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ASI 2013

ANALYTICAL SERVICES, INC.

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All standards are 100% guaranteed. Should you need to return something, please call us to make appropriate arrangements

ASI Quality Policy

Analytical Services is committed to producing laboratory instrument calibration standards and reference materials, accurately and in a timely manner, for the petrochemical, lube oil, crude oil, and polymers industries.

To demonstrate our commitment to product excellence and our focus on customer service, Analytical Services has developed and implemented a formal quality management system, based on compliance with requirements of the ISO 9001 standard.

The management and staff of Analytical Services are committed to complying with requirements and continually improving the effectiveness of our quality management system.



**THE MANAGEMENT SYSTEM OF
ANALYTICAL SERVICES, INC. IS
CERTIFIED TO ISO 9001**

Analytical Services, inc.

Physical Address:

25700 I-45 North
Suite 113
Spring, TX 77386

Accounts Receivable

P.O. Box 86179
Baton Rouge, LA
70879

Telephone: 281-419-9229

Toll Free: 1-866-419-9229

Fax: 1-281-419-5928

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SULFUR STANDARD SETS IN VARIOUS MATRICES FOR XRF

- Sulfur source is Di-n-butyl sulfide unless otherwise specified.
- Suitable for ASTM Methods D2622, D4294, D5453, D6334, D7039, D7212, D7220, ISO/CD 14596
- All sets contain 100 ml bottles, unless otherwise specified

MOST POPULAR SULFUR SETS

Product Code	Product	Method	Description	Prices	
SMO10	Sulfur in Mineral Oil	ASTM D2622 D4294	Sulfur in Mineral Oil, set of 10 Calibration Standards	Price Per Set\$640.	
				Individual (100 ml)\$ 90. Individual (1L)\$450. Individual (Gal).....\$900.	
Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%
1	0.0000	5	0.0200	9	0.0800
2	0.0025	6	0.0400	10	0.1000
3	0.0050	7	0.0500		
4	0.0100	8	0.0600		
SMO10(HL)	Sulfur in Mineral Oil	ASTM D2622 D4294	Sulfur in Mineral Oil, High level, set of 10 Calibration Standards	Price Per Set\$705.	
				Individual (100 ml)\$ 90. Individual (1L)\$450. Individual (Gal).....\$900.	
Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%
1	0.000	5	0.750	9	4.000
2	0.100	6	1.000	10	5.000
3	0.200	7	2.000		
4	0.500	8	3.000		
SMO11	Sulfur in Mineral Oil	ASTM D2622 D4294	Sulfur in Mineral Oil, set of 11 Calibration Standards	Price Per Set\$750.	
				Individual (100 ml)\$ 90. Individual (1L)\$450. Individual (Gal).....\$900.	
Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%
1	0.0000	5	0.0300	9	1.0000
2	0.0020	6	0.0600	10	2.5000
3	0.0050	7	0.1000	11	5.0000
4	0.0100	8	0.5000		

SULFUR STANDARD SETS IN VARIOUS MATRICES FOR XRF

MOST POPULAR SULFUR SETS

Product Code	Product	Method	Description	Prices	
SDF7	Sulfur in Diesel Fuel	ASTM	Sulfur in Synthetic Diesel Fuel, set of 7 Calibration Standards	Price Per Set\$500.	
		D2622		Individual (100 ml)\$ 90.	
		D4294		Individual (1L)\$450.	
		D7039		Individual (Gal).....\$900.	
Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%
1	0.000	4	0.050	7	0.100
2	0.020	5	0.060		
3	0.040	6	0.080		
SDF10	Sulfur in Diesel Fuel	ASTM	Sulfur in Synthetic Diesel Fuel, set of 10 Calibration Standards	Price Per Set\$705.	
		D2622		Individual (100 ml)\$ 95.	
		D4294		Individual (1L)\$450.	
				Individual (Gal).....\$900.	
Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%
1	0.000	5	1.000	9	4.000
2	0.100	6	1.500	10	5.000
3	0.250	7	2.000		
4	0.500	8	3.000		
SCO10	Sulfur in Crude Oil	ASTM	Sulfur in Crude Oil, set of 10 Calibration Standards	Price Per Set\$760.	
		D2622		Individual (100 ml)\$ 95.	
		D4294		Individual (1L)\$475.	
				Individual (Gal).....\$950.	
Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%
1	0.080	5	1.000	9	4.000
2	0.100	6	1.500	10	5.000
3	0.250	7	2.000		
4	0.500	8	3.000		
SRO10	Sulfur in Residual Oil	ASTM	Sulfur in Residual Oil, set of 10 Calibration Standards	Price Per Set\$760.	
		D2622		Individual (100 ml)\$ 95.	
		D4294		Individual (1L)\$475.	
				Individual (Gal).....\$900.	
Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%
1	0.250	5	2.000	9	4.000
2	0.500	6	2.500	10	5.000
3	1.000	7	3.000		
4	1.500	8	3.500		

SULFUR STANDARD SETS IN VARIOUS MATRICES FOR XRF

Product Code	Product	Method	Description	Prices	
S(BS)I13	Sulfur in Isooctane for Gasoline and Reformulated Gasoline analysis	ASTM	Sulfur in Isooctane, set of 13 Calibration Standards	Price Per Set\$925.	
		D2622		Individual (100 ml)\$ 95.	
		D4294		Individual (1L)\$475.	
		D6334		Individual (Gal).....\$950.	
		D7039			
Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%
1.....	0.0000	6.....	0.0100	11.....	0.1000
2.....	0.0010	7.....	0.0200	12.....	0.2000
3.....	0.0020	8.....	0.0300	13.....	0.3000
4.....	0.0030	9.....	0.0400		
5.....	0.0050	10.....	0.0600		
S(BS)IT10	Low Level Sulfur Standards	ASTM	Sulfur in Isooctane/ Toluene, Low Level set of 10 Calibration Standards	Price Per Set\$760.	
		D4294		Individual (100 ml)\$ 95.	
		D6334		Individual (1L)\$475.	
		D7039		Individual (Gal).....\$950.	
		D7212			
Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%
1.....	0.0000	5.....	0.0050	9.....	0.0500
2.....	0.0005	6.....	0.0075	10.....	0.1000
3.....	0.0010	7.....	0.0100		
4.....	0.0030	8.....	0.0300		
SCO7	Sulfur in Crude Oil	ASTM	Sulfur in Crude Oil, set of 7 Calibration Standards	Price Per Set\$540.	
		D2622		Individual (100 ml)\$ 95.	
		D4294		Individual (1L)\$475.	
				Individual (Gal).....\$950.	
Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%
1.....	0.080	4.....	0.500	7.....	2.000
2.....	0.100	5.....	1.000		
3.....	0.250	6.....	1.500		
SG10C	Sulfur in Gasoline	ASTM	Sulfur in Gasoline, set of 10 Calibration Standards, concentrations specified by customer	Price Per Set\$760.	
		D2622		Individual (100 ml)\$ 95.	
		D4292		Individual (1L)\$475.	
		D6334		Individual (Gal).....\$950.	
SG7C	Sulfur in Gasoline	ASTM	Sulfur in Gasoline, set of 7 Calibration Standards, concentrations specified by customer	Price Per Set\$545.	
		D2622		Individual (100 ml)\$ 95.	
		D4294		Individual (1L)\$475.	
		D6334		Individual (Gal).....\$950.	

