



Government of **Western Australia**
Department of **Mines, Industry Regulation and Safety**

Safety Regulation System (SRS) health and hygiene code index

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1 Equipment codes

Equipment code	Sampling equipment
7H	7-hole sample head
AS	Asbestos sample head
C2	Cyclone (2.2 L/min)
C3	Cyclone (3 L/min)
CA	Aluminium cyclone
DM	Diesel particulate monitor
DT	Detector tube
ED	Electronic device

Equipment code	Sampling equipment
FC	Filter cassette
IO	IOM sample head
IP	Impinger
PM	Passive monitor
PPI	Parallel particle impactor
SB	Sample bag
ST	Sorbent or sample tube

2 Location codes

040 Exploration (not on a mine site)

100 Underground workplaces

110	Underground access or haulage ways	
	111	Brace or winder building
	112	Shaft
	113	Plat
	114	Decline, adit or drift
	115	Haul road or level
	116	Conveyor road
	117	Ladder way
	118	Return airways
120	Underground production or development areas	
	121	Underground face area (coal)
	122	Underground stope
	125	Loading pocket
	126	Raise (development)
	127	Decline or winze (development)
	128	Level (development)
	129	Capital (development)
130	Underground workshops	
140	Pump chamber	
150	Underground storage areas	

	151	Fuel storage
	152	Explosives magazines
	153	Underground stores – general
160	Underground ore or waste dumping	
	161	Ore, waste tip or pass area
	162	Grizzly
	163	Mill hole
170	Underground crushing area	
180	Ancillary locations	
	181	Crib room
	182	Latrine
190	Underground NOC	
	199	Underground – place not stated

200 Open pit production or development areas

210	Face loading area	
220	Bench area not haul road	
	221	Drill pattern area
	222	Heavy vehicle park up area
230	Haul road	
	231	Haul road – level
	232	Haul road – ramp or incline
240	Waste dump area	
250	Ore tipping area	
260	In pit crushing	
	261	In pit crusher area
	262	In pit conveyors
270	Stockpile – run of mine	
280	Salt production areas	
290	Open cut NOC	
	291	Dredge
	299	Open cut – place not stated

300 Surface work areas – general

310	Mine access road / not haul road	
320	Park up areas / heavy vehicles / plant	
330	Warehouse / stores	

340	Explosives magazine	
350	Fuel storage area	
360	Laboratory	
370	Storage yard or rebuild area	
380	Lube bay or service bay	
	381	Wash down area
390	Surface general area NOC	
	399	Surface general area – not stated

400 Treatment plant or ore processing

411	Process control rooms
413	Crushing, screening or conveyor
416	Heap, vat or in-situ leaching
419	Grinding or classification
422	Gravity concentration or magnetic separation
425	Flotation
428	Leaching
431	Solvent extraction, scrubbers or strippers
434	Filters, presses or wet screening
437	Thickening or clarification
439	Crystallisation, nucleation or ion exchange
441	Electrowinning or cell house
444	Smelter, roaster or furnace areas
447	Gold room and elution facilities
451	Tailings storage facility
454	Product packaging or storage
457	Sample plant or station
461	Reagent or raw material storage areas
464	Reagent or raw materials preparation plants
467	Water treatment plants
471	Processing plant other

500 Crushed ore areas

510	Stockpiles	
	511	Stockpile access roads
520	Train loading or unloading	
	521	Train loader or loading area

	522	Train unloader or tippler area
530	Stacker or reclaimer area	
540	Stacker or reclaim conveyors	
550	Wharf area	
	551	Shiploader wharf
	552	Conveyors wharf

600 Workshop surface

610	Workshop heavy equipment	
620	Workshop electrical or instruments	
630	Workshop railway	
640	Workshop auto or light vehicles	
650	Workshop boilermakers	
660	Workshop painters or carpenters	
670	Workshop tyre fitting	
680	Workshop belt repairs	
690	Workshop NOC	

700 Railways

710	Main line	
	711	Main line – on track
	712	Main line – off track
720	Siding	
	721	Siding – on track
	722	Siding – off track
730	Railway access road	
740	Railway yard	

