# TESTING AND CALIBRATION LABORATORY ACCREDITATION PROGRAM (LAP)

## Scope of Accreditation

*La présente portée d'accréditation existe également en français et est publiée séparément.*

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| **Legal Name of Accredited Laboratory:** | **Kinectrics Inc.** |
| Location Name or Operating as (if applicable): | Analytical and Environmental Services Laboratory |
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| **SCC File Number:** | 15313 |
| **Accreditation Standard(s)**: | ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories |
| **Fields of Testing:** | Biological<br>Chemical/Physical<br>Ionizing Radiation |
| **Program Specialty Area:** | Environmental Testing (ET) |
| **Initial Accreditation:** | 1996-02-15 |
| **Most Recent Accreditation:** | 2025-06-04 |
| **Accreditation Valid to:** | 2028-02-15 |

## ENVIRONMENTAL AND OCCUPATIONAL HEALTH AND SAFETY

### Environmental:

**Air Filter**



Canada

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| TWI_ICPXX | Determination of metals in solid and liquid matrices by ICPAES<br>Cd, Cu, Fe, Pb, S, Zn |

**Petroleum Products**

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|---|---|
| TWI_ARV | Determination of air release properties of petroleum products<br>Air release time |
| TWI_Bleed | Determination of oil separation of lubricating greases by pressure filtration<br>Bleed |
| TWI_BleedCS | Determination of oil separation of lubricating greases by conical sieve<br>Bleed |
| TWI_Cloud | Determination of cloud point of petroleum products by visual observation<br>Cloud point |
| TWI_Colour | Determination of colour value of petroleum products by a colourimeter<br>Oil colour |
| TWI_CSC | Determination of corrosive sulphur in insulating oil by measuring copper corrosion<br>Corrosive sulphur |
| TWI_FTIR-DBPC | Determination of 2,6-di-t-butyl-p-cresol in electrical insulating oil by infrared absorption<br>DBPC % |
| TWI_DielbrkdownStrength | Determination of breakdown voltage of insulating oil by measuring the dielectric strength<br>Breakdown voltage |
| TWI_GCGASTST | Determination of dissolved gases in oil by vacuum extraction gas chromatography<br>$H_2$, $N_2$, $O_2$, CO, $CO_2$, $CH_4$, $C_2H_2$, $C_2H_4$, $C_2H_6$ |
| TWI_Flash Point COC | Determination of flash/fire point of oils/organic liquids by Cleveland open cup visual observation<br>Flashpoint |
| TWI_Flash Point PMCC | Determination of flash point of oils/organic liquids by Pensky-Martens by visual observation<br>Flashpoint |
| TWI_Foam | Determination of foaming characteristics of lubricating oils<br>Foam tendency / foam stability |
| TWI_Microbiology_Fuel_Oils | Enumeration of viable bacteria and fungi in liquid fuels using filtration and culture procedures<br>Fungi and bacteria |
| TWI_LC Furan | Determination of 2-furfuraldehyde in transformer oils by liquid chromatography<br>2-Furfuraldehyde |