SULFUR STANDARD SETS IN VARIOUS MATRICES FOR XRF

Product Code	Product	Method	Description	Prices
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SIO11	Sulfur in Isooctane	ASTM D5453	Sulfur in Isooctane, complete set of 11 Calibration Standards	Price Per Set\$675.
				Individual (100 ml)\$ 95.
				Individual (1L)\$475.
				Individual (Gal).....\$950.

Standard Number	Sulfur ng/uL	Standard Number	Sulfur ng/uL	Standard Number	Sulfur ng/uL
1	0.00	5	5.000	9	100.0
2	0.50	6	10.00	10	500.0
3	1.00	7	25.00	11	1000.0
4	2.50	8	50.00		

SIO3(H)	Sulfur in Isooctane High range	ASTM D5453	Sulfur in Isooctane, High Level, set of 3 Calibration Standards	Price Per Set\$260.
				Individual (100 ml)\$ 95.
				Individual (1L)\$475.
				Individual (Gal).....\$950.

Standard Number	Sulfur ng/uL	Standard Number	Sulfur ng/uL	Standard Number	Sulfur ng/uL
1	100.00	2	500.00	3	1000.0

SIO4(M)	Sulfur in Isooctane Mid range	ASTM D5453	Sulfur in Isooctane, Mid Level, set of 4 Calibration Standards	Price Per Set\$305.
				Individual (100 ml)\$ 95.
				Individual (1L)\$475.
				Individual (Gal).....\$950.

Standard Number	Sulfur ng/uL	Standard Number	Sulfur ng/uL
1	5.00	3	50.00
2	25.00	4	100.00

SIO6(L)	Sulfur in Isooctane Low range	ASTM D5453	Sulfur in Isooctane, Low Level, set of 6 Calibration Standards	Price Per Set\$435.
				Individual (100 ml)\$ 95.
				Individual (1L)\$475.
				Individual (Gal).....\$950.

Standard Number	Sulfur ng/uL	Standard Number	Sulfur ng/uL	Standard Number	Sulfur ng/uL
1	0.00	3	1.00	5	5.00
2	0.50	4	2.50	6	10.0

CUSTOMIZATION OF CATALOG SETS AVAILABLE

SULFUR STANDARD SETS IN VARIOUS MATRICES FOR XRF

Product Code	Product	Method	Description	Prices
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SISOH7	Sulfur Standards High range with 18% Zirconium Internal Standard	ISO/CD 14596	Sulfur in Mineral Oil, High Level, with 18% Zirconium Internal Standard, 7 Calibration Standards	Price Per Set\$725.
				Individual (100 ml).....\$140.
				Individual (1L)\$700.
				Individual (Gal)\$1,400.

Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%
1	0.00	4	1.00	7	2.50
2	0.40	5	1.50		
3	0.70	6	2.00		

SISOL8	Sulfur Standards Low range with 1% Zirconium Internal Standard	ISO/CD 14596	Sulfur in Mineral Oil, Low Level, with 1% Zirconium Internal Standard, 8 Calibration Standards	Price Per Set\$780.
				Individual (100 ml).....\$140.
				Individual (1L)\$700.
				Individual (Gal)\$1,200.

Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%
1	0.0000	4	0.0100	7	0.0750
2	0.0010	5	0.0250	8	0.1000
3	0.0050	6	0.0500		

SMO6H	Sulfur in Mineral Oil	ASTM D2622	Sulfur in Mineral Oil, High level, set of 6 Calibration Standards	Price Per Set\$410.
				Individual (100 ml).....\$ 90.
				Individual (1L)\$450.
				Individual (Gal).....\$900.

Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%
1	0.00	3	0.50	5	2.50
2	0.10	4	1.00	6	5.00

SMO7L	Sulfur in Mineral Oil	ASTM D2622 D4294	Sulfur in Mineral Oil, Low level, set of 7 Calibration Standards	Price Per Set\$480.
				Individual (100 ml).....\$ 90.
				Individual (1L)\$450.
				Individual (Gal).....\$900.

Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%	Standard Number	Sulfur Wt%
1	0.0000	4	0.0100	7	0.1000
2	0.0020	5	0.0300		
3	0.0050	6	0.0600		

Pricing subject to change without prior notice

SULFUR STANDARD FOR ASTM METHOD D7039

Product Code	Product	Description	Price per Set
SIN6C	Sulfur in Mineral Oil	Sulfur in Mineral Oil, set of 6 Calibration Standards @ 0, 10, 50, 100, 200 and 500 ppm	Price Per Set\$350.
SMO6(XOS)	Sulfur in Mineral Oil	Sulfur in Mineral Oil, set of 6 Calibration Standards@ 0, 10, 25, 100, 250 and 500 ppm	Price Per Set\$350.
SMO8(OX)	Sulfur in Mineral Oil	Sulfur in Mineral Oil, set of 8 Calibration Standards@ 0, 5, 10, 30, 50, 70, 100, 150 ppm	Price Per Set\$435.

ULTRA LOW SULFUR STANDARDS FOR EPA METHODS 80.580 TO 80.585

- *Suitable Standards for EPA Methods 80.580 to 80.585 and ASTM D7212, D7220*

Product Code	Product	Description	Prices per Set
ULSD0-25	Sulfur in Ultra Low Diesel Fuel	Sulfur in Ultra Low Diesel Fuel, set of 6 Calibration Standards @ 0, 5, 10, 15, 20, 25 ppm	Price Per Set\$400.
ULSD20-100	Sulfur in Ultra Low Diesel Fuel	Sulfur in Ultra Low Diesel Fuel, set of 5 Calibration Standards @ 20, 40, 60, 80, 100 ppm	Price Per Set\$400.
SEPA(G)H	Sulfur in Mineral Oil	Sulfur in Mineral Oil, Gravimetric Standard for EPA High Level Requirements, set of 2 Standards; 150 and 450 ppm, 200 ml each	Price Per Set\$240.
SEPA(G)L	Sulfur in Mineral Oil	Sulfur in Mineral Oil, Gravimetric Standard for EPA Low Level Requirements, Set of 2 Standards; 5 and 15 ppm, 200 ml each	Price Per Set\$240.
SEPA(P)H	Sulfur in Diesel Fuel	Sulfur in Diesel Fuel, Gravimetric Standards for EPA High Level Requirements, 300 ppm, 400 ml each	Price Per Set\$210.

ULTRA LOW SULFUR STANDARDS FOR EPA METHODS 80.580 TO 80.585

Product Code	Product	Description	Prices per Set
SEPA(P)L	Sulfur in Diesel Fuel	Sulfur in Diesel Fuel, Standards for EPA Low Level Requirements, 7 ppm, 400 ml each	Price Per Set\$210.
SEPA6C	Complete Set	Complete Set of Standards including SEPA(G)H, SEPA(G)L, SEPA(P)H, SEPA(P)L	Price Per Set\$800.

