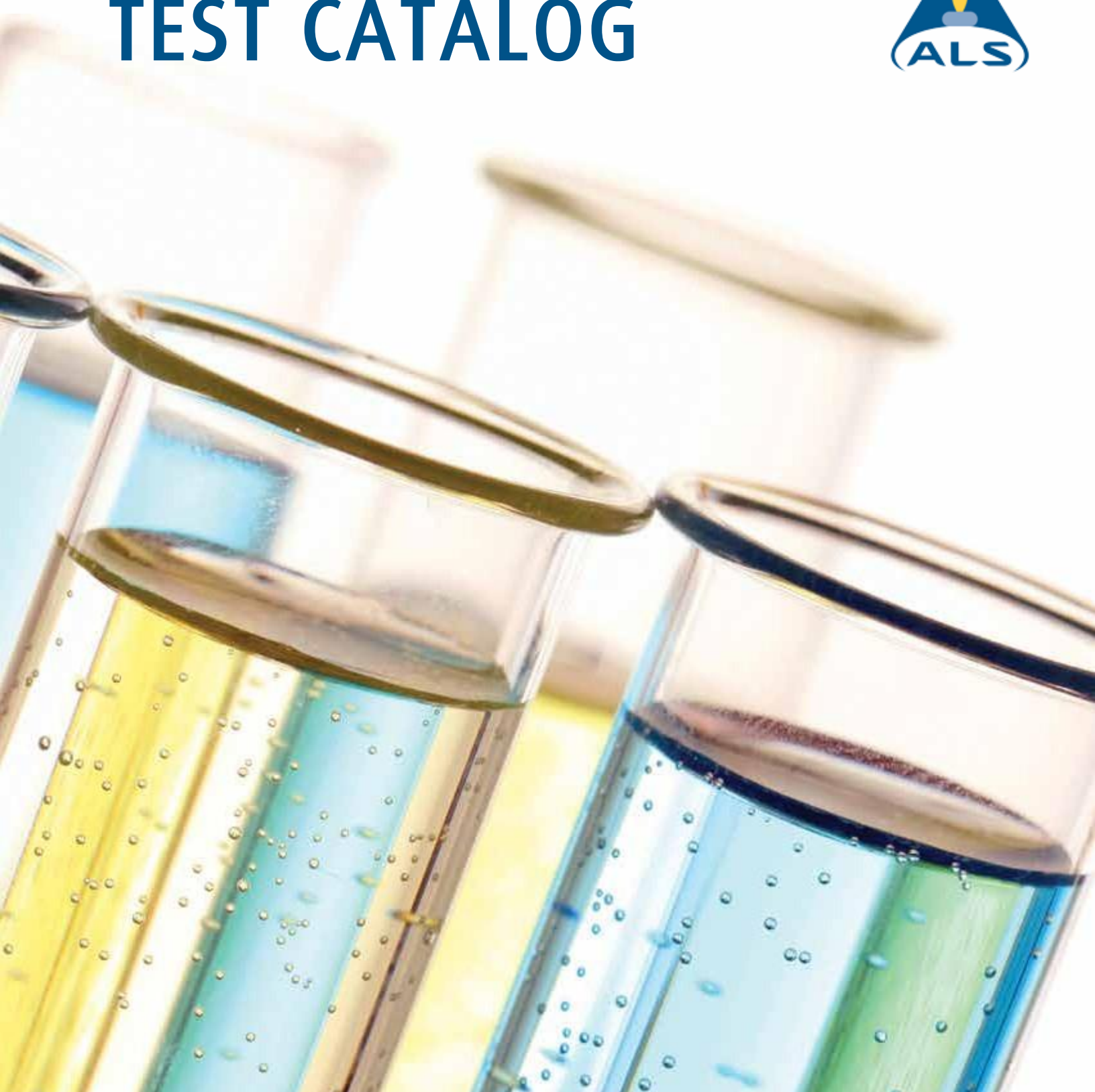


AIR ANALYSIS TEST CATALOG





YOUR ANALYTICAL PARTNER FOR ALL AIR MONITORING PROJECT NEEDS

ALS Malaysia provides a comprehensive list of air sample matrices analytical services with state-of-the-art laboratories located at Bukit Jelutong, Shah Alam, Selangor. Accredited by Department of Standards Malaysia, ALS offers USEPA, NIOSH and OSHA methods, giving you confidence in the numbers you use to make decisions affecting air quality and public health.

