



Industrial Hygiene Sampling Guide

1.) Active Samplers

Analyte	Method Reference	Sampling Media	Flow Rate (L/min)	Air Volume (L)	Desorption Solvent / Digestion	Analytical Technique	Special Handling Instruction
Acetic Acid	NIOSH 1603	Charcoal	0.01 - 1.0	20 – 300	Formic acid	GC/FID	At least 7 days at 25°C
Acetone	NIOSH 1300	Charcoal	0.01 - 0.2	0.5 – 3	CS ₂	GC/FID	-
Acetonitrile	NIOSH 1606	Charcoal (400/200mg)	0.01 - 0.2	1 – 25	DCM / MOH (85:15)	GC/FID	Keep cold for shipment, at least 30 days at 5°C
Alkaline dust	NIOSH 7401	PTFE (1µm)	1.0 – 4.0	70 – 1,000	0.01N HCl	Acid-Base Titration	At least 7 days at 25 °C
Aluminum	NIOSH 7303	MCE (0.8µm)	1.0 – 4.0	2 – 10,000	HNO ₃	ICP/OES	-
Ammonia	NIOSH 6015	Sulfuric acid-treated silica gel	0.1 - 0.2	0.1 – 96	Water	UV	-
Antimony	NIOSH 7303	MCE (0.8µm)	1.0 – 4.0	3 – 100,000	HNO ₃	ICP/MS	-
Arsenic	NIOSH 7303	MCE (0.8µm)	1.0 – 4.0	8 – 5,000,000	HNO ₃	ICP/MS	-
Barium	NIOSH 7303	MCE (0.8µm)	1.0 – 4.0	1 – 100,000	HNO ₃	ICP/OES	-
Benzene	NIOSH 1501	Charcoal	≤ 0.20	5 – 30	CS ₂	GC/FID	30 days at 5°C
Beryllium	NIOSH 7303	MCE (0.8µm)	1.0 – 4.0	35 – 2,500,000	HNO ₃	ICP/OES	-
Biphenyl	NIOSH 2530	Tenax	0.01 - 0.5	15 – 30	CCl ₄	GC/FID	7 days at room temperature
	OSHA PV2022	XAD-7	0.2	20	CS ₂	GC/FID	11 days at room temperature
Boron	NIOSH 7303	MCE (0.8µm)	1.0 - 4.0	1 – 3,300	HNO ₃	ICP/MS	-
1-Butanol	NIOSH 1401	Charcoal	0.01 - 0.2	2 – 10	1% 2-propanol in CS ₂	GC/FID	Store in freezer
n-Butyl Acetate	NIOSH 1450	Charcoal	0.01 - 0.2	1 – 10	CS ₂	GC/FID	Up to 30 days at 4°C
Cadmium	NIOSH 7303	MCE (0.8µm)	1.0 – 4.0	3 – 500,000	HNO ₃	ICP/OES	-
Carbitol Acetate	OSHA PV2013	Charcoal	0.2	10	DCM / MOH (95:5)	GC/FID	14 days at room temperature
Carbon Black	NIOSH 5000	PVC (5µm)	1.0 – 2.0	30 – 570	-	Gravimetric	-
Carbon Tetrachloride	NIOSH 1003	Charcoal	0.01 to 0.2	3 – 150	CS ₂	GC/FID	30 days
Chloroform	NIOSH 1003	Charcoal	0.01 to 0.2	1 – 50	CS ₂	GC/FID	30 days
Chromium	NIOSH 7303	MCE (0.8µm)	1.0 – 4.0	8 – 500,000	HNO ₃	ICP/OES	-
Cobalt	NIOSH 7303	MCE (0.8µm)	1.0 – 4.0	3 – 500,000	HNO ₃	ICP/OES	-
Copper	NIOSH 7303	MCE (0.8µm)	1.0 – 4.0	15 – 500,000	HNO ₃	ICP/OES	-
Cyclohexanone	NIOSH 1300	Charcoal	0.01 to 0.2	1 – 10	CS ₂	GC/FID	-
1,2-Dichloroethane	NIOSH 1003	Charcoal	0.01 - 0.2	1 – 50	CS ₂	GC/FID	30 days
Dichloromethane (Methylene Chloride)	NIOSH 1005	Charcoal	0.01 - 0.2	0.5 - 2.5	CS ₂	GC/FID	Separate front & back/ 30 days at 5°C
Diethyl ether (Ethyl ether)	NIOSH 1610	Charcoal	0.01 - 0.2	0.25 – 3	CS ₂	GC/FID	14 days at 5°C
Ethanol	NIOSH 1400	Charcoal	≤ 0.05	0.1 – 1	1% 2-butanol in CS ₂	GC/FID	Store in freezer