POLYSULFIDE STANDARDS

- *Suitable Standards for ASTM D2622, D4294, D5453, D7039, D7212, D7220*

Product Code	Product	Description	Prices per Set
S(PS)MO13	Polysulfides in Mineral Oil	Sulfur as Polysulfides in Mineral Oil, 13 Standards per set, Concentrations: 0, 1.0, 2.5, 5.0, 10, 25, 50, 75, 100, 250, 500, 750, 1000 ppm	Price Per Set\$820.
S(PS)MO6(H)	Polysulfides in Mineral Oil	Sulfur as Polysulfides in Mineral Oil, High level, 6 Standards per set, Concentrations: 0, 100, 250, 500, 750, 1000 ppm	Price Per Set\$440.
S(PS)MO6(L)	Polysulfides in Mineral Oil	Sulfur as Polysulfides in Mineral Oil, Low level, 6 Standards per set, Concentrations: 0, 1.0, 2.0, 3.0, 4.0, 5.0 Wt%	Price Per Set\$440.

DON'T SEE WHAT YOU NEED?

**ALL SETS CAN BE MODIFIED
ACCORDING TO INDIVIDUAL NEEDS.**

**SIMPLY CALL OR E-MAIL CUSTOMER SERVICE AT
SALES@ANALYTICALSERVICESINC.COM**

CHLORINE STANDARDS IN WASTE OIL

Product Code	Product	Description	Prices
CLW07	Chlorine in Waste Oil	Chlorinated Hydrocarbon in Waste Oil, set of 7 Calibration Standards	Price Per Set\$510. Individual (100 ml)\$ 95. Individual (1 L)\$465.

Standard Number	Chlorine Wt%	Standard Number	Chlorine Wt%	Standard Number	Chlorine Wt%
1	0.050	4	0.500	7	1.000
2	0.200	5	0.600		
3	0.400	6	1.800		

CHLORINE AND SULFUR STANDARDS IN VARIOUS MATRICES

Product Code	Product	Description	Prices
CLSMO10	Chlorine and Sulfur in Mineral Oil	Chlorinated Hydrocarbon and Di-n-butyl sulfide in Mineral Oil, set of 10 Calibration Standards	Price Per Set\$950. Individual (100 ml).....\$135. Individual (1L)\$675.

Standard Number	Sulfur Wt%	Chlorine Wt%	Standard Number	Sulfur Wt%	Chlorine Wt%
1	0.00	0.00	6	0.30	0.60
2	0.10	0.80	7	0.40	0.10
3	0.60	0.50	8	0.50	0.40
4	0.20	0.30	9	0.80	1.00
5	0.70	0.20	10	1.00	0.00

Product Code	Product	Description	Prices
CLSWO10	Chlorine and Sulfur in Waste Oil	Chlorinated Hydrocarbon and Di-n-butyl sulfide in Waste Oil, set of 10 Calibration Standards	Price Per Set\$975. Individual (100 ml).....\$140. Individual (1L)\$700.

Standard Number	Sulfur Wt%	Chlorine Wt%	Standard Number	Sulfur Wt%	Chlorine Wt%
1	0.500	1.000	6	1.750	0.800
2	2.500	0.020	7	1.250	0.050
3	1.000	0.650	8	2.000	1.000
4	1.500	0.200	9	2.250	0.380
5	1.750	0.500	10	0.750	0.100

SULFUR AND METALS IN OIL

- *Formulated for the analysis of fuel oils and residual oils*
- *Concentrations of Fe, Ni and V are independent of Sulfur concentration. Each certified component added independently.*
- *All sets contain 100 ml bottles, unless otherwise specified.*

Product Code	Product	Description	Prices
SFNVMO12	Sulfur and Metals in Mineral Oil	Sulfur and Metals in Mineral Oil; S, Fe, Ni, V Set of 12 Calibration Standards	Price Per Set.....\$1,865. Individual (100 ml).....\$ 245.

Standard Number	Sulfur Wt%	Iron (ppm)	Nickel (ppm)	Vanadium (ppm)
1	0.00	0	0	0
2	0.50	300	10	500
3	1.00	500	100	25
4	0.00	100	80	250
5	2.00	200	40	100
6	2.50	400	5	400
7	3.00	0	60	300
8	3.50	500	0	200
9	0.00	100	100	0
10	4.50	300	50	250
11	5.00	200	20	500
12	5.50	50	100	50

Product Code	Product	Description	Prices
SNVMO12	Sulfur and Metals in Mineral Oil	Sulfur and Metals in Mineral Oil: S, Ni, V Set of 12 Calibration Standards	Price Per Set.....\$1,595. Individual (100 ml).....\$ 215.

Standard Number	Sulfur Wt%	Nickel (ppm)	Vanadium (ppm)
1	0.00	0	0
2	0.50	10	500
3	1.00	100	25
4	1.50	80	250
5	2.00	40	100
6	2.50	5	400
7	3.00	60	300
8	3.50	0	200
9	4.00	100	0
10	4.50	50	250
11	5.00	20	500
12	5.50	100	50

SULFUR AND METALS IN OIL

Product Code	Product	Description	Prices
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SFNVRO12	Sulfur and Metals in Residual Oil	Sulfur and Metals in Residual Oil: S, Fe, Ni, V Set of 12 Calibration Standards	Price Per Set.....\$2,115. Individual (100 ml).....\$ 260.
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Standard Number	Sulfur Wt%	Iron (ppm)	Nickel (ppm)	Vanadium (ppm)
1	0.185	1	4	13
2	0.500	300	10	500
3	1.000	500	100	25
4	0.000	100	80	250
5	2.000	200	40	100
6	2.500	400	5	400
7	3.000	1	60	300
8	3.500	500	4	200
9	0.000	100	100	13
10	4.500	300	50	250
11	5.000	200	20	500
12	5.500	50	100	50

Product Code	Product	Description	Prices
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SNVRO12	Sulfur and Metals in Residual Oil	Sulfur and Metals in Residual Oil: S, Ni, V Set of 12 Calibration Standards	Price Per Set.....\$1,870. Individual (100 ml).....\$ 245.
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Standard Number	Sulfur Wt%	Nickel (ppm)	Vanadium (ppm)
1	0.185	4	1
2	0.500	10	500
3	1.000	100	25
4	1.500	80	250
5	2.000	40	100
6	2.500	5	400
7	3.000	60	300
8	3.500	4	200
9	4.000	100	1
10	4.500	50	250
11	5.000	20	500
12	5.500	100	50

LEAD STANDARDS IN GASOLINE AND ISOCTANE

• *Suitable for ASTM D5059*

Product Code	Product	Method	Description	Prices
BIIS	Bismuth Internal Standard	ASTM D5059	Internal Standard Conc: 0.793g Bi/L	Individual (100 ml).....\$100.