800 Power generation plant

810	Control room	
820	Distribution or sub-stations	
830	Engine room	

900 Administration areas

910	Offices or administration buildings	
920	Crib room, canteen or mess	
930	Showers or change room	

940	Lamproom
950	Car park
960	Pathways
970	Gardens
990	Administration – NOC

3 Occupation codes

100000 Management and supervisory

110000	General management occupations	
	111000	Financial manager
	112000	Personnel manager
	113000	Sales manager
	114000	Purchasing manager
	115000	Manager NOC
120000	Engineering occupations	
	121000	Mining engineer
	122000	Mechanical engineer
	123000	Civil engineer
	124000	Chemical engineer
	125000	Metallurgical engineer
	126000	Petroleum engineer
	129000	Engineer NOC
130000	Professional and related occupations	
	131000	Chemist
	132000	Geologist
	133000	Metallurgist
	134000	Environmental scientist or assistant
	135000	Surveyor
	136000	Draftsman
	137000	Health or medical occupations
		137100 Doctor
		137200 Occupational health nurse
		137300 First aid attendant
	138000	Industrial hygienist
	139000	Professional and related NOC
140000	Management or administration services	

	141000	Security officer
	142000	Safety officer
	143000	Training officer
	144000	Personnel officer
	145000	Clerical or secretarial occupations
	146000	Township or accommodation occupations
	146100	Caretaker
	146200	Housekeeper or cleaner
	146300	Handyman
	146400	Gardener
	146500	Groundsman
	146900	Township or accommodation occupations NOC
	147000	Catering occupations
	147100	Cook
	147200	Catering assistant
	147300	Kitchen hand
	147400	Canteen attendant
	147900	Catering occupations NOC
	148000	Cleaning or laundering occupations
	148100	Cleaners
	148200	Change house attendant
	149000	Manager or administrative services occupations NOC
150000	Mine management occupations	
	151000	Mine manager
	152000	Underground manager
	153000	Assistant underground manager
	154000	Under manager
	155000	Mine or pit superintendent
	159000	Mine management occupations NOC
160000	Supervisory occupation	
	161000	Deputy (coal)
	162000	Foreman or shift boss underground
	163000	Foreman or shift foreman surface
	164000	Overman (coal)
	165000	Supervisor
170000	Prospector	

200000 Underground production and services

210000	Miners production or development (underground)		
	211000	Contract miners	
		211100	Stope miner
			211110 Stope miner – handheld
			211120 Stope miner – jumbo
		211200	Development miner
			211210 Development miner – handheld
			211220 Development miner – jumbo
		211300	Shaft sinker
			211310 Shaft sinker – handheld
			211320 Shaft sinker – jumbo
	212000	Coal miner (underground)	
		212100	Composite miner
		212200	Continuous miner driver
		212300	Machineman
		212400	Coal miner NOC
		212500	Borer / shotfirer
		212600	Shiftman
	213000	Non-contract miners (underground)	
		213100	Miner – handheld
		213200	Miner – jumbo
		213300	Popper machineman
	214000	Trainee miner	
	215000	Miner NOC	
	216000	Miner assistant	
220000	Long hole drill and blast occupations (underground)		
	221000	Long hole drill operator	
	222000	Long hole driller assistant	
	223000	Shotfirer	
	224000	Shotfirer assistant (charging)	
230000	Diamond driller / raiseborers		
	231000	Diamond drill operator	
	232000	Diamond drillers assistant	
	233000	Raiseborer operator	
	234000	Raiseborer assistant	
240000	Loading / transport occupations (underground)		

	241000	Diesel loader operator	
	243000	Scraper operator	
	244000	Locomotive driver	
	245000	Truck driver	
	246000	Plant operator	
		246100	Bobcat driver
		246200	Grader driver
	247000	Underground personnel transport driver	
	248000	Conveyor attendant or operator	
	249000	Trucker	
	249900	Loading or transport occupations NOC	
250000	Ground / roof support occupations (underground)		
	251000	Timberman	
	252000	Roofbolter	
	253000	Hydraulic fill operator	
260000	Services occupations (underground)		
	261000	Ventilation occupations	
		261100	Ventilation officer
		261200	Ventilation man
	262000	Tracklayer or platelayer	
	263000	Pipefitter	
	264000	Pumpman or pump attendant	
	265000	Nipper or salvageman / utilityman	
	266000	Underground crushing operator	
		266100	Grizzleyman / pass runner
	267000	Underground labourer / tool carrier	
	268000	Sanitaryman	
	269000	Underground services occupation NOC	
		269100	Scaler
270000	Underground winding & hoisting occupations		
	271000	Winding engine driver	
	272000	Hoist driver	
	273000	Platman	
	274000	Skipman	
	275000	Braceman	
	276000	Brakeman	
	277000	Onsetter	