ALS Malaysia locations hold accreditations and certifications relevant to their work and area of operation. Refer to the Scopes of Accreditation for details relevant.

The ALS Malaysia was established in 1993. Since then, we have served a wide range of service sectors ranging from Department of Environment (National Environment Quality Monitoring Program) to private industries in the ASEAN region. Our staff has extensive experience in all aspects of air sample analysis including gas chromatography, spectroscopy, and wet chemistry. We perform most traditional analysis as well as many of the more difficult and sophisticated techniques that many laboratories are reluctant to attempt. For more information, please contact an ALS representative.

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Turn Around Time

The laboratory's standard turnaround time is seven (7) working days from receipt of samples.

Fast turnaround is available for an additional fee. Please contact the laboratory prior to submitting samples for fast analysis.

AMBIENT AIR QUALITY ANALYSIS

Dust Particulate

Analysis	Method	Turnaround Time
Total Suspended Particulate (TSP)	USEPA IO 3.1	7 working days
Particulate Matter (PM10)	USEPA IO 3.1	7 working days
Particulate Matter (PM2.5)	USEPA IO 3.1	7 working days

Inorganic Air Sample

Analysis	Method	Turnaround Time
Alkaline Dust <ul style="list-style-type: none"> • Potassium hydroxide • Sodium hydroxide 	NIOSH 7401	7 working days
Fluorides	NIOSH 7906	7 working days
Formaldehyde	NIOSH 3500 (mod)	7 working days
Hydrogen Sulphide	NIOSH 6013	7 working days
Hydrogen Halides <ul style="list-style-type: none"> • Hydrogen Bromide • Hydrogen Chloride • Hydrogen Fluoride • Nitric Acid • Phosphoric Acid • Sulphuric Acid 	OSHA ID165SG	7 working days
Ammonia	NIOSH 6015	7 working days
Nitrogen Dioxide as NO ₂	J.P.Lodge407	7 working days
Ozone	J.P.Lodge819	7 working days
Sulphur Dioxide as SO ₂	J.P.Lodge704C	7 working days

Metals

Analysis	Method	Turnaround Time
Heavy Metals in Particulate <ul style="list-style-type: none"> • Aluminium • Beryllium • Cobalt • Magnesium • Tin • Barium • Chromium • Lead • Nickel • Arsenic • Calcium • Iron • Molybdenum • Antimony • Cadmium • Copper • Manganese • Zinc • Titanium • Silver • Tungsten • Mercury 	USEPA IO 3.4	7 working days
Mercury	NIOSH 6009	7 working days

Organics

Analysis	Method	Turnaround Time
Volatile Organic Compounds <ul style="list-style-type: none"> • 1.1.1.2-Tetrachloroethane • 1.1.1-Trichloroethane • 1.1.2.2-Tetrachloroethane • 1.1.2-Trichloroethane • 1.1-Dichloroethane • 1.1-Dichloroethene • Trichloroethene • tert-Butylbenzene • Chlorobenzene • 4-Chlorotoluene 	USEPA TO-17 (Thermal Desorption-GC MS)	7 working days