PBG7A	Lead in Gasoline	Covers the scope of ASTM D5059 Part A	7 Standards per set	Price Per Set\$565. Individual (100 ml).....\$ 95.
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Standard Number	Lead g/gal	Standard Number	Lead g/gal	Standard Number	Lead g/gal
1	0.000	4	2.000	7	5.000
2	0.100	5	3.000		
3	1.000	6	4.000		

PBG7C	Lead in Gasoline	Covers the scope of ASTM D5059 Part C	7 Standards per set	Price Per Set\$565. Individual (100 ml).....\$ 95.
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Standard Number	Lead g/gal	Standard Number	Lead g/gal	Standard Number	Lead g/gal
1	0.000	4	0.010	7	0.300
2	0.001	5	0.050		
3	0.005	6	0.100		

PBG12	Lead in Gasoline	Covers the scope of ASTM D5059 Parts A & C	This set is made up of PBG7A and PBG7C, 12 Standards per set	Price Per Set.....\$1,070. Individual (100 ml).....\$ 95.
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**CUSTOMIZATION OF
CATALOG SETS
AVAILABLE**

LEAD STANDARDS IN GASOLINE AND ISOCTANE

Product Code	Product	Method	Description	Prices	
PBIO7A	Lead in Isooctane	ASTM D5059 Part A	7 Standards per set	Price Per Set\$565. Individual (100 ml)\$ 95.	
Standard Number	Lead g/gal	Standard Number	Lead g/gal	Standard Number	Lead g/gal
1	0.000	4	2.000	7	5.000
2	0.100	5	3.000		
3	1.000	6	4.000		
PBIO7C	Lead in Isooctane	ASTM D5059 Part C	7 Standards per set	Price Per Set\$565. Individual (100 ml)\$ 95.	
Standard Number	Lead g/gal	Standard Number	Lead g/gal	Standard Number	Lead g/gal
1	0.000	4	0.010	7	0.300
2	0.001	5	0.050		
3	0.005	6	0.100		
PBIO12	Lead in Isooctane	ASTM D5059 Parts A & C	This set is made up of PBIO7A and PBIO7C 12 Standards per set	Price Per Set.....\$1,070. Individual (100 ml)\$ 95.	



VANADIUM AND NICKEL STANDARDS

- *With Manganese Internal Standards in Xylene - Mineral Oil*
- *Suitable for ISO/CD 14596*
- *All sets contain 100 ml bottles, unless otherwise specified.*

Product Code	Product	Method	Description	Prices
MNIS-0.05	Manganese Internal Standard, 0.05%	ISO/CD 14596	Internal Standard Concentration 0.05% 500ml	500 ml\$215.
				Individual (100 ml).....\$105.
				Individual (1L)\$370.

NiISO7	Nickel Standards with 0.05% Manganese Internal Standard.	ISO/CD 14596	Nickel Reagent and 0.05% Manganese Internal Standard in Xylene-Mineral Oil, set of 7 Calibration Standards	Price Per Set\$785.
				Individual (100 ml).....\$125.
				Individual (1L)\$620.

Standard Number	Ni Wt%	Standard Number	Wt% Ni	Standard Number	Wt% Ni
1	0.0000	4	0.0025	7	0.0100
2	0.0005	5	0.0050		
3	0.0010	6	0.0070		

VISOH7	Vanadium Standard, High Range with 0.05% Manganese Internal Standard	ISO/CD 14596	Vanadium Reagent and 0.05% Manganese Internal Standard in Xylene-Mineral Oil, set of 7 Calibration Standards	Price Per Set\$785.
				Individual (100 ml).....\$125.
				Individual (1L)\$620.

Standard Number	V Wt%	Standard Number	V Wt%	Standard Number	V Wt%
1	0.000	4	0.050	7	0.100
2	0.030	5	0.060		
3	0.040	6	0.080		

VISOL9	Vanadium Standard, Low range with 0.05% Manganese Internal Standard	ISO/CD 14596	Vanadium Reagent and 0.05% Manganese Internal Standard in Xylene-Mineral Oil, set of 7 Calibration Standards	Price Per Set\$910.
				Individual (100 ml).....\$150.
				Individual (1L)\$620.

Standard Number	V Wt%	Standard Number	V Wt%	Standard Number	V Wt%
1	0.0005	4	0.0075	7	0.0150
2	0.0025	5	0.0100	8	0.0175
3	0.0050	6	0.0125	9	0.0200

LUBRICATING OIL STANDARDS

- All sets in 100 ml bottles
- Calibration standards for the analysis of lubricating oils
- ASTM D4927, D6443, D6481, Methods for IP

Product Code	Product	Method	Description	Prices
LOE10	Lubricating Oil Elements: Ca, Cl, Cu, Mg, P, S, Zn	ASTM D4927 D6443 D6481	Abbreviated set for ASTM method, set of 10 Calibration Standards	Price Per Set\$2,145. Individual (100 ml)\$ 370.

Standard Number	Ca Wt%	Cl Wt%	Cu Wt%	Mg Wt%	P Wt%	S Wt%	Zn Wt%
1	0.0200	0.0300	0.0100	0.2000	0.2500	1.000	0.0200
2	0.0200	0.0200	0.0500	0.2000	0.0200	0.0200	0.2500
3	0.0200	0.2000	0.0100	0.0400	0.2500	0.1500	0.2500
4	0.0200	0.2000	0.0500	0.0400	0.0200	1.000	0.0200
5	0.4000	0.0200	0.0100	0.0400	0.0200	1.000	0.2500
6	0.4000	0.0200	0.0500	0.0400	0.2500	0.0200	0.0200
7	0.4000	0.2000	0.0100	0.2000	0.0200	0.0200	0.0500
8	0.4000	0.2000	0.0500	0.2000	0.2500	1.0000	0.2500
9	0.2000	0.1000	0.0250	0.0800	0.1500	0.5000	0.1000
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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LUBRICATING OIL STANDARDS

Product Code	Product	Method	Description	Prices
LOE17	Lubricating Oil Elements: Ca, P, S, Zn	ASTM D4927 D6443 D6481	Engine Oil set of 17 Calibration Standards	Price Per Set\$1,980. Individual (100 ml)\$ 245.

Standard Number	Ca Wt%	P Wt%	S Wt%	Zn Wt%
1	0.6000	0.0050	0.1750	0.0600
2	0.5000	0.2000	0.0500	0.0800
3	0.4000	0.1500	0.3000	0.1800
4	0.2600	0.2500	0.1500	0.1200
5	0.0050	0.0050	0.4500	0.0700
6	0.4000	0.0250	0.3500	0.1000
7	0.3000	0.0600	0.2500	0.1200
8	0.2000	0.1000	0.4500	0.1000
9	0.0600	0.0800	0.3000	0.1300
10	0.0600	0.0500	0.2000	0.0500
11	0.0500	0.1200	0.1000	0.0750
12	0.0250	0.1500	0.2000	0.1300
13	0.0050	0.2000	0.4000	0.1500
14	0.1700	0.2500	0.5500	0.1100
15	0.1000	0.1000	0.2000	0.2000
16	0.0100	0.0100	0.6000	0.2500
17	0.0000	0.0000	0.0000	0.0000

LUBRICATING OIL STANDARDS

Product Code	Product	Method	Description	Prices
LOA11	Lubricating Oil Additives: Ca, P, S, Zn	ASTM D4927 D6443 D6481	Similar to LOE17, but additive package concentration ranges, set of 11 Calibration Standards	Price Per Set\$2,475. Individual (100 ml).....\$ 335.

Standard Number	Ca Wt%	P Wt%	S Wt%	Zn Wt%
1	0.500	1.000	0.500	0.500
2	2.500	1.000	2.500	2.000
3	2.000	1.250	1.000	1.500
4	5.000	0.000	0.000	0.000
5	4.000	0.500	1.250	0.500
6	2.500	0.750	4.000	1.000
7	4.000	0.000	1.500	1.000
8	0.500	2.000	5.000	1.000
9	1.000	0.750	2.000	1.500
10	2.500	1.200	3.000	0.500
11	0.000	0.000	0.000	0.000

LUBRICATING OIL STANDARDS

Product Code	Product	Method	Description	Prices
LOE17A	Lubricating Oil Elements: Ca, Cl, P, S, Zn	ASTM D4927 D6443 D6481	Same as LOE17, but also contains Cl, set of 10 Calibration Standards	Price Per Set\$2,335. Individual (100 ml)\$ 285.