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| TWI_Interfacial Tension Auto | Determination of interfacial tension at oil/water interface by an automatic tensiometer<br>Interfacial tension |
| TWI_Neut or Tan No | Determination of neutralization (total acid) number of petroleum products by manual titration<br>Neutralization number |
| TWI_Laser Part Count | Determination of particle count distribution in oils by laser particle counting<br>Particles >4 mm, >6 mm, >14 mm, >25 mm, >38 mm, >70 mm, ISO-4, ISO-6, ISO-14 |
| TWI_Penetration | Determination of cone penetration of lubricating greases<br>Grease penetration |
| TWI_Pour Point | Determination of pour point of oil/petroleum products by visual observation<br>Pour point |
| TWI_Powerfac | Determination of the power factor of oil by heat dissipation<br>Power factor |
| TWI_RPVOT | Determination of oxidation of oils by rotating pressure vessel oxidation test<br>Oxidation time |
| TWI_Relative Density | Determination of gravity of oils relative to water by API or relative density (specific gravity)<br>Relative density |
| TWI_Rust | Determination of rusting of ferrous components with oils by visual observation<br>Rust |
| TWI_Auto-Viscosity | Determination of kinematic viscosity of transparent and opaque liquids (and calculation of dynamic viscosity)<br>Kinematic viscosity |
| TWI_KF Water | Determination of water content of petroleum products and insulating paper by Karl Fischer titration<br>Water content |
| TWI_H2O.Sep | Determination of water separability of petroleum products<br>Water separation |
| TWI_GC_PCB_OIL | Determination of polychlorinated biphenyls in mineral oil by gas chromatography - electron capture detection<br>Aroclors 1242, 1254, 1260 |

**Soil/Sediment**

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| TWI_ICPMSXX | Determination of elements including all their isotopes in solid and liquid matrices by ICPMS<br>Ag, Al, As, Au, B, Ba, Be, Bi, Br, Ca, Cd, Ce, Cl, Cm, Co, Cr, Cs, Cu, Dy, Eu, Er, Fe, Ga, Gd, Ge, Hf, Hg, Ho, I, In, Ir, K, La, Li, Lu, Mg, Mn, Mo, Na, Nb, Nd, Ni, Os, P, Pb, Pd, Pr, Pt, Pu, Ra, Rb, Re, Rh, Ru, S, Sb, Sc, Se, Si, Sm, Sn, Sr, Ta, Tb, Tc, Te, Ti, Th, Tl, Tm, U, V, W, Y, Yb, Zn, Zr |

**Water (Inorganic)**

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| TWI_CONH3 | Determination of ammonia in aqueous media by colourimetry<br>Ammonia |
| TWI_Conductivity | Determination of conductivity in water by electrode<br>Electrolytic conductivity (25 °C) |
| TWI_ICPMSHG | Determination of mercury in aqueous solutions by ICPMS<br>Hg |
| TWI_ICPMSXX | Determination of elements including all their isotopes in solid and liquid matrices by ICPMS<br>Ag, Al, As, Au, B, Ba, Be, Bi, Br, Ca, Cd, Ce, Cl, Cm, Co, Cr, Cs, Cu, Dy, Eu, Er, Fe, Ga, Gd, Ge, Hf, Hg, Ho, I, In, Ir, K, La, Li, Lu, Mg, Mn, Mo, Na, Nb, Nd, Ni, Os, P, Pb, Pd, Pr, Pt, Pu, Ra, Rb, Re, Rh, Ru, S, Sb, Sc, Se, Si, Sm, Sn, Sr, Ta, Tb, Tc, Te, Ti, Th, Tl, Tm, U, V, W, Y, Yb, Zn, Zr |
| TWI_ICPXX | Determination of metals in solid and liquid matrices by ICPAES<br>Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Ce, Cl, Co, Cr, Cu, Fe, Gd, K, Li, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, S, Sb, Se, Si, Sn, Sr, Ta, Ti, Th, Tl, U, V, W, Y, Zn, Zr |
| TWI_CON2H4 | Determination of hydrazine in water by colourimetry<br>Hydrazine |
| TWI_IC_ANIONS_WATER | Determination of inorganic anions in water by ion chromatography<br>Bromide, chloride, fluoride, nitrate, nitrite, phosphate, sulfate |
| TWI_GC_MORPHWATER | Determination of morpholine in water by derivatization gas chromatography mass spectrometry (GC-MS) or gas chromatography flame ionization detector (GC-FID)<br>Morpholine |
| TWI_PH | Determination of pH in water by electrode<br>pH |
| TWI_COSIO2 | Determination of dissolved molybdate - reactive silica in water by colourimetry<br>Reactive silica |