	279000	Winding and hoisting occupations NOC
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300000 Mining production and services (surface – open pit)

310000	Blast hole drilling surface	
	311000	Blast hole drill operator
	312000	Blast hole drill operators assistant
	313000	Air track or crawl air driller
	314000	Sniper drill operator (rubber tyred)
320000	Charging and blasting (surface)	
	321000	Powder monkey / leading hand / shotfirer
	322000	Powder truck driver
	323000	Powder crew labourer
330000	Exploration drilling (surface)	
	331000	Driller
	332000	Driller assistant
340000	Excavation equipment operators (surface)	
	341000	Bucketwheel operator
	342000	Bucketwheel operator assistant
	343000	Dragline operator
	344000	Rope shovel operator
	346000	Hydraulic excavator operator
	347000	Dredge operator
	348000	Front end loader operator
	349000	Excavation equipment operator NOC
350000	Mobile plant operator (surface)	
	351000	Bulldozer operator
	352000	Grader driver
	353000	Backhoe operator
	354000	Scraper driver
	359000	Mobile plant operator NOC
360000	Driving occupations (surface)	
	361000	Haulage truck driver
	362000	Water truck driver
	363000	Explosives truck driver
	364000	Fuel / grease /service truck driver
	365000	Hiab truck driver
	366000	Passenger vehicle driver / bus driver

	367000	Equipment transport driver
	369000	Driver NOC
370000	Open cut service occupations	
	371000	Greaser / oiler
	372000	Quarry labourer or labourer
	373000	Fuel and lubrication serviceman
	374000	Wash bay operator
	375000	Dump spotter
	376000	Weighbridge operator
	377000	Surveyors assistant – chainman
	378000	Field assistant pit tech, sampler
	379000	Mine worker NOC
390000	Contractor or contractors employees NOC	

400000 Ore treatment occupations

410000	Final product handling / transport occupations	
	411000	Processing plant operator
	412000	Processing plant serviceman
	413000	Processing plant utility worker
420000	Mobile plant occupations	
	422000	Mobile plant operator NOC
430000	Final product handling / transport occupations	
	431000	Final product packer / loader / dumper operator
	432000	Final product warehouse operator
	433000	Final product handling or transport NOC
440000	Sampling, assay, laboratory occupations	
	441000	Laboratory technician / assistant / analyst
	442000	Sample preparation operator
	443000	Sampler / sample plant operator

500000 Railway operations occupations

510000	Railway controller	
520000	Locomotive crews	
	521000	Locomotive driver
	522000	Observer
	523000	Trainee observer
	524000	Shunter locomotive driver
530000	Track laying / maintenance	
	531000	Ganger
	532000	Platelayer
	533000	Track maintenance machine operator
	534000	Track labourer
540000	Car and wagon examiner	
550000	Railway yardman	

600000 Metal working progressing trades

610000	Sheet metal trades	
	611000	Metal patternmaker
	612000	Sheet metal worker
	613000	Coppersmith
	614000	Guillotine operator
	615000	Millwright
620000	Metal machining trades	
	621000	Metal machinist
	622000	Fitter and turner
630000	Fitters mechanical	
	631000	Fitter
	632000	Fitter – welder
	633000	Fitter – diesel
	634000	Fitter – pipe
640000	Structural steel trades	
	641000	Boilermaker welder
	642000	Boilermaker
	643000	Welder
650000	Metal trades apprentices	
	651000	Sheet metal apprentice
	652000	Metal machining apprentice

	653000	Fitters apprentice
	654000	Boilermakers apprentice
	659000	Apprentice NOC
660000	Trades assistant	
690000	Metal trades	
	691000	Tool and dye setter
	692000	Saw setter
	693000	Electroplater
	694000	Blacksmith
	695000	Shipwright
	696000	Instrument artificer
	697000	Lamp room mechanic and assistant
	698000	Toolmaker
	699000	Drill doctor

700000 Electrical or electronic trades

710000	Electrical trades	
	711000	Linesman
	712000	Electrical fitter
	712100	Cable splicer
	713000	Electrical mechanic
	714000	Automotive electrician
	715000	Refrigeration mechanic
	716000	Air-conditioning mechanic
	717000	Electrical installer
	718000	Lift mechanic
	719000	Electrician NOC
720000	Electronic trades	
	721000	Radio technician
	722000	Telecommunication technician
	723000	Telecommunication trainee
	724000	Signals technician
	725000	Instrument technician
730000	Electrical / electronic apprentices	
	731000	Electrical apprentice
	732000	Electronic apprentice
790000	Electrical trades assistant	

