

ELEMENTAL ANALYSIS OF PETROLEUM PRODUCTS CRM PRODUCT GUIDE

Element	Matrix	Instrument	Industry Method	Related ASI Product Codes
Sulfur	Mineral Oil (25 or 75cst), Diesel Fuel, Crude Oil, Residual Oil, Gasoline, Isooctane, Isooctane/Toluene, Toluene, Kerosene, Fuel Oil, Polysulfide Oil	ED-XRF	ASTM D4294, ISO 8754, ISO 13032, IP336	Calibration Sets: SMO10, SMO10HL, SMO8, SDF10, SCO10, SRO10 Check Standards: SMO-40, SRO-2.00, SDF-900, SFO-3.50, SRO-5000, SCO-1000, SCO-5000, SMO-500, SMO-1000, SMO-5000
		WD-XRF	ASTM D2622, ISO 14596, ISO 20884	
	Gasoline, Isooctane, Isooctane/Toluene, Xylenes, Mineral Oil, Kerosene	Monochromatic WD-XRF	ASTM D7039, ASTM D7220, EPA Tier 3 (Part 1090)	Calibration Sets: SG7, SIO11, SIO6-UL, ULSD0-25 Check Standards: SIO-10, SIO-250, SG-5, SG-9, SDF-10, SXY-5
		Combustion/UV Fluorescence	ASTM D5453, EPA Tier 3 (Part 1090)	
Nitrogen	Mineral Oil, Xylenes, Diesel Fuel, Crude Oil, Isooctane, Toluene, Kerosene, Gasoline, Fuel Oil	Syringe Chemiluminescence	ASTM D4629	Calibration Sets: NSIO6-UL, NST5-L, NIO6-UL, A4629 Check Standards: NT-5, NXY-5, NIO-5, NIO-10, NXY-10, NXY-50
		Boat Inlet Chemiluminescence	ASTM D5762	
Chlorine	Mineral Oil, Diesel Fuel, Isooctane, Xylenes, Isooctane/Toluene	Microcolometry	ASTM D5808	Calibration Sets: CISMO10, CISMO8, CIMO6-L Check Standards: CIDF-5, CIDF-10, CIXy-10, CIIO-10, CIMO-2, CIMO-8
	Crude Oil, Mineral Oil	WD-XRF	ASTM D4929C	
	Xylenes, Gasoline, Isooctane, Toluene, Isooctane/Toluene	Monochromatic WD-XRF	ASTM D7536	
Iron, Nickel, Vanadium	Crude Oil, Residual Oil, Mineral Oil (25 or 75cst)	WD-XRF	ASTM D8252, IP501, EN14597	Calibration Sets: SFNVMO12, SFNVRO12 Check Standards: SFNVMO-QC, SFNVRO-QC
	Hydrocarbon Oil	ICP-OES	ASTM D5708	
Ba, Ca, Mg, Zn	Lubricating Oil	AA	ASTM D4628	Calibration Sets: LOE23(Contains Ba, Ca, Cl, Cu, Mg, P, S, Zn) LOA11(Contains Ca, P, S, Zn) LOE17A(Ca, Cl, P, S, Zn) LOE17(Ca, P, S, Zn) LOE17AB(Ba, Ca, Cl, P, S, Zn) LOEASTM(Ca, P, S, Zn) Check Standards: D6443-CK
Ba, Ca, P, S, Zn		WD-XRF	ASTM D4927	
Ca, Cl, Cu, Mg, P, S, Zn			ASTM D6443	
P, S, Cl, Ca, Zn, Mo		ED-XRF	ASTM D7751	
P, S, Ca, Zn			ASTM D6481	
Ca, Mg, P, Zn		ICP-OES	ASTM D4951	
Wear Metals			ASTM D5185	
Lead, Manganese	Gasoline, Isooctane, Isooctane/Toluene, Xylenes, Mineral Oil	ED-XRF, WD-XRF	ASTM D5059	Calibration Sets: PbG7, PbIO7, PbG12, PbIO12 (Sets of 12 cover D5059 Part A & C)
Silicon	Gasoline, Isooctane, Mineral Oil	Monochromatic WD-XRF	ASTM D7757	Check Standards: SiLO-60, SiLO-300, SiMO-60, SiMO-300

Product Code Abbreviations	Available Volumes
Formula = (Element) (Matrix) (Concentration)	2mL, 5mL, 20mL Ampules
MO = Mineral Oil	50mL, 100mL, 250mL, 500mL, 1L, 1 Gallon Amber Glass Bottles
DF = Diesel Fuel	Calibration Sets in 100mL bottles unless otherwise noted
CO = Crude Oil	
IO = Isooctane	
T = Toluene	Refinery Laboratories
IT = Isooctane/Toluene Mix	3rd Party Testing Laboratories
Xy = Xylenes	Pipeline Companies
RO = Residual Oil	Tank Terminals
FO = Fuel Oil	Lubricant Manufacturers
G = Gasoline	Blending Facilities
HL = High Level(Includes Standard above 1% wt)	Analytical Instrument Manufacturers
L = Low(Includes Standard below 1% wt)	
UL = Ultra Low(Set includes standard under 1 mg/kg)	
ULSD = Ultra Low Sulfur Diesel	
NS = Nitrogen and Sulfur combined	
ELO = Elements in Lubricating Oil	
Number following matrix indicates number of standards	
Number that follows a dash indicates check standard with concentration in mg/kg	
Number with decimal indicates concentration in weight percent	



Custom Calibration Sets and Check Standards are available upon request. Element, Matrix, and Concentration can be customized to meet your unique application. All standards listed are covered under ASI Standards ISO 17034 Accreditation. Each standard is gravimetrically prepared using calibrated balances traceable to NIST weights. Every standard is assayed and verified for precision and accuracy at ASI's in house laboratory according to ISO 17025 guidelines. ASI CRMs are traceable to applicable NIST SRMs. Included with each order is a COA and MSDS. ASI Standards guarantees the quality of our products. If you are unsatisfied with your standard it will be replaced at no cost. To place a custom order just provide us with the desired elements, matrix, concentrations with units, number of standards, and volume size.