Standard Number	Ca Wt%	Cl Wt%	P Wt%	S Wt%	Zn Wt%
1	0.6000	0.1000	0.0050	0.1750	0.0600
2	0.5000	0.0000	0.2000	0.0500	0.0800
3	0.4000	0.0100	0.1500	0.3000	0.1800
4	0.2600	0.5000	0.2500	0.1500	0.1200
5	0.0050	1.0000	0.0050	0.4500	0.0700
6	0.4000	0.4000	0.0250	0.5000	0.1000
7	0.3000	0.1000	0.0600	0.2500	0.1200
8	0.2000	0.0100	0.1000	0.4500	0.1000
9	0.0600	0.0500	0.0800	0.3000	0.1300
10	0.0600	0.2000	0.0500	0.2000	0.0500
11	0.0500	0.0500	0.1200	0.1000	0.0750
12	0.0250	0.8000	0.1500	0.2000	0.1300
13	0.0050	1.0000	0.2000	0.4000	0.1500
14	0.1700	0.6000	0.2500	0.5500	0.1100
15	0.1000	0.2000	0.1000	0.2000	0.2000
16	0.0100	0.4000	0.0100	0.6000	0.2500
17	0.0000	0.0000	0.0000	0.0000	0.0000

LUBRICATING OIL STANDARDS

Product Code	Product	Method	Description	Prices
LOE17A/B	Lubricating Oil Elements: Ba, Ca, Cl, P, S, Zn	ASTM D4927 D6443 D6481	Same as LOE17, but also contains Ba and Cl, set of 17 Calibration Standards	Price Per Set\$2,530. Individual (100 ml)\$ 330.

Standard Number	Ba Wt%	Ca Wt%	Cl Wt%	P Wt%	S Wt%	Zn Wt%
1	0.1000	0.6000	0.1000	0.0050	0.1750	0.0600
2	0.1750	0.5000	0.0000	0.2000	0.0500	0.0800
3	0.0000	0.4000	0.0100	0.1500	0.3000	0.1800
4	0.0250	0.2600	0.5000	0.2500	0.1500	0.1200
5	0.1500	0.0050	1.0000	0.0050	0.4500	0.0700
6	0.0000	0.4000	0.4000	0.0250	0.3500	0.1000
7	0.2000	0.3000	0.1000	0.0600	0.2500	0.1200
8	0.0000	0.2000	0.0100	0.1000	0.4500	0.1000
9	0.1000	0.0600	0.0500	0.0800	0.3000	0.1300
10	0.0500	0.0600	0.2000	0.0500	0.2000	0.0500
11	0.0750	0.0500	0.5000	0.1200	0.1000	0.7500
12	0.0100	0.0250	0.8000	0.1500	0.2000	0.1300
13	0.0050	0.0050	1.0000	0.2000	0.4000	0.1500
14	0.0000	0.1700	0.6000	0.2500	0.5500	0.1100
15	0.0000	0.1000	0.2000	0.1000	0.2000	0.2000
16	0.0050	0.0100	0.4000	0.0100	0.6000	0.2500
17	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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LUBRICATING OIL STANDARDS

Product Code	Product	Method	Description	Prices
LOE17B	Lubricating Oil Elements: Ba, Ca, P, S, Zn	ASTM D4927 D6443 D6481	Same as LOE17, but also contains Ba, set of 17 Calibration Standards	Price Per Set\$2,365. Individual (100 ml)\$ 285.

Standard Number	Ba Wt%	Ca Wt%	P Wt%	S Wt%	Zn Wt%
1	0.1000	0.6000	0.0050	0.1750	0.0600
2	0.1750	0.5000	0.2000	0.0500	0.0800
3	0.0000	0.4000	0.1500	0.3000	0.1800
4	0.0250	0.2600	0.2500	0.1500	0.1200
5	0.1500	0.0050	0.0050	0.4500	0.0700
6	0.0000	0.4000	0.0250	0.3500	0.1000
7	0.2000	0.3000	0.0600	0.2500	0.1200
8	0.0000	0.2000	0.1000	0.4500	0.100
9	0.0000	0.0600	0.0800	0.3000	0.1300
10	0.0500	0.0600	0.0500	0.2000	0.0500
11	0.0750	0.0500	0.1200	0.1000	0.750
12	0.0100	0.0250	0.1500	0.2000	0.1300
13	0.0050	0.0050	0.2000	0.4000	0.1500
14	0.0000	0.1700	0.2500	0.5500	0.1100
15	0.0000	0.1000	0.1000	0.2000	0.2000
16	0.0050	0.0100	0.0100	0.6000	0.2500
17	0.0000	0.0000	0.0000	0.0000	0.0000

LUBRICATING OIL STANDARDS

Product Code	Product	Method	Description	Prices
LOE17C	Lubricating Oil Elements: Ca, Mg, P, S, Zn	ASTM D4927 D6443 D6481	Same as LOE17, but also contains Mg, set of 17 Calibration Standards	Price Per Set\$ 2,365. Individual (100 ml)\$ 285.

Standard Number	Ca Wt%	Mg Wt%	P Wt%	S Wt%	Zn Wt%
1	0.6000	0.1000	0.0050	0.1750	0.0600
2	0.5000	0.1500	0.2000	0.0500	0.0800
3	0.4000	0.3500	0.1500	0.3000	0.1800
4	0.2600	0.2250	0.2500	0.1500	0.1200
5	0.0050	0.4500	0.0050	0.4500	0.0700
6	0.4000	0.5000	0.0250	0.3500	0.1000
7	0.3000	0.3250	0.0600	0.2500	0.1200
8	0.2000	0.2500	0.1000	0.4500	0.1000
9	0.0600	0.1000	0.0800	0.3000	0.1300
10	0.0600	0.4000	0.0500	0.2000	0.0500
11	0.0500	0.3000	0.1200	0.1000	0.0750
12	0.0250	0.2000	0.1500	0.2000	0.1300
13	0.0050	0.3750	0.2000	0.4000	0.1500
14	0.1700	0.1750	0.2500	0.5500	0.1100
15	0.1000	0.4250	0.1000	0.2000	0.2000
16	0.0100	0.2750	0.0100	0.6000	0.2500
17	0.0000	0.0000	0.0000	0.0000	0.0000

LUBRICATING OIL STANDARDS

Product Code	Product	Method	Description	Prices
LOE22	Lubricating Oil Elements: Ca, Cl, Cu, Mg, P, S, Zn	ASTM D4927	Complete set for ASTM method D4927, set of 22 Calibration Standards	Price Per Set\$2,970. Individual (100 ml)\$ 370.