	791000	Electrical trades assistant
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800000 Miscellaneous trades or utilities

810000	Construction trades	
	811000	Bricklayer
	812000	Carpenter or joiner
	813000	Painter
	814000	Plasterer or tiler
	815000	Plumber or drainer
	816000	Rigger or rope splicer
	817000	Scaffolder
	818000	Construction trades apprentice
	819000	Construction trades assistant
820000	Conveyor belt repair occupations	
	821000	Belt repairer
	822000	Belt repairer assistant
	823000	Trainee belt repairer
830000	MOTOR / ENGINE TRADES	
	831000	Motor mechanic
	832000	Diesel motor mechanic
	833000	Brake mechanic
	834000	Tyre fitter
	835000	Panel beater
	836000	Spray painter
	837000	Mechanic NOC
	838000	Trades assistant
	839000	Sand blaster
840000	Power plant operators	
	841000	Power plant engine driver
	842000	Power plant trainee engine driver
	843000	Power plant greaser
	844000	Boiler attendant
	845000	Fireman
850000	Water treatment plant operator	
860000	Waste disposal equipment operator	
870000	Gas supply service operator	
890000	Utility operator NOC	

900000 Material handling – stores or warehouse occupations

910000	Crane driving occupations	
	911000	Mobile crane driver
	912000	Tower crane driver
	913000	Overhead crane driver (cabin controlled)
	914000	Crane driver NOC
	915000	Dogman or cranechaser
920000	Fork lift operator	
930000	Storeman NOC	
	931000	Toolstore attendant
990000	Non-mining occupations	
	991000	Seafaring occupation
	992000	Farming occupations

4 Atmospheric agent codes

Agent description	Agent code	Sampling equipment	Time Weighted Average (TWA)		PEAK		Short term exposure limit (STEL)		Unit of measurement	Exposure standard adjustment category
			Limit of detection	Exposure standard	Limit of detection	Exposure standard	Limit of detection	Exposure standard		
1,1,1-Trichloroethane	TCE	PM, SB, ST	0.04	100			0.04	200	ppm	4
1,1,2,2-Tetrabromoethane	TBE	PM, SB, ST	0.1	1					ppm	4
Acetaldehyde	ACD	PM, SB, ST	0.04	20					ppm	1
Acetone	ACT	PM, SB, ST	0.2	500			0.2	1000	ppm	1
Actinolite	ACN	AS	0.01	0.1					f/mL	3
Aldehyde	ALD	PM, SB, ST	0.04	1					ppm	1
Aluminium (metal dust or oxide, as Al)	ALM	7H, C2, C3, CA, PPI, FC, IO	0.004	10					mg/m3	1
Aluminium welding fume (as Al)	ALW	7H, FC, IO	0.004	5					mg/m3	1
Ammonia	NH3	ED, IP, PM, SB, ST	0.06	25			0.06	35	ppm	1
Amosite	AMS	AS	0.01	0.1					f/mL	3
Anthophyllite	ANT	AS	0.01	0.1					f/mL	3
Antimony	SB	7H, C2, C3, CA, PPI, IO	0.001	0.5					mg/m3	3
Arsenic	AS	7H, IO	0.001	0.05					mg/m3	3
Asbestos	ASB	AS	0.01	0.1					f/mL	3
Benzene	BNZ	ED, PM, SB, ST	0.2	1					ppm	3
Beryllium & compounds	BE	7H, FC, IO	0.001	0.002					mg/m3	3
Bromoform	BRO	PM, SB, ST	0.02	0.5					ppm	4
Cadmium	CD	7H, IO	0.001	0.01					mg/m3	3
Calcium carbonate (limestone)	LST	7H, IO	0.1	10					mg/m3	1
Calcium hydroxide (slaked lime)	LIM	7H, IO	0.1	5					mg/m3	1
Calcium oxide (quicklime)	CAO	7H, IO	0.004	2					mg/m3	1

