10-1000	10-1000	Up to 8	15	GC-FID	ST	226-93	50	
3,5,5-Trimethylcyclohex-2-enone	MDHS 88 ¥		5 ppm (29 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-001	82	
Tungsten & insoluble compounds & others (as W)	ISO 15202:2020	5 mg/m³	10 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM	225-70A	121 FLT 225-1930 100	
Tungsten & soluble compounds (as W)	ISO 15202:2020	1 mg/m³	3 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM	225-70A	121 FLT 225-1930 100	
Turpentine	MDHS 104 §	100 ppm (566 mg/m³)	150 ppm (850 mg/m³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST	226-01	48	
Valeraldehyde	MDHS 102			48-480		100-1000		8		HPLC-PDA	ST	226-119	or ST 226-120 50	
Valeraldehyde	MDHS 102			diffusive	diffusive	diffusive	diffusive			HPLC-PDA	PS	500-100	92	
Vanadium pentoxide	ISO 15202:2020	0.05 mg/m³		960		2000		8		ICP-AES	IOM	225-70A	121 FLT 225-1930 100	
Vinyl acetate	MDHS 88 ¥	5 ppm (17.6 mg/m³)	10 ppm (35.2 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS	575-002	82	
Vinyl chloride	MDHS 104 §	1 ppm (2.6 mg/m³)		0.7-5		50		Up to 8		GC-FID, GC-MS	ST	226-01 ✓	48	

See page 244 for abbreviations.

Chemical Hazard	Agency Reference	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)					
Vinylidene chloride (1,1-dichloroethene)	MDHS 88 ¥	2 ppm (8 mg/m ³)	5 ppm (20 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	82		
Vinylidene chloride (1,1-dichloroethene)	MDHS 104 §	2 ppm (8 mg/m ³)	5 ppm (20 mg/m ³)	2.5-7	2.5-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01	48		
Welding fume	ISO 10882-1:2011	See specific components		varies		750		varies		GR & others	H/SET CAL	225-6200 117	MINI 225-6201 117	FLT 225-8050 100
Wood dust	MDHS 14/4	See Hardwood / Softwood dust												
Wool process dust	MDHS 14/4	10 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT 225-58F	108
Xylene (o-,m-,p-, or mixed isomers)	MDHS 104	50 ppm (220 mg/m ³)	100 ppm (441 mg/m ³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357	or	ST 226-358	52
Xylene (o-,m-,p-, or mixed isomers)	MDHS 88 ¥	50 ppm (220 mg/m ³)	100 ppm (441 mg/m ³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001	or	PS 575-002	82
Xylene (o-,m-,p-, or mixed isomers)	MDHS 104 §	50 ppm (220 mg/m ³)	100 ppm (441 mg/m ³)	2-23	2-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01	48		
Yttrium	ISO 15202:2020	1 mg/m ³	3 mg/m ³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A	121	FLT 225-1930	100
Zinc chloride (fume)	ISO 15202:2020	1 mg/m ³	2 mg/m ³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A	121	FLT 225-1930	100
Zinc distearate (inhalable dust)	MDHS 14/4	10 mg/m ³	20 mg/m ³	960	30	2000	2000	8	15	GR	IOM 225-70A	121	FLT 225-58F	100
Zinc distearate (inhalable dust)	ISO 15202:2020	10 mg/m ³	20 mg/m ³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A	121	FLT 225-1930	100
Zinc distearate (respirable dust)	MDHS 14/4	4 mg/m ³		1440		3000		8		GR	CYC 225-69	124	FLT 225-58F	108
Zinc distearate (respirable dust)	MDHS 14/4	4 mg/m ³		960		2000		8		GR	IOM 225-70A	121	FLT 225-58F	108
Zinc distearate (respirable dust)	MDHS 14/4	4 mg/m ³								FOAM	225-772	121		
Zinc distearate (respirable dust)	ISO 15202:2020	4 mg/m ³		1440		3000		8		ICP-AES	CYC 225-69	124	FLT 225-1930	100
Zinc distearate (respirable dust)	ISO 15202:2020	4 mg/m ³		960		2000		8		ICP-AES	IOM 225-70A	121	FLT 225-1930	100
Zinc distearate (respirable dust)	ISO 15202:2020	4 mg/m ³								FOAM	225-772	121		
Zirconium compounds (as Zr)	ISO 15202:2020	5 mg/m ³	10 mg/m ³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A	121	FLT 225-1930	100

√ This application requires two tubes.

** MDHS 25/4 Appendix 2 alternative sampler — limitations apply, refer to method.

• From EH40/2005: Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit should be used

† The sampling parameters shown are suggestions based on the equipment, materials, ranges of volume, flow rate and time specified in the method. It is the responsibility of those performing the sampling and analysis to select suitable sampling parameters, method and equipment for their application.

§ MDHS 104 Method 3 — sampling flow rates, sampling times and analysis for specific analytes sourced from the US regulatory authorities.

△ An alternative published method avoiding the use of an impinger is advisable where there is a risk of spillage of the impinger solution during personal sampling

◇ Analysis using L spectral lines for elements with atomic numbers under 82 may be semi-quantitative or qualitative. Refer to MDHS 91/2.

♣ Exposure limit for 'process generated' Chromium (VI) compounds is 0.025 mg/m³.

‡ Filter must be chemically treated prior to sampling.

Exposure limit applies to "lead other than lead alkyls". Lead alkyls have an occupational exposure limit of 0.1 mg/m³. Refer to Control of Lead at Work Regulations.

¥ Refer to SKC VOC Chek Passive Sampler Selection Guide



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