Standard Number	Ca Wt%	Cl Wt%	Cu Wt%	Mg Wt%	P Wt%	S Wt%	Zn Wt%
1	0.3000	0.0800	0.0300	0.3600	0.0600	0.2750	0.0600
2	0.2500	0.1000	0.0000	0.0100	0.1500	0.0000	0.1500
3	0.5000	0.0000	0.0350	0.1600	0.1500	0.0000	0.0200
4	0.3500	0.0100	0.0000	0.1200	0.0800	0.2000	0.0000
5	0.1100	0.0000	0.0150	0.1000	0.1000	0.3000	0.0500
6	0.2000	0.1000	0.0000	0.2000	0.0500	0.2500	0.1500
7	0.0000	0.0500	0.0250	0.0000	0.0000	0.4500	0.0200
8	0.1500	0.0300	0.0000	0.1000	0.0300	0.4000	0.0400
9	0.2500	0.1500	0.0100	0.1600	0.0000	0.3500	0.0800
10	0.1000	0.1500	0.0400	0.0050	0.0300	0.7500	0.1500
11	0.2600	0.0500	0.0000	0.0000	0.0000	0.7500	0.0000
12	0.2000	0.0000	0.0050	0.1400	0.0800	0.5000	0.0800
13	0.0000	0.0000	0.0050	0.0200	0.0200	0.0200	0.0200
14	0.0700	0.1500	0.0200	0.0800	0.1400	0.6500	0.1500
15	0.0500	0.0000	0.0000	0.0000	0.1500	0.0000	0.0000
16	0.4000	0.0000	0.0010	0.0800	0.0000	0.5000	0.0200
17	0.1800	0.0200	0.0200	0.0000	0.0200	0.6000	0.0600
18	0.4000	0.0100	0.0010	0.0100	0.0200	0.2000	0.1000
19	0.0100	0.0200	0.0400	0.0100	0.0200	0.2000	0.1000
20	0.0500	0.0050	0.0500	0.0000	0.0080	0.0000	0.1200
21	0.2000	0.0500	0.0200	0.0800	0.0500	0.2750	0.0500
22	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

LUBRICATING OIL STANDARDS

Product Code	Product	Method	Description	Prices
LOE17B/C	Lubricating Oil Elements: Ba, Ca, Mg, P, S, Zn	ASTM D4927 D6443 D6481	Same as LOE17, but also contains Ba and Mg set of 17 Calibration Standards	Price Per Set\$2,530. Individual (100 ml)\$ 330.

Standard Number	Ba Wt%	Ca Wt%	Mg Wt%	P Wt%	S Wt%	Zn Wt%
1	0.0250	0.6000	0.1000	0.0050	0.1750	0.0600
2	0.0000	0.5000	0.1500	0.2000	0.0500	0.0800
3	0.1000	0.4000	0.3500	0.1500	0.3000	0.1800
4	0.1750	0.2600	0.2250	0.2500	0.1500	0.1200
5	0.1500	0.0050	0.0000	0.0050	0.4500	0.0700
6	0.0000	0.4000	0.5000	0.0250	0.3500	0.1000
7	0.1000	0.3000	0.3250	0.0600	0.2500	0.1200
8	0.2000	0.2000	0.2500	0.1000	0.4500	0.1000
9	0.0500	0.0600	0.1000	0.0800	0.3000	0.1300
10	0.0750	0.0600	0.4000	0.0500	0.2000	0.0500
11	0.0100	0.0500	0.3000	0.1200	0.1000	0.0750
12	0.0000	0.0250	0.2000	0.1500	0.2000	0.1300
13	0.1750	0.0050	0.3750	0.2000	0.4000	0.1500
14	0.0050	0.1700	0.1750	0.2500	0.5500	0.1100
15	0.0000	0.1000	0.4250	0.1000	0.2000	0.2000
16	0.0050	0.0100	0.2750	0.0100	0.6000	0.2150
17	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

LUBRICATING OIL STANDARDS

Product Code	Product	Method	Description	Prices
LOE23	Lubricating Oil elements: Ba, Ca, Cl, Cu, Mg, P, S, Zn	ASTM D4927 D6443 D6481	Same as LOE 22, but contains Ba, set of 23 Calibration Standards	Price Per Set\$3,190. Individual (100 ml)\$ 420.

Standard Number	Ba Wt%	Ca Wt%	Cl Wt%	Cu Wt%	Mg Wt%	P Wt%	S Wt%	Zn Wt%
1	0.1000	0.3000	0.0800	0.0300	0.0600	0.0600	0.2750	0.0600
2	0.1750	0.2500	0.1000	0.0000	0.0100	0.1500	0.0000	0.1500
3	0.0400	0.5000	0.0000	0.0350	0.1600	0.1500	0.0000	0.0200
4	0.0200	0.3500	0.0100	0.0000	0.1200	0.0800	0.2000	0.0000
5	0.1500	0.1100	0.0000	0.0150	0.1000	0.1000	0.3000	0.0500
6	0.0000	0.2000	0.1000	0.0000	0.2000	0.0500	0.2500	0.1500
7	0.2000	0.0000	0.0500	0.0250	0.0000	0.0000	0.4500	0.0200
8	0.0000	0.1500	0.0300	0.0000	0.1000	0.0300	0.4000	0.0400
9	0.0000	0.2500	0.1500	0.0100	0.1600	0.0000	0.3500	0.0800
10	0.0000	0.1100	0.1500	0.0400	0.0050	0.0300	0.7500	0.1500
11	0.1000	0.2600	0.0500	0.0000	0.0000	0.0000	0.7500	0.0000
12	0.0500	0.2000	0.0000	0.0050	0.1400	0.0800	0.5000	0.0800
13	0.0000	0.0000	0.0000	0.0050	0.0200	0.0200	0.2000	0.0200
14	0.0800	0.0700	0.1500	0.0200	0.0800	0.1400	0.6500	0.1500
15	0.0100	0.0500	0.0000	0.0000	0.0000	0.1500	0.0000	0.0000
16	0.0000	0.4000	0.0000	0.0010	0.0800	0.0000	0.5000	0.0200
17	0.0000	0.1800	0.0200	0.0200	0.0000	0.0200	0.6000	0.0600
18	0.0000	0.4000	0.0100	0.0010	0.0100	0.0200	0.0000	0.0000
19	0.1500	0.0100	0.0200	0.0400	0.0100	0.0200	0.2000	0.1000
20	0.0050	0.0500	0.0050	0.0500	0.0000	0.0080	0.0000	0.1200
21	0.1000	0.2000	0.0500	0.0200	0.0800	0.0500	0.2750	0.0500
22	0.1200	0.2000	0.0000	0.0000	0.0000	0.0000	0.7500	0.0000
23	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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LUBRICATING OIL STANDARDS

Product Code	Product	Method	Description	Prices
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LOEASTM1	Lubricating Oil Elements: Ca, P, S, Zn	ASTM D4927 D6443 D6481	Same as LOE 17, but slightly different concentration ranges, set of 17 Calibration Standards	Price Per Set\$1,980. Individual (100 ml)\$ 245.
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Standard Number	Ca Wt%	P Wt%	S Wt%	Zn Wt%
1	0.0050	0.0050	0.0500	0.0500
2	0.6000	0.0000	0.0000	0.0000
3	0.0000	0.3000	0.0000	0.0000
4	1.0000	0.0000	1.0000	0.0000
5	0.0000	0.0000	0.0000	0.3000
6	0.0050	0.2500	0.8000	0.3000
7	0.5000	0.1500	0.5000	0.1500
8	0.0100	0.2000	0.1000	0.2500
9	0.0500	0.0100	0.4000	0.0750
10	0.1000	0.1500	0.2000	0.2000
11	0.2000	0.2000	0.8000	0.1000
12	0.4000	0.0050	0.8000	0.3000
13	0.6000	0.1000	0.5000	0.0500
14	0.8000	0.0100	0.0500	0.1000
15	1.0000	0.3000	1.0000	0.1500
16	0.4000	0.0500	0.6000	0.2500
17	0.0000	0.0000	0.0000	0.0000