Agent description	Agent code	Sampling equipment	Time Weighted Average (TWA)		PEAK		Short term exposure limit (STEL)		Unit of measurement	Exposure standard adjustment category
			Limit of detection	Exposure standard	Limit of detection	Exposure standard	Limit of detection	Exposure standard		
Calcium sulphate (gypsum)	GYP	7H, IO	0.1	10					mg/m3	1
Carbon black	CRB	7H, C2, C3, CA, PPI, IO	0.1	3					mg/m3	3
Carbon dioxide	CO2	DT, ED, SB, ST	1	5000			1	30000	ppm	1
Carbon disulphide	CS2	SB, ST	0.002	10					ppm	4
Carbon monoxide	CO	DT, ED, SB, ST	0.07	30					ppm	4
Chlorine	CL2	FC, IO, IP			0.001	1			ppm	1
Chromium (metal or compounds, as Cr)	CRM	7H, IO	0.001	0.5					mg/m3	3
Chromium (VI) compounds (as Cr)	CR	7H, IO	0.001	0.05					mg/m3	3
Chrysotile	CHR	AS	0.01	0.1					f/mL	3
Coal dust (<5% silica/quartz)	COL	C2, C3, CA, PPI	0.1	3					mg/m3	3
Cobalt	COB	7H, C2, C3, CA, PPI, IO	0.001	0.05					mg/m3	3
Copper (dust or mist, as Cu)	CU	7H, IO	0.001	1					mg/m3	2
Copper (fume, as Cu)	CUF	7H, IO	0.001	0.2					mg/m3	2
Crocidolite	CRO	AS	0.01	0.1					f/mL	3
Cyanides (as Cn)	CYN	7H, IO	0.02	5					mg/m3	2
Diesel particulate matter (as elemental carbon)	DP	7H, C2, C3, CA, PPI, DM, FC, IO	0.01	0.1					mg/m3	3
Diisobutyl ketone (DIBK)	DBK	PM, SB, ST	0.0009	25					ppm	1
Ethanol	ETL	PM, SB, ST	0.1	1000					ppm	1
Ethyl acetate	ETA	PM, SB, ST	0.003	200			0.003	400	ppm	1
Ferrovandium dust	FVA	7H, IO	0.002	1			0.002	3	mg/m3	1
Fluorides (as F)	FLD	7H, IO, IP	0.5	2.5					mg/m3	3

Agent description	Agent code	Sampling equipment	Time Weighted Average (TWA)		PEAK		Short term exposure limit (STEL)		Unit of measurement	Exposure standard adjustment category
			Limit of detection	Exposure standard	Limit of detection	Exposure standard	Limit of detection	Exposure standard		
Formaldehyde	FHD	IP, PM, SB, ST	0.02	1			0.02	2	ppm	1
Graphite (non-fibrous)	GRT	C2, C3, CA, PPI	0.1	3					mg/m3	3
Hydrogen chloride	HCL	DT, FC, IP, ST			0.008	5			ppm	1
Hydrogen cyanide	HCN	ED, IP, PM, ST			0.01	10			ppm	1
Hydrogen fluoride (as F)	HF	DT, FC, IP, ST			0.01	3			ppm	1
Hydrogen sulphide	H2S	DT, ED, FC, IP, ST	0.1	10			0.1	15	ppm	1
Inhalable dust	INH	7H, IO	0.1	10					mg/m3	3
Iron oxide (fume, as Fe)	FEO	7H, IO	0.001	5					mg/m3	3
Isobutyl alcohol	IBA	ED, PM, SB, ST	0.07	50					ppm	1
Isocyanates (as NCO)	ISO	7H, ED, FC, IO, IP, ST	0.001	0.02			0.001	0.07	mg/m3	3
Isopropyl alcohol	IPA	ED, PM, SB, ST	0.08	400			0.08	500	ppm	2
Lead, inorganic dusts and fumes	PB	7H, IO	0.001	0.05					mg/m3	3
Magnesium oxide (as Mg)	MGO	7H, IO	0.001	10					mg/m3	2
Manganese (fume, as Mn)	MNF	7H, IO	0.001	1			0.001	3	mg/m3	4
Manganese (metal or compounds, as Mn)	MN	7H, IO	0.001	1					mg/m3	4
Mercury & compounds	HG	ED, FC, PM, ST, 7H, IO	0.001	0.025					mg/m3	3
Methyl chloride	MEC	SB, ST	0.1	50			0.1	100	ppm	1
Methyl ethyl ketone (MEK)	MEK	DT, PM, ST	0.03	150			0.03	300	ppm	1
Methyl ethyl ketone peroxide	MKP	IP, ST			0.04	0.2			ppm	1
Methyl isobutyl ketone	MBK	DT, PM, ST	0.1	50			0.1	75	ppm	1
Methylene chloride	MNC	PM, ST	0.06	50					ppm	4