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Ethyl acetate	NIOSH 1457	Charcoal	0.01 - 0.2	0.1 – 10	CS ₂	GC/FID	Refrigerated / 6 days at 5 °C
Ethyl benzene	NIOSH 1501	Charcoal	≤ 0.20	1 – 24	CS ₂	GC/FID	30 days at 5°C
2-Ethylhexyl Acrylate	OSHA PV2026	Charcoal (TBC)	0.1	12	CS ₂	GC/FID	14 days at room temperature
Formaldehyde	NIOSH 2016	Silica gel	0.03 - 1.5	1 – 15	ACN	HPLC	34 days at 5°C
Formaldehyde	NIOSH 2541	XAD-2	0.01 - 0.10	1 – 36	Toluene	GC/FID	21 days at 25°C
n-Heptane	NIOSH 1500	Charcoal	-	-	CS ₂	GC/FID	30 days at 5°C
n-Hexane	NIOSH 1500	Charcoal	0.01 - 0.20	-	CS ₂	GC/FID	30 days at 5°C
Hydrobromic acid	NIOSH 7903	Silica gel	0.2 - 0.5	3 – 100	NaHCO ₃ / Na ₂ CO ₃	IC	At least 21 days at 25 °C
Hydrochloric acid	NIOSH 7903	Silica gel	0.2 - 0.5	3 – 100	NaHCO ₃ / Na ₂ CO ₃	IC	At least 21 days at 25 °C
Hydrofluoric acid	NIOSH 7903	Silica gel	0.2 - 0.5	3 – 100	NaHCO ₃ / Na ₂ CO ₃	IC	At least 21 days at 25 °C
Indium	NIOSH 7303	MCE (0.8µm)	1.0 – 4.0	15 – 500,000	HNO ₃	ICP/OES	-
Iron	NIOSH 7303	MCE (0.8µm)	1.0 – 4.0	1 – 5,000	HNO ₃	ICP/OES	-
Isopropanol	NIOSH 1400	Charcoal	0.01 - 0.2	0.3 – 3	1% 2-butanol in CS ₂	GC/FID	Store in freezer
Lead	NIOSH 7303	MCE (0.8µm)	1.0 – 4.0	35 – 100,000	HNO ₃	ICP/OES	-
Magnesium	NIOSH 7303	MCE (0.8µm)	1.0 – 4.0	1 – 10,000	HNO ₃	ICP/OES	-
Manganese	NIOSH 7303	MCE (0.8µm)	1.0 – 4.0	0.05 – 10,000	HNO ₃	ICP/OES	-
Mercury	NIOSH 6009	Hopcalite (200mg)	0.15 – 0.25	2 – 100	HNO ₃	ICP/MS	30 days at 25°C
Methanol	NIOSH 2000	Silica gel	0.02 - 0.2	1 – 5	Water / Isopropanol (95:5)	GC/FID	Store at 5 °C /at least 30 days at 5 °C
Methyl Ethyl Ketone	NIOSH 2500	Beaded carbon (150/75mg)	0.01 - 0.2	0.25 – 12	CS ₂	GC/FID	At least 90 days at - 5 °C
Methyl Isobutyl Ketone	NIOSH 1300	Charcoal	0.01 - 0.2	1 – 10	CS ₂	GC/FID	Must be refrigerated
Methyl Methacrylate	NIOSH 2537	XAD-2	0.01 - 0.05	1 – 8	CS ₂	GC/FID	7 days at 25°C; 31 days at 5°C
1-Methyl-2-Pyrrolidinone	NIOSH 1302	Charcoal	0.05 - 0.2	0.5 – 125	DCM / MOH (95:5)	GC/FID	Keep cold. Protect from prolonged exposure to light/14 days at 5 °C
Methyl tert-Butyl Ether (MTBE)	NIOSH 1615	2 Charcoal in series (front 400mg; back 200ng)	0.1 - 0.2	2 – 96	CS ₂	GC/FID	At least 5 days at 25 °C, 3 weeks at -7 °C
Nickel	NIOSH 7303	MCE (0.8µm)	1.0 – 4.0	1 – 50,000	HNO ₃	ICP/OES	-
Nitric acid	NIOSH 7903	Silica gel	0.2 - 0.5	3 – 100	NaHCO ₃ / Na ₂ CO ₃	IC	At least 21 days at 25 °C
Paraffin Wax	OSHA PV2047	Glass fiber filter	1.0	100	CS ₂	GC/FID	Refrigerated / 5 days
Particulate (Respirable)	NIOSH 0600	PVC (5µm)	1.7	20 – 400	-	Gravimetric	-
Particulate (Total)	NIOSH 0500	PVC (5µm)	1.0 – 2.0	7 – 133	-	Gravimetric	-
Petroleum Ether	NIOSH 1550	Charcoal	0.01 – 0.2	0.2 – 20	CS ₂	GC/FID	At least 1 week at 25 °C
Phenyl Ether	NIOSH 1617	Charcoal	0.01 – 0.2	1 – 50	CS ₂	GC/FID	-
Phosphoric acid	NIOSH 7903	Silica gel	0.2 - 0.5	3 – 100	NaHCO ₃ / Na ₂ CO ₃	IC	At least 21 days at 25 °C
Pyridine	NIOSH 1613	Charcoal	0.01 – 1.0	18 – 150	DCM	GC/FID	-