<ul style="list-style-type: none"> • trans-1.3-Dichloropropylene • cis-1.3-Dichloropropylene • Chloroform • 4-Methyl-2-pentanone (MIBK) • Vinyl chloride • Carbon Tetrachloride • trans-1.4-Dichloro-2-butene • Pentachloroethane • Chloromethane • Trichlorofluoromethane • trans-1.2-Dichloroethene • Dibromomethane • Styrene • p-Isopropyltoluene • meta- & para-Xylene • n-Propylbenzene • sec-Butylbenzene • n-Butylbenzene • Dibromochloromethane • Dichlorodifluoromethane • Chloroethane • Tetrachloroethene • Hexachlorobutadiene • Bromomethane • Iodomethane • cis-1.2-Dichloroethene • cis-1.4-Dichloro-2-butene • Ethylbenzene • Isopropylbenzene • Toluene • ortho-Xylene • 1.3-Dichlorobenzene • 1.2.3-Trichlorobenzene • 1.2.4-Trichlorobenzene • Bromoform • 2-Hexanone (MBK) • 1.1-Dichloropropylene • 1.2.3-Trichloropropane • Benzene • 1.3.5-Trimethylbenzene • 2-Chlorotoluene • 1.2-Dichlorobenzene • Bromobenzene • 1.4-Dichlorobenzene • Bromodichloromethane • 2-Butanone (MEK) • 1.2-Dichloropropane • 2.2-Dichloropropane • 1.2-Dibromoethane (EDB) • 1.2-Dichloroethane • 1.3-Dichloropropane • 1.2-Dibromo-3-chloropropane • 1.2.4-Trimethylbenzene • Methyl tert-Butyl Ether (MTBE) 		
<p>Volatile Organic Compounds</p> <ul style="list-style-type: none"> • Propene • Chloromethane • Vinyl Chloride • Bromomethane • Ethanol • Acrolein 	<p>USEPA TO-15 (GC-MS)</p>	<p>14-21 working days</p>

- Trichlorofluoromethane
- Acrylonitrile
- Methylene chloride
- Trichlorotrifluoroethane (CFC 113)
- trans-1,2-Dichloroethene
- Methyl tert-Butyl Ether (MTBE)
- 2-Butanone (MEK)
- Ethyl Acetate
- Chloroform
- 1,2-Dichloroethane
- Benzene
- Cyclohexane
- Bromodichloromethane
- 1,4-Dioxane
- n-Heptane
- 4-Methyl-2-pentanone (MIBK)
- 1,1,2-Trichloroethane
- Toluene
- Dibromochloromethane
- n-Butyl Acetate
- Tetrachloroethene
- Ethylbenzene
- Bromoform
- o-Xylene
- 1,1,2,2-Tetrachloroethane
- alpha-Pinene
- 4-Ethyltoluene
- 1,2,4-Trimethylbenzene
- 1,3-Dichlorobenzene
- 1,2-Dichlorobenzene
- 1,2-Dibromo-3-chloropropane(DBCP)
- Naphthalene
- 2-Hexanone (MBK)
- 1,2-Dibromoethane
- n-Octane
- Chlorobenzene
- m & p-Xylenes
- Styrene
- n-Nonane
- Cumene
- n-Propylbenzene
- 1,3,5-Trimethylbenzene
- Benzyl Chloride
- 1,4-Dichlorobenzene
- d-Limonene
- 1,2,4-Trichlorobenzene
- Hexachlorobutadiene
- Dichlorodifluoromethane
- 1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)
- 1,3-Butadiene
- Chloroethane

<ul style="list-style-type: none"> • Acetonitrile • Acetone • 2-Propanol • 1,1-Dichloroethene • 3-Chloro-1-propene (Allyl Chloride) • Carbon disulfide • 1,1-Dichloroethane • Vinyl Acetate • cis-1.2-Dichloroethene • N - Hexane • Tetrahydrofuran • 1,1,1-Trichloroethane • Carbon Tetrachloride • 1,2-Dichloropropane • Trichloroethene • Methyl Methacrylate • cis-1.3-Dichloropropene • trans-1.3-Dichloropropene 		
<p>Volatile Sulfur Compounds (Qualitative Analysis)</p> <ul style="list-style-type: none"> • Methanethiol (Methyl Mercaptan) • Ethanethiol (Ethyl Mercaptan) • 1,1-Dichloroethene • Dimethyl Sulfide • Carbon disulfide • Propane-1-thiol (Propyl Mercaptan) • Butane-1-thiol (Butyl Mercaptan) • Dimethyl disulfide • Hydrogen Sulfide 	<p>Thermal Desorption-GC MS</p>	<p>7 working days</p>
<p>Reduced Sulfur Compounds (Quantitative Analysis) by Bottle-Vac or SUMMA Canister</p> <ul style="list-style-type: none"> • Carbon disulfide • Tetrahydrothiophene • 2,5-Dimethylthiophene • Diethyl Disulfide • Carbonyl Sulfide • Thiophene • 3-Methylthiophene • 2-Ethylthiophene • Methyl Mercaptan • Ethyl Mercaptan • tert-Butyl Mercaptan • Ethyl Methyl Sulfide • Diethyl Sulfide • Dimethyl disulfide • Dimethyl Sulfide • Hydrogen Sulfide • Isopropyl Mercaptan • n-Propyl Mercaptan • Isobutyl Mercaptan • n-Butyl Mercaptan 	<p>ASTM D 5504-12</p>	<p>14-21 working days</p>