LOEASTM2	Lubricating Oil Elements: Ba, Ca, Cl, Cu, Mg, P, S, Zn	ASTM D4927 D6443 D6481	Same as LOE10, but also contains Ba, set of 10 Calibration Standards	Price Per Set\$2,420. Individual (100 ml)\$ 420.
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Standard Number	Ba Wt%	Ca Wt%	Cl Wt%	Cu Wt%	Mg Wt%	P Wt%	S Wt%	Zn Wt%
1	0.0200	0.0200	0.0300	0.0100	0.2000	0.2500	0.1000	0.0200
2	0.2500	0.0200	0.0200	0.0500	0.2000	0.0200	0.0200	0.2500
3	0.0200	0.0200	0.2000	0.0100	0.0400	0.2500	0.1500	0.2500
4	0.2500	0.0200	0.2000	0.0500	0.0400	0.0200	1.0000	0.0200
5	0.0200	0.4000	0.0200	0.0100	0.0400	0.0200	1.0000	0.2500
6	0.2500	0.4000	0.0200	0.0500	0.0400	0.2500	0.0200	0.2000
7	0.0200	0.4000	0.2000	0.0100	0.2000	0.0200	0.0200	0.0500
8	0.2500	0.4000	0.2000	0.0500	0.2000	0.2500	1.0000	0.2500
9	0.1300	0.2000	0.1000	0.0250	0.0800	0.1500	0.5000	0.1000
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

LUBRICATING OIL STANDARDS

Product Code	Product	Method	Description	Prices
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LOEASTM4	Lubricating Oil Elements: Ca, Mg, P, S, Zn	ASTM D4927 D6443 D6481	Same as LOEASTM1, but also contains Mg, set of 17 Calibration Standards	Price Per Set\$2,365. Individual (100 ml)\$ 285.
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Standard Number	Ca Wt%	Mg Wt%	P Wt%	S Wt%	Zn Wt%
1	0.0050	0.0050	0.0050	0.0050	0.1000
2	0.6000	0.0000	0.0000	0.0000	0.1500
3	0.0000	0.3000	0.0000	0.0000	0.3500
4	1.0000	0.0000	1.0000	0.0000	0.2250
5	0.0000	0.0000	0.0000	0.3000	0.4500
6	0.0050	0.2500	0.8000	0.3000	0.5000
7	0.5000	0.1500	0.5000	0.1500	0.3250
8	0.0100	0.2000	0.1000	0.2500	0.2500
9	0.0500	0.0100	0.4000	0.0750	0.0500
10	0.1000	0.1500	0.2000	0.2000	0.4000
11	0.2000	0.2000	0.8000	0.1000	0.3000
12	0.4000	0.0050	0.8000	0.3000	0.2000
13	6.0000	0.1000	0.5000	0.0500	0.3750
14	0.8000	0.0100	0.0500	0.1000	0.1750
15	1.0000	0.3000	1.0000	0.1500	0.4250
16	0.4000	0.0500	0.6000	0.2500	0.2750
17	0.0000	0.0000	0.0000	0.0000	0.0000

Product Code	Product	Method	Description	Prices
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ELO11-10E-IP	Residual Oil Elements: Al, Ca, Fe, Na, Ni, P, S, Si, V, Zn	IP PM-DR/09	Elements in Residual Fuel Oils for Analysis by WDXRF	Price Per Set\$2,900. Individual (100 ml)\$ 400.
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Stand. Num.	Al Wt%	Ca Wt%	Fe Wt%	Na Wt%	Ni Wt%	P Wt%	SSi Wt%	V Wt%	Zn Wt%	Wt%
1	0.0005	0.0010	0.0250	0.0010	0.0050	0.0020	5.0000	0.0050	0.0075	0.0010
2	0.0100	0.0075	0.0100	0.0000	0.0005	0.0005	2.0000	0.0100	0.0300	0.0002
3	0.0010	0.0100	0.0000	0.0020	0.0000	0.0010	0.5000	0.0000	0.0350	0.0050
4	0.0025	0.0030	0.0050	0.0200	0.0075	0.0050	4.0000	0.0250	0.0050	0.0040
5	0.0075	0.0040	0.0150	0.0005	0.0100	0.0075	0.3000	0.0200	0.0000	0.0015
6	0.0050	0.0000	0.0075	0.0015	0.0040	0.0100	1.0000	0.0030	0.0100	0.0075
7	0.0150	0.0050	0.0200	0.0100	0.0020	0.0040	0.7250	0.0150	0.0010	0.0000
8	0.0000	0.0005	0.0010	0.0000	0.0010	0.0000	0.1000	0.0010	0.0200	0.0020
9	0.0025	0.0020	0.0005	0.0050	0.0015	0.0025	2.5000	0.0050	0.0005	0.0005
10	0.0050	0.0150	0.0025	0.0150	0.0025	0.0015	3.0000	0.0025	0.0025	0.0010
11	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

METAL WORKING FLUIDS STANDARDS

Product Code	Product	Description	Prices
MWFL13	Metal Working Fluids CI, P, S	For the analysis of Lubricant Base Metal Working Fluids, set of 13 Calibration Standards	Price Per Set\$1,485.

Standard Number	CI Wt%	P Wt%	S Wt%
1	0.0000	0.0000	0.0000
2	0.7500	0.0250	0.5000
3	0.0500	0.1000	3.0000
4	1.0000	0.5000	2.5000
5	0.1000	0.0050	2.0000
6	1.5000	0.2000	1.0000
7	2.0000	0.0050	3.0000
8	1.0000	0.0500	0.1000
9	0.5000	0.4000	0.0000
10	2.0000	0.2000	1.5000
11	0.0000	0.5000	1.5000
12	1.2500	0.0100	0.0500
13	0.0500	0.3000	0.0500

DON'T SEE WHAT YOU NEED?

**ALL SETS CAN BE MODIFIED
ACCORDING TO INDIVIDUAL NEEDS.**

**SIMPLY CALL OR E-MAIL CUSTOMER SERVICE AT
SALES@ANALYTICALSERVICESINC.COM**

STABILIZED ORGANO-METALLIC SOLUTIONS

LOMS: Concentrated Liquid Organo-Metallic Solutions (Stabilized and Ready for Use.) These concentrated solutions are stabilized with Analytical Services, Inc. proprietary chelation and stabilization solution, and can be used to formulate sets of standards for the analysis of additive elements in lubricating oils; iron, nickel and vanadium in residual oil, and wear metal in oils for X-Ray Fluorescence Spectroscopy (XRF). These organo-metallic solutions can also be used to prepare single element or multi-element standards for plasma emission (ICP or DCP), rotating disk (RDE), or atomic absorption (AA). The starting materials for the standards are ULTRAPURE REAGENTS and have been certified against NIST SRMs whenever available. THEY DO NOT CONTAIN PHOSPHORUS OR SULFUR, unless otherwise noted. TRACE IMPURITIES ARE DOCUMENTED ON THE CERTIFICATE OF ANALYSIS.