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Selenium	NIOSH 7303	MCE (0.8µm)	1.0 – 4.0	8 – 250,000	HNO ₃	ICP/MS	-
Silver	NIOSH 7301	MCE (0.8µm) or PVC (5µm)	1.0 – 4.0	250 – 2,000	1 HNO ₃ : 3 HCl	ICP/OES	-
Stoddard solvent	NIOSH 1550	Charcoal	0.01 - 0.2	0.2 – 20	CS ₂	GC/FID	At least 1 week at 25 °C
Styrene	NIOSH 1501	Charcoal	0.01 – 1.0	1 – 14	CS ₂	GC/FID	30 days at 5 °C
Sulfuric acid	NIOSH 7903	Silica gel	0.2 - 0.5	3 – 100	NaHCO ₃ / Na ₂ CO ₃	IC	At least 21 days at 25 °C
Tetrachloroethylene (Perchloroethylene)	NIOSH 1003	Charcoal	0.01 - 0.2	1 – 40	CS ₂	GC/FID	30 days
Tetrahydrofuran	NIOSH 1609	Charcoal	0.01 - 0.2	1 – 9.0	CS ₂	GC/FID	-
Titanium	NIOSH 7303	MCE (0.8µm)	1.0 – 4.0	0.1 – 10,000	HNO ₃	ICP/OES	-
Toluene	NIOSH 1501	Charcoal	0.01 - 0.2	1 – 8	CS ₂	GC/FID	30 days at 5 °C
1,1,1-Trichloroethane (Methyl chloroform)	NIOSH 1003	Charcoal	0.01 - 0.2	0.1 – 8	CS ₂	GC/FID	30 days
Trichloroethylene	NIOSH 1022	Charcoal	0.01 - 0.2	1 – 30	CS ₂	GC/FID	-
Vanadium	NIOSH 7303	MCE (0.8µm)	1.0 – 4.0	2.5 – 500,000	HNO ₃	ICP/OES	-
Vinyl acetate	NIOSH 1453	Carbon molecular sieve	0.05 – 0.2	1.5 – 24	DCM / MOH (95:5)	GC/FID	At least 30 days at 5 °C
m, o, p-Xylene	NIOSH 1501	Charcoal	0.01 - 0.2	2 – 23	CS ₂	GC/FID	30 days at 5 °C
Zinc	NIOSH 7303	MCE (0.8µm)	1.0 – 4.0	0.5 – 10,000	HNO ₃	ICP/OES	-

2.) Organic Vapor Monitors

Analyte	Method Reference	Sampling Media	Desorption Solvent / Digestion	Analytical Technique	Recommended Sampling Time(Hrs.)	Special Handling Instruction
*Acetone	3M Technical Data Bulletin	3M 3520 Organic Vapor Monitor	CS ₂	GC/FID	2	Up to 3 weeks in refrigerator
Acetonitrile	3M Technical Data Bulletin	3M 3520 Organic Vapor Monitor	CS ₂	GC/FID	2	-
1,2-Dichloroethane (Ethylene Dichloride)	3M Technical Data Bulletin	3M 3520 Organic Vapor Monitor	CS ₂	GC/FID	8	-
Diethyl ether	3M Technical Data Bulletin	3M 3520 Organic Vapor Monitor	CS ₂	GC/FID	4	-
Formaldehyde	OSHA 1007	SKC UMEX passive sampler	ACN	HPLC	8	Up to 3 weeks in refrigerator
Nitrogen Dioxide	OSHA ID-182	Ogawa Passive Sampler	Water	IC	24	21 days at room temperature
2-Propanol (Isopropanol)	3M Technical Data Bulletin	3M 3520 Organic Vapor Monitor	ACN	GC/FID	-	Up to 3 weeks in refrigerator
*Vinyl acetate	3M Technical Data Bulletin	3M 3500 Organic Vapor Monitor	CS ₂	GC/FID	-	Up to 3 weeks in refrigerator
Aliphatic, aromatic, most halogenated hydrocarbons	3M Technical Data Bulletin	3M Organic Vapor Monitor	CS ₂ or other suitable solvents	GC/FID	See technical bulletin	At least 3 weeks at room temperature

*Certain compounds (e.g. acetone, methyl ethyl ketone, vinyl acetate, etc.) may show a decreased recovery when sampled in high relative humidity. Refrigerate and/or expedite for analysis to help ensure accurate results.
Note: For details, please refer to the listed method references and sampling media instruction guides.