Agent description	Agent code	Sampling equipment	Time Weighted Average (TWA)		PEAK		Short term exposure limit (STEL)		Unit of measurement	Exposure standard adjustment category
			Limit of detection	Exposure standard	Limit of detection	Exposure standard	Limit of detection	Exposure standard		
Mica	MIC	7H, C2, C3, CA, PPI, IO	0.1	2.5					mg/m3	3
Molybdenum	MO	7H, IO	0.001	5					mg/m3	1
n-Butyl alcohol	NBA	PM, ST			0.07	50			ppm	1
n-Heptane	HEP	ED, PM, SB, ST	0.05	400			0.05	500	ppm	2
n-Hexane	HEX	ED, PM, SB, ST	0.006	20					ppm	4
Nickel (metal)	NI	7H, C2, C3, CA, PPI, IO	0.001	1					mg/m3	3
Nickel (soluble compounds, as Ni)	NSO	7H, IO	0.001	0.1					mg/m3	3
Nickel sulphide (fume or dust, as Ni)	NIS	7H, IO	0.002	1					mg/m3	3
Nitric acid	HNO	DT, FC, ST	0.006	2			0.006	4	ppm	2
Nitric oxide	NO	DT, ED, ST, PM	0.02	25					ppm	3
Nitrogen dioxide	NO2	DT, ED, ST, PM	0.01	3			0.01	5	ppm	4
n-Propyl alcohol	NPA	PM	0.08	200			0.08	250	ppm	1
Octane	OCT	DT, PM, SB, ST	0.04	300			0.04	375	ppm	2
Oil mist (refined mineral oils)	OIL	7H, FC, IO	0.2	5					mg/m3	3
Perchloroethylene	PCE	DT, PM, SB, ST	0.03	50			0.03	150	ppm	4
Polycyclic aromatic hydrocarbons (PAH)	PAH	7H, C2, C3, CA, PPI, DM, FC, IO, ST	0.002	0.2					mg/m3	3
Respirable dust	RES	C2, C3, CA, PPI	0.1	3					mg/m3	3
sec-Butyl alcohol	SBA	ST	0.07	100					ppm	2
Selenium	SE	7H, IO	0.02	0.1					mg/m3	4
Silica, amorphous	ASL	7H, C2, C3, CA, PPI, IO	0.1	2					mg/m3	3
Silica, crystalline (quartz)	SIL	C2, C3, CA, PPI	0.01	0.05					mg/m3	3

Agent description	Agent code	Sampling equipment	Time Weighted Average (TWA)		PEAK		Short term exposure limit (STEL)		Unit of measurement	Exposure standard adjustment category
			Limit of detection	Exposure standard	Limit of detection	Exposure standard	Limit of detection	Exposure standard		
Silver (metal)	AG	7H, IO	0.003	0.1					mg/m3	3
Soapstone (inhalable)	SPS	7H, IO	0.1	6					mg/m3	3
Soapstone (respirable)	SPR	C2, C3, CA, PPI	0.1	3					mg/m3	3
Sodium hydroxide	NAH	7H, C2, C3, CA, PPI, FC, IO			0.01	2			mg/m3	1
Styrene (monomer)	STY	PM, ST	0.05	50			0.05	100	ppm	4
Sulphur dioxide	SO2	DT, ED, FC, IP, ST, PM	0.1	2			0.1	5	ppm	1
Sulphuric acid	HSO	7H, C2, C3, CA, PPI, FC, IO, IP, ST	0.01	1			0.01	3	mg/m3	1
Synthetic mineral fibres (SMF, as dust)	SMF	7H, IO	0.01	2					mg/m3	3
Synthetic mineral fibres (SMF, as fibrous)	RCF	FC	0.01	0.5					f/mL	3
Talc (fibrous)	TAF	AS	0.01	0.1					f/mL	3
Talc (non-fibrous)	TAD	7H, C2, C3, CA, PPI, IO	0.1	2.5					mg/m3	3
Tantalum	TAM	7H, IO	0.1	5					mg/m3	1
Tellurium	TE	7H, IO, ST	0.002	0.1					mg/m3	4
Thallium (soluble compounds, as Tl)	THA	7H, IO	0.003	0.1					mg/m3	3
Tin (metal)	TIN	7H, IO	0.004	2					mg/m3	3
Tin (oxide or inorganic compounds, as Sn)	SNO	7H, IO	0.002	2					mg/m3	3
Titanium dioxide	TID	7H, IO	0.001	10					mg/m3	1
Toluene	TOL	ED, IP, PM, SB, ST	0.03	50			0.03	150	ppm	4
Total dust	TOT	7H, IO	0.001	10					mg/m3	3