Benzene, Toluene, Ethylbenzene, Xylenes & Styrene (BTEXS)	NIOSH 1501	7 working days
Alkanes <ul style="list-style-type: none"> Hexane (C6) Heptane (C7) Octane (C8) Nonane (C9) Decane (C10) Undecane (C11) Dodecane (C12) 	NIOSH 1500	7 working days
Methanol	NIOSH 2000	7 working days
Polyaromatic Hydrocarbons (PAHs) <ul style="list-style-type: none"> Naphthalene Acenaphthene Phenanthrene Fluoranthene Benz(a)anthracene Benzo(b) & Benzo(k)fluoranthene Indeno(1.2.3.cd)pyrene Benzo(g,h,i)perylene Acenaphthylene Fluorene Anthracene Pyrene Chrysene Benzo(a)pyrene Dibenz(a,h)anthracene 	In House GC-MS	7 working days
Total Polychlorinated biphenyls	In House GC-MS	7 working days
Dioxins & Furans	USEPA TO-9A	14-21 working days
Acrylonitrile	NIOSH 1604	7 working days
Vinyl Chloride	NIOSH 1007	7 working days
Siloxanes <ul style="list-style-type: none"> Trimethylsilanol Hexamethyldisiloxane Hexamethylcyclotrisiloxane Octamethyltrisiloxane Octamethylcyclotetrasiloxane Decamethyltetrasiloxane Decamethylcyclopentasiloxane 	GC-MS	14-21 working days

<ul style="list-style-type: none"> • Dodecamethylpentasiloxane • Dodecamethylcyclohexasiloxane 		
<p>Light Hydrocarbons</p> <ul style="list-style-type: none"> • Methane • Ethane • Propane • Butane • Ethylene • Propylene • Acetylene 	GC-FID	14-21 working days
<p>Aldehydes</p> <ul style="list-style-type: none"> • Formaldehyde • Acetone • Propionaldehyde • Butyraldehyde • Isovaleraldehyde • m-Tolualdehyde • o-Tolualdehyde • 2,5-Dimethylbenzaldehyde • Acetaldehyde • Acrolein • Crotonaldehyde • Benzaldehyde • Valeraldehyde • p-Tolualdehyde • Hexanal • Glutaraldehyde 	USEPA TO-11A	14-21 working days
Total Hydrocarbon	NIOSH 1500	7 working days
Total Organic Matter	In House Method	7 working days

Passive Sampling

Passive sampler is a low cost sampler to monitor ambient air quality continuously for certain period of time ranging from 8 hours up to 14 days depending on the method suitability. Passive sampler does not require air sampling pump.

