

List No.	Substance	CAS-No.	EINECS-No.
79	Arsenic and compounds, except arsine (as As)	7440-38-2	231-148-6

No.	Source and method name	Language	Year of publication	Principle of the method	Flow rate/ Recommended air volume	LOQ/ Validated working range	Indicative rating	Remarks
1	ISO 11041 Workplace air - Determination of particulate arsenic and arsenic compounds and arsenic trioxide vapour	English	1996	Particulates trapped on an MCE filter in an inhalable sampler and As ₂ O ₃ vapour on a Na ₂ CO ₃ impregnated back-up paper pad. Dissolution with HNO ₃ , H ₂ SO ₄ and H ₂ O ₂ . Analysis by HGAAS.	Flow rate: Sampler-dependent Recommended sampling time: 15 min–8 h	LOQ: 0,00005 mg/m ³ 960 l	A	
2	ISO 15202 Workplace air — Determination of metals and metalloids in airborne particulate matter by Inductively Coupled Plasma Atomic Emission Spectrometry Part 1: Sampling Part 2: Sample preparation Part 3: Analysis	English French	Part 1:2000 Part 2:2001 Part 3:2004	Particulates trapped on a suitable filter in an inhalable sampler. Hotplate dissolution with 1+1 HNO ₃ and HCl; or 1+1 H ₂ SO ₄ , H ₂ O ₂ and HCl; or HNO ₃ , HClO ₄ and, if silicates are present, HF. Ultrasonic dissolution with HF and HNO ₃ . Microwave dissolution with HNO ₃ and HF; or HNO ₃ , HClO ₄ and HF; or HNO ₃ and HClO ₄ . Analysis by ICP-AES.	Flow rate: Sampler-dependent Recommended sampling time: 15 min–8 h	LOQ: 0,0032 mg/m ³ 480 l	A	Sampling procedure not suitable for As ₂ O ₃
3	MDHS 41/2 Arsenic and inorganic compounds of arsenic (except arsine) in air	English	1995	Particulates are trapped on an MCE filter in an inhalable sampler and As ₂ O ₃ vapour on a Na ₂ CO ₃ impregnated back-up paper pad. Dissolution with HNO ₃ , H ₂ SO ₄ and H ₂ O ₂ . Analysis by HGAAS.	2 l/min 30–960 l	LOQ: 0,00005 mg/m ³ 960 l	A	Similar method described in ISO 11041

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4	MDHS 91 Metals and metalloids in workplace air by X-ray fluorescence spectrometry	English	1998	Particulates are trapped on an MCE or other suitable filter mounted in an inhalable sampler. Analysis by XRF.	2 l/min 240-960 l	LOQ: 0,0042 mg/m ³ 240 l	A	Filter only analysis Sampling procedure not suitable for As ₂ O ₃
5	MétroPol 023 Arsenic – Arsine – Phosphine - Stibine	French	2003	Particulates and As ₂ O ₃ vapour are trapped on a Na ₂ CO ₃ impregnated quartz fiber filter in a 37 mm cassette filter holder. Ultrasonic dissolution with HF and HNO ₃ in the sampling cassette. Analysis by ETAAS or ICP-AES (HGAAS analysis also possible).	1 l/min 240 l	LOD: ETAAS: 0,0002 mg/m ³ ICP-AES 0,006 mg/m ³	B	Inhalable sampler not used, but wall deposits analysed AsH ₃ , PH ₃ and SbH ₃ may be determined at the same time, if required No performance data published in the method Similar methods described in ISO 11041 and OSHA ID-105
6	BIA 6195-1 Arsen	German, English	1989	Particulates trapped on binder-free glass fibre filter in an inhalable sampler. Dissolution in HNO ₃ and HCl. Analysis by ETAAS.	3,5 l/min 420 l	LOQ: 0,002 mg/m ³ 420 l	B	Brief method description Sampling procedure not suitable for As ₂ O ₃ Similar method described in OSHA ID-105