Agent description	Agent code	Sampling equipment	Time Weighted Average (TWA)		PEAK		Short term exposure limit (STEL)		Unit of measurement	Exposure standard adjustment category
			Limit of detection	Exposure standard	Limit of detection	Exposure standard	Limit of detection	Exposure standard		
Total petroleum hydrocarbons (TPH)	TPH	ED, ST	0.04	480					mg/m3	3
Trichloroethylene	TRI	DT, PM, SB, ST	0.04	10			0.04	40	ppm	2
Tungsten	TUN	7H, IO	0.002	1			0.02	10	mg/m3	2
Vanadium (as V2O5)	VAN	7H, C2, C3, CA, PPI, IO	0.01	0.05					mg/m3	1
Welding fumes	WLD	7H, FC, IO	0.1	5					mg/m3	2
Wood dust (hardwoods)	WDH	7H, IO	0.1	1					mg/m3	3
Wood dust (soft woods)	WDS	7H, IO	0.1	5					mg/m3	3
Xylene	XYL	ED, IP, PM, SB, ST	0.05	80			0.05	150	ppm	2
Zinc oxide (dust)	ZN	7H, IO	0.001	10					mg/m3	1
Zinc oxide (fume)	ZNF	7H, IO	0.001	5					mg/m3	2
Zirconium compounds (as Zr)	ZRC	7H, IO	0.004	5			0.004	10	mg/m3	1

Note: NOC = not otherwise classified

5 Biological agent codes

Agent description	Agent code	Biological sample	Gender	Biological Exposure Indices (BEI)*	Unit of measurement
1-hydroxypyrene	Hpy_bio (Urine)	Urine	Both	Guidance value only (GV**)	µmol/mol
Arsenic (inorganic) and methylated metabolites	As-In_bio (Urine)	Urine	Both	35	µg As/L
Arsenic (total) as index of inorganic arsenic and methylated metabolites	As_bio (Urine)	Urine	Both	35 ***	µg As/L
Cadmium	Cd_bio (blood)	Blood	Both	5	µg Cd/L
Cadmium	Cd_bio (Urine)	Urine	Both	5	µg Cd/g creatinine
Chromium	Cr_bio (Urine)	Urine	Both	25	µg Cr/L
Cobalt	Co_bio (Urine)	Urine	Both	15	µg Co/L
Lead	Pb_bio (Blood)	Blood	Female/ reproductive capacity	10	µg Pb/dL
Lead	Pb_bio (Blood)	Blood	Male	30	µg Pb/dL
Manganese	Mn_bio (Blood)	Blood	Both	GV	µg Mn/dL
Manganese	Mn_bio (Urine)	Urine	Both	GV	µg Mn/g creatinine
Mercury	Hg_bio (Urine)	Urine	Both	35	µg Hg/g creatinine
Mercury	Hg_bio (Blood)	Blood	Both	15	µg Hg/L
Nickel	Ni_bio (Urine)	Urine	Both	GV	µg Ni/L
Selenium	Se_bio (Blood)	Blood	Both	GV	µg Se/dL
Selenium	Se_bio (Urine)	Urine	Both	GV	mg Se/g creatinine
Thallium	Tl_bio (blood)	Blood	Both	GV	µg Tl/L
Thorium	Th_bio (Blood)	Blood	Both	200	µg Th/L
Thorium	Th_bio (Urine)	Urine	Both	1000	µg Th/L
Uranium	U_bio (Urine)	Urine	Both	200	µg U/L
Vanadium	V_bio (blood)	Blood	Both	50	µg V/L

*Refer to the latest ACGIH TLVs and BEIs for current BEIs and recommended sampling time.

** In the absence of ACGIH published BEIs, a site-specific GV may be assigned, that is based on a site-specific health risk assessment. In such cases increasing concentrations of metals in biological media, may be used to assess exposure management effectiveness. In the absence of extensive epidemiology, a GV would not provide reliable information on risk of disease development.