Analysis	Method	Turnaround Time
Sulfur Dioxide / Nitrogen Dioxide	Radiello	7 working days
Ozone	Radiello	7 working days
Hydrogen Sulfide	Radiello	7 working days
Hydrogen Chloride	Radiello	7 working days
Ammonia	Radiello	7 working days
Mercury	OSHA ID 140	7 working days
Volatile Organic Compounds <ul style="list-style-type: none"> • Trichloroethene • Toluene • Tetrachloroethene • Styrene • o-Xylene • m & p-Xylenes • Ethylbenzene • Chlorobenzene • Carbon Tetrachloride • Benzene • 3-Chloropropene • 1,4-Dichlorobenzene • 1,1-Dichloroethane • 1,2-Dichloropropane • 1,2-Dichloroethane • 1,1-Dichloroethene • 1,1,2-Trichloroethane • 1,1,1-Trichloroethane 	EPA 325 Thermal Desorption - GC MS	7 working days
Volatile Organic Compounds <ul style="list-style-type: none"> • Total Xylenes • Toluene • ortho-Xylene • meta- & para-Xylene • Ethylbenzene • Benzene • Total Hydrocarbons (C6-C10) • Methyl tert-Butyl Ether (MTBE) 	Radiello	7 working days
Methanol	SKC 575-007 / GC-FID	7 working days

Aldehydes <ul style="list-style-type: none"> • Acrolein • Formaldehyde • Acetaldehyde 	Radiello	7 working days
MTBE and Total Hydrocarbons	Radiello	7 working days

STATIONARY AIR EMISSION QUALITY ANALYSIS

Analysis	Method	Turnaround Time
Sample and Velocity Traverses	USEPA Method 1	7 working days
Stack Gas Velocity Volumetric Flow Rate	USEPA Method 2	7 working days
Dry Molecular Weight (O ₂ and CO ₂)	USEPA Method 3A	7 working days
Moisture Content	USEPA Method 4	7 working days
Total Particulate Matter (TPM)	USEPA Method 5	7 working days
Sulfur Dioxide (SO ₂)	USEPA Method 6C	7 working days
Nitrogen Oxide	USEPA Method 7E	7 working days
Sulfuric Acid, Sulfur Dioxide and Sulfur Trioxide	USEPA Method 8	7 working days
Carbon Monoxide	USEPA Method 10	7 working days
Hydrogen Halide and Halogen <ul style="list-style-type: none"> • Hydrogen Bromide • Hydrogen Chloride • Hydrogen Fluoride • Chlorine • Bromine 	USEPA Method 26A	7 working days
Heavy Metals <ul style="list-style-type: none"> • Arsenic • Chromium • Copper • Manganese • Zinc • Antimony • Barium 	USEPA Method 29	7 working days

<ul style="list-style-type: none"> • Cadmium • Cobalt • Lead • Nickel • Tellurium • Vanadium • Thallium • Mercury 		
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Analysis	Method	Turnaround Time
Volatile Organic Compounds (VOCs)	USEPA Method 0030	7 working days
Non-Methane Volatile Organic Compounds <ul style="list-style-type: none"> • NMVOC as Halogenated Compounds • NMVOC as Non-Halogenated Compounds 	USEPA Method 0030	7 working days
Ammonia	USEPA CTM 0027 (mod)	7 working days
Dioxins & Furans	USEPA Method 23A	14-21 working days

ALS testing capabilities does not limited to the analytes listed in the test catalog. Please contact ALS to enquire chemicals and analytes of interest.

OTHER ENVIRONMENTAL TESTING SERVICES

Water Services

- Drinking / Potable Water (MOH/WHO Guidelines)
- Wastewater & Sewage Effluent Discharge
- River Water, Marine Water and Groundwater
- Offshore Produced Water Characterization
- Field sampling services

Soil, Sediment and Waste

- Contaminated Site Assessment Analysis
- Marine Sediment
- Hazardous Waste Characterization (TCLP/TTLC)
- Waste Acceptance Criteria (WAC)
- Soil Gas

Industrial Hygiene & Occupational Health Testing

- Chemical exposure monitoring analysis
- Biological Monitoring (blood, urine and hair)

Specialized Testing Services

- Ultra-Trace Metals (ppb and ppt levels)
- Mercury Speciation (Methyl Mercury)
- Arsenic Speciation - As (III) and As (V)
- Microbiological Identification Profiling
- Microbial (Faecal and E.coli contamination) Source Tracking and Identification
- Ultra-Trace Organics (ppt levels)
- Rapid Toxicity Screening (Microtox)
- Oil Spillage Identification – Total Petroleum Hydrocarbon Fingerprinting Analysis
- Microplastic Analysis
- Plankton Identification
- Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS)





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