**Water (Organic)**

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| TWI_TOC_DOC | Determination of inorganic and organic carbon in water by combustion/infrared spectrometry<br>TIC, TOC, DOC |

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| TWI_OIL_WATER | Determination of solvent extractable material in water using hexane<br>Solvent extractable material |
| TWI_GC_PCB_WATER | Determination of polychlorinated biphenyls in water by solvent extraction - gas chromatography - electron capture detection (GC-ECD)<br>Aroclors 1242, 1254, 1260 |
| TWI_GC_EXTR_EPH_WATER | Determination of total extractable petroleum hydrocarbons (C10-C50) in water by solvent extraction - gas chromatography (GC-FID)<br>PHC F2 ($C_{10}$-$C_{16}$), F3 ($C_{16}$-$C_{34}$), F4 ($C_{34}$-$C_{50}$) |
| TWI_GCMS_VOC_WATER | Determination of volatile organic compounds in water by headspace - gas chromatography - mass spectrometry (GC-MS)<br>Acetone, acrolein, acrylonitrile, benzene, bromodichloromethane, bromomethane, chlorobenzene, chlorodibromomethane, chloroethane, chloroethene, 2-chloroethyl vinyl ether, chloromethane, 1,2-dibromoethane, 1,2-dichlorobenzene, 1,3- dichlorobenzene, 1,4-dichlorobenzene, dichlorodifluoromethane, 1,1-dichloroethane, 1,2- dichloroethane, 1,1-dichloroethene, cis-1,2- dichloroethene, *trans*-1,2-dichloroethene, dichloromethane, 1,2-dichloropropane, *cis*-1,3-dichloropropene, *trans*-1,3-dichloropropene, ethylbenzene, n-hexane, methyl ethyl ketone, methyl isobutyl ketone, methyl t-butyl ether, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, tetrachloroethene, tetrachloromethane, toluene, tribromomethane, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethene, trichlorofluoromethane, trichloromethane, vinyl acetate, o-xylene, m/p-xylene |

**Water/Wastewater (Solids)**

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| TWI_TS_TDS_TSS | Determination of total solids, total suspended solids and total dissolved solids in water by gravimetry<br>Total suspended solids, total dissolved solids, total solids |

**Radio-Chemistry**

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| TWI_RALPHAFECES | Determination of Pu, Am and Cm isotopes in feces by alpha spectrometry $^{238}Pu$, $^{239/240}Pu$, $^{241}Am$, $^{242}Cm$, $^{243/244}Cm$ |
| TWI_RALPHAURINE | Purification of Pu and U in urine for analysis by ICPMS and the analysis of U, Pu, Am and Cm isotopes in urine by alpha spectrometry $^{234}U$, $^{235}U$, $^{238}U$, $^{238}Pu$, $^{239/240}Pu$, $^{241}Am$, $^{242}Cm$, $^{243/244}Cm$ |
| TWI_RALPHA | Determination of isotopes of Am, Cm and Pu in water, soil, biota and air filters by alpha spectrometry $^{241}Am$, $^{238}Pu$, $^{239/240}Pu$, $^{241}Pu$, $^{242}Cm$, $^{243/244}Cm$ |

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| TWI_RC14BQ | Determination of total carbon-14 in water, soil, biota and air filters by liquid scintillation $^{14}C$ |
| TWI_RGAMMALL | Determination of gamma emitting radionuclides in water and solids by gamma spectrometry<br>Man-made and naturally occurring radionuclides |
| TWI_RGBETABQ | Determination of gross alpha & beta activity in water, soil, biota, air filters and smears by gas-flow proportional counting<br>Gross alpha, gross beta |
| TWI_RFE55BQX | Determination of iron-55 in water, solids, air filters, feces, urine, soil and vegetation by liquid scintillation counting<br>$^{55}Fe$ |
| TWI_RNI63BQX | Determination of nickel-63 in water, solids, air filters, feces, urine, soil and vegetation by liquid scintillation counting<br>$^{63}Ni$ |
| TWI_RALRA226BQX | Determination of radium-226 in water by alpha spectrometry<br>$^{226}Ra$ |
| TWI_RSRXBQ | Determination of strontium 89 & 90 in water, urine, feces, soil, biota and air filters by gas flow proportional counting and liquid scintillation counting<br>$^{89}Sr$, $^{90}Sr$ |
| TWI_RH3BQ | Determination of tritium in water, soil and biota by liquid scintillation<br>$^{3}H$ |