*** If the total arsenic concentration exceeds 35 µg As/L it is necessary to carry out further analytical testing to determine the exposure to inorganic arsenic from mining, to differentiate from less hazardous dietary sources of organic arsenic.

6 Noise dosimetry agent codes

Agent description	Agent code	Action level	Unit of measurement
Noise 8h average	Noise_LAeq8h	85	dB(A)
Noise peak	Noise_Lpeak	140	dB(Z)*

* Peak measurements historically as dB(lin) have been superseded by dB(Z) in lieu of manufacturer specifications based on current filters. Unweighted, flat or linear are equivalent to dB(Z) for peak measurements.

7 Drilling method codes

Code	Description
AIR	Aircore
AUG	Hand auger
BULL	Bulldozer
CLO	Core logging
DIA	Diamond drill
DIAP	Percussive diamond drilling

Code	Description
DW	Ditch witch
GDR	Grader
HS	Hand sampling
RAB	Rotary air blast drill
RC	Reverse circulation drill

8 Personal protective equipment references

The following table lists hearing protectors and provides information on class rating and expected attenuation, based on specifications outlined in Australian Standard AS 1269.3 *Occupational noise management – Part 3 Hearing protector program*.

What PPE was being correctly worn? Refer to AS 1269.3		
Type	Class rating	Expected attenuation SLC80 range
None worn	No further information	0
Ear plugs Ear muffs	1	10 to 13
	2	14 to 17
	3	18 to 21
	4	22 to 25
	5	26 or greater
Double protection	Class with highest attenuation	+ 5dB

The following table lists commonly used respiratory protective equipment and provides guidance on applicable protection factor and class rating, based on information outlined in Australian Standard AS 1715

Selection, use and maintenance of respiratory protective equipment. Consult packages or your supplier for information specific to the respiratory equipment provided to employees.

Respiratory protective equipment – mechanically/thermally generated particulates			
Refer AS 1715			
Protection factor	Type	Filter type	Class rating
Up to 10	Half-face – replaceable filter	P1	1
		P2	2
		P3	3
	Disposable mask	P1	1
		P2	2
	Powered air purifying respirator (PAPR) <ul style="list-style-type: none"> • Head cover or • Full-face 	P1	1
Up to 50	Full-face PAPR – head cover	P2	2
	PAPR – head cover	P3	3
	Half-face positive pressure	P3	3
Up to 100	Full-face Full-face with air-hose	P3	3
	100+	PAPR – head cover and blouse or Full-face	P3
		PAPR – head cover with positive pressure/air hose/blower	P3

When combined with a gas and vapour filter, the protection factor provided is dependent on the type of face piece, head cover, whether a blouse or positive air pressure is applied. Refer to AS 1715 for further advice and consult your supplier for detailed information on protection factors specific to the exact combination of particulate filter used with a gas and vapour filter.

Respiratory protective equipment – gas and vapour filters	
Refer AS 1715	
Type	Examples of contaminants
A (All classes)	Organic vapours > 65°C boiling point
AX	Low boiling point organic solvents < 65°C – dimethyl ether, vinyl chloride
B1 (AUS)	Acid gases – chlorine sterilisation, manufacture of chemicals, chlorinated compounds
B2	Acid gases and hydrogen cyanide (HCN) – gold ore refining
B3	Acid gases and hydrogen cyanide (HCN) – HCN fumigation
E	Sulphur dioxide (SO ₂) – foundries, smelting of metals
G	Agricultural chemicals
Hg	Mercury – from metallic mercury mining and handling,

Respiratory protective equipment – gas and vapour filters Refer AS 1715	
Type	Examples of contaminants
K	Ammonia – explosives, plastics, chemical plants
MB	Methyl bromides – fumigation
NO	Nitric oxides
Specific chemical filters are also available	Chemicals not listed above

9 Hearing protective equipment codes

Code	Description
CPM	Combined Plug and Muff
EM	Ear Muffs
EP	Ear Plugs
None	None Worn
Other	Other

10 Sample timing codes (biological monitoring)

Code	Description
EndOfShift	End of Shift
EndOfWorkRoster	End of Work Roster
StartOfShift	Start of Shift
StartofWorkRoster	Start of Work Roster
SpotSample	Spot Sample

11 Conversion of gas measurements

The conversion equations of mg/m³ to ppm is based on 25°C and 1 atmosphere.

Conversion formula for ppm to mg/m³

$$Y \text{ mg/m}^3 = (X \text{ ppm})(\text{molecular weight}) / 24.45$$