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7	BIA 6195-2 Arsen	German, English	1990	Particulates trapped on binder-free glass fibre filter in an inhalable sampler. Dissolution in HNO ₃ and HCl. Analysis by HGAAS.	3,5 l/min 420 l	LOQ: 0,002 mg/m ³ 420 l	B	Brief method description Sampling procedure not suitable for As ₂ O ₃ Similar method described in ISO 11041
8	INSHT MA-035 Arsenic, its particulate compounds and As ₂ O ₃ vapour in air	Spanish	1996	Particulates trapped on MCE filter and Na ₂ CO ₃ impregnated back-up paper pad in a 37 mm cassette filter holder. Dissolution with HNO ₃ , H ₂ SO ₄ and H ₂ O ₂ . Analysis by HGAAS.	1-2 l/min	LOQ: 0,0001 mg/m ³ 480 l	B	Inhalable sampler not used Similar method described in ISO 11041
9	NIOSH 7900 Arsenic and compounds as As (except AsH ₃ and As ₂ O ₃)	English	1994	Particulates trapped on MCE filter in a 37 mm cassette filter holder. Hotplate dissolution with HNO ₃ , H ₂ SO ₄ and HClO ₄ . Analysis by HGAAS.	1-3 l/min 30-1000 l	LOQ: 0,0002 mg/m ³ 480 l	B	Inhalable sampler not used As ₂ O ₃ sampling not quantitative Similar method described in ISO 11041

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10	NIOSH 7901 Arsenic trioxide as As	English	1994	Particulates and trapped on Na ₂ CO ₃ impregnated MCE filter and back-up paper pad) in a 37 mm cassette filter holder. Hotplate dissolution HNO ₃ and H ₂ O ₂ . Analysis by ETAAS.	1-3 l/min 30-1000 l	LOQ: 0,0004 mg/m ³ 480 l	C	Inhalable sampler not used Impregnated membrane filters become brittle on storage Similar method described in OSHA ID-105
11	NIOSH 7300 Elements by ICP (nitric/perchloric ashing)	English	2003	Particulates trapped on MCE or PVC filter in a 37 mm cassette filter holder. Hotplate dissolution with HNO ₃ and HClO ₄ . Analysis by ICP-AES.	1-4 l/min 5-2000 l	LOQ: 0,016 mg/m ³ 30 l 0,001 mg/m ³ 480 l	B	Inhalable sampler not used As ₂ O ₃ sampling not quantitative Similar method described in ISO 15202
12	NIOSH 7301 Elements by ICP (aqua regia ashing)	English	2003	Particulates trapped on a cellulose ester or PVC membrane filter mounted in a 37 mm closed-face cassette. Hotplate dissolution with HCl and HNO ₃ . Analysis by ICP-AES	1-4 l/min 5-2000 l	LOQ: 0,016 mg/m ³ 30 l 0,001 mg/m ³ 480 l	B	Inhalable sampler not used As ₂ O ₃ sampling not quantitative Similar method described in ISO 15202
13	NIOSH 7303 Elements by ICP (Hot block HCl/HNO ₃ digestion)	English	2003	Particulates trapped on a cellulose ester membrane filter mounted in a 37 mm closed-face cassette. Hot block dissolution with HCl and HNO ₃ . Analysis by ICP-AES.	1-4 l/min 8 l-100 m ³	LOQ: 0,0083 mg/m ³ 30 l 0,00052 mg/m ³ 480 l	B	Inhalable sampler not used As ₂ O ₃ sampling not quantitative Similar method described in ISO 15202

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14	OSHA ID-105 Inorganic arsenic in workplace air	English	1991	Particulates trapped on n MCE filter and treated backup pad if required. Dissolution in HNO ₃ and HCl. Analysis by ETAAS.	2 l/min 480-960 l	LOQ: 0,0005 mg/m ³ 480 l	B	Inhalable sampler not used AsH ₃ may be determined at the same time, if required