**Water (Toxicology)**

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| TWI_DM_Acute_Toxicity | Determination of acute toxicity in water using *Daphnia magna*<br>*Daphnia magna* pass/fail or LC50 (48 h) |
| TWI_Trout_Acute_Toxicity | Determination of acute toxicity in water using rainbow trout<br>Rainbow trout pass/fail or LC50 (96 h) |

**(Metals)**

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| TWI_Gases in Metals by TDMS | Determination of dissolved gases in metals by thermal desorption - mass spectrometry<br>Hydrogen, deuterium |

## Occupational Health and Safety:

**Personal Protection (Medical Mask Testing)**

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| ASTM F2100 | Standard specification for performance of materials used in medical face masks |
| ASTM F2299 / F2299M | Determining the initial efficiency of materials used in medical face masks to penetration by particulates using latex spheres, supplemented by TWI_PFE |

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| ASTM F2101 /<br>EN 14683 Annex B | Evaluating the bacterial filtration efficiency (BFE) of medical face mask material, using a biological aerosol of *Staphylococcus aureus,* supplemented by TWI_BFE |
| EN 14683 Annex C | Method for determination of breathability (Differential Pressure), supplemented by TWI_DIFFPRES |
| ASTM F1862 / F1862M /<br>EN 14683 | Resistance of medical face masks to penetration by synthetic blood (Horizontal projection of fixed volume at a known velocity), supplemented by TWI_MASKBLOOD |
| 16 CFR PART 1610 | Standard for the flammability of clothing textiles, supplemented by TWI_FLAME |

**Personal Protection (Respirator Testing)**

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| TWI_N95PFE | Method for Determination of Particulate Filter Efficiency Level for N95 Series Filters Against Solid Particulate as per NIOSH TEB-APR-STP-0059 and CA-95 filters per CSA Z94.4.1<br>For: non-powered, air-purifying respirators |
| TWI_N95DIFFPRES | Method for Determination of Inhalation and Exhalation Resistance for Air-purifying Respirators as per NIOSH Procedures TEB-APR-STP-0003 and TEB-APR-STP-0007 and CSA Z94.4.1 |

**Personal Protection (Barrier Face Coverings)**

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| ASTM F3502 Section 8.1 & 8.2 | Method for Determination of Particulate Filter Efficiency and Breathability for Barrier Face Coverings as per ASTM F3502, supplemented by TWI_BARRIER_PFE_DP |

**Personal Protection (Gowns)**

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| TM 042 | Water Resistance: Impact Penetration Test<br>Supplemented by TWI_WATERRESIST |
| TM 127 | Water Resistance: Hydrostatic Pressure Test<br>Supplemented by TWI_HYDROTEST |
| ASTM F1670 | Method for Resistance of Materials Used in Protective Clothing to Penetration by Synthetic blood as per ASM 1670/F1670M<br>Supplemented by TWI_BLOODGOWN |

Number of Scope Listings: 71

**Notes:**

ASTM: Formerly known as American Society for Testing and Materials
CSA: Canadian Standards Association
CFR: Code of Federal Regulations, USA
EN: European Standard
TWI: In-house Technical Work Instruction

This document forms part of the Certificate of Accreditation issued by the Standards Council of Canada (SCC). The original version is available in the Directory of Accredited Laboratories on the SCC website at www.scc-ccn.ca

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