CONCENTRATED LIQUID ORGANO-METALLIC SOLUTIONS (STABILIZED AND READY FOR USE)

Element	Product Code	Conc. Wt%	100 grams	50 grams	25 grams
ALUMINUM	LOMSAI 3.0	3.00	\$355.	\$235.	\$160.
ANTIMONY	LOMSSb 2.0	2.00	\$245.	\$165.	\$110.
BARIUM	LOMSBa 12.5	12.50	\$1,100.	\$715.	\$495.
CADMIUM	LOMSCd 10.0	10.00	\$1,045.	\$650.	\$465.
CALCIUM	LOMSCa 5.0	5.00	\$575.	\$380.	\$245.
CERIUM	LOMSCe 5.0	5.00	\$575.	\$380.	\$245.
CHROMIUM	LOMSCr 3.50	3.50	\$410.	\$270.	\$175.
COBALT	LOMSCo 7.5	7.50	\$825.	\$520.	\$380.
COPPER	LOMSCu 6.0	6.00	\$715.	\$465.	\$310.
IRON	LOMSFe 4.0	4.00	\$495.	\$325.	\$215.
LEAD	LOMSPb 20.0	20.00	\$1,925.	\$1,155.	\$825.
LITHIUM	LOMSLi 1.5	1.50	\$310.	\$215.	\$140.
MAGNESIUM	LOMSMg 3.0	3.00	\$385.	\$250.	\$165.
MANGANESE	LOMSMn 6.0	6.00	\$690.	\$455.	\$300.
MOLYBDENUM	LOMSMo 5.0	5.00	\$575.	\$380.	\$245.
NICKEL	LOMSNi 5.0	5.00	\$575.	\$380.	\$245.
PHOSPHORUS	LOMSP 5.0	5.00	\$575.	\$380.	\$245.
POTASSIUM	LOMSK 7.5	7.50	\$825.	\$520.	\$380.
PRASEODYMIUM	LOMSPr 3.0	3.00	\$410.	\$220.	\$160.
SELENIUM	LOMSSe 3.5	3.50	\$385.	\$245.	\$180.
SILICON	LOMSSi 7.5	7.50	\$825.	\$520.	\$380.
SODIUM	LOMSNa 2.5	2.50	\$385.	\$250.	\$165.
STRONTIUM	LOMSSr10.1	10.00	\$1,045.	\$650.	\$465.
THALLIUM	LOMSTI 5.0	5.00	\$575.	\$380.	\$245.
TIN	LOMSSn 7.5	7.50	\$825.	\$520.	\$380.
TITANIUM	LOMSTi 5.0	5.00	\$575.	\$380.	\$245.
VANADIUM	LOMSV4.0	4.00	\$495.	\$325.	\$215.
YTTRIUM	LOMSY 2.5	2.50	\$485.	\$295.	\$175.
ZINC	LOMSZn 6.0	6.00	\$690.	\$455.	\$300.
ZIRCONIUM	LOMSZr 5.0	5.00	\$575.	\$380.	\$245.

STABILIZED ORGANO-METALLIC SOLUTIONS

ORGM'S: DILUTE SINGLE-ELEMENT ORGANO-METALLIC OIL STANDARDS

These standards are sulfur free, unless otherwise noted, organo-metallic standards for X-ray fluorescence (XRF), plasma emissions (ICP or DCP), rotating disk (RDE), or atomic absorption (AA). They are also stabilized with Analytical Services, Inc. proprietary chelation and solution can be blended together to prepare multi-element standards.

ORGM'S DILUTE SINGLE-ELEMENT ORGANO-METALLIC OIL STANDARDS

Element	Product Code	Conc. Wt%	100 grams	50 grams
ALUMINUM	ORGM-AI0.1	0.1000	\$ 72.	\$ 45.
	ORGM-AI0.5	0.5000	\$ 90.	\$ 61.
ANTIMONY	ORGM-Sb0.1	0.1000	\$ 72.	\$ 45.
	ORGM-Sb0.5	0.5000	\$ 90.	\$ 61.
ARSENIC	ORGM-As0.1	0.1000	\$ 72.	\$ 45.
	ORGM-As0.5	0.5000	\$ 90.	\$ 61.
BARIUM	ORGM-Ba0.1	0.1000	\$ 72.	\$ 45.
	ORGM-Ba0.5	0.5000	\$ 90.	\$ 61.
BERYLLIUM	ORGM-Be0.1	0.1000	\$ 95.	\$ 61.
	ORGM-Be0.5	0.5000	\$160.	\$105.
CADMIUM	ORGM-Cd0.1	0.1000	\$ 72.	\$ 45.
	ORGM-Cd0.5	0.5000	\$ 90.	\$ 61.
CALCIUM	ORGM-Ca0.1	0.1000	\$ 72.	\$ 45.
	ORGM-Ca0.5	0.5000	\$ 90.	\$ 61.
CERIUM	ORGM-Ce0.1	0.1000	\$ 72.	\$ 45.
	ORGM-Ce0.5	0.5000	\$ 90.	\$ 61.
CHROMIUM	ORGM-Cr0.1	0.1000	\$ 72.	\$ 45.
	ORGM-Cr0.5	0.5000	\$ 90.	\$ 61.
COBALT	ORGM-Co0.1	0.1000	\$ 72.	\$ 45.
	ORGM-Co0.5	0.5000	\$ 90.	\$ 61.
COPPER	ORGM-Cu0.1	0.1000	\$ 72.	\$ 45.
	ORGM-Cu0.5	0.5000	\$ 90.	\$ 61.
GALLIUM	ORGM-Ga0.1	0.1000	\$105.	\$ 61.
	ORGM-Ga0.5	0.5000	\$191.	\$120.
GOLD	ORGM-Au0.1	0.1000	\$135.	\$ 95.
IRON	ORGM-Fe0.1	0.1000	\$ 72.	\$ 45.
	ORGM-Fe0.5	0.5000	\$ 90.	\$ 61.
LEAD	ORGM-Pb0.1	0.1000	\$ 72.	\$ 45.
	ORGM-Pb0.5	0.5000	\$ 90.	\$ 61.
LITHIUM	ORGM-Li0.1	0.1000	\$ 95.	\$ 61.
	ORGM-Li0.5	0.5000	\$160.	\$105.
MAGNESIUM	ORGM-Mg0.1	0.1000	\$ 72.	\$ 45.
	ORGM-Mg0.5	0.5000	\$ 90.	\$ 61.

STABILIZED ORGANO-METALLIC SOLUTIONS

ORGM'S DILUTE SINGLE-ELEMENT ORGANO-METALLIC OIL STANDARDS

Element	Product Code	Conc. Wt%	100 grams	50 grams
MANGANESE	ORGM-Mn0.1	0.1000	\$ 72.	\$ 45.
	ORGM-Mn0.5	0.5000	\$ 90.	\$ 61.
MERCURY	ORGM-Hg0.1	0.1000	\$ 80.	\$ 50.
	ORGM-Hg0.5	0.5000	\$150.	\$ 90.
MOLYBDENUM	ORGM-Mo0.1	0.1000	\$ 80.	\$ 50.
	ORGM-Mo0.5	0.5000	\$150.	\$ 90.
NICKEL	ORGM-Ni0.1	0.1000	\$ 72.	\$ 45.
	ORGM-Ni0.5	0.5000	\$ 90.	\$ 61.
PHOSPHOROUS	ORGM-P0.1	0.1000	\$ 72.	\$ 45.
	ORGM-P0.5	0.5000	\$ 90.	\$ 61.
POTASSIUM	ORGM-K0.1	0.1000	\$ 72.	\$ 45.
	ORGM-K0.5	0.5000	\$ 90.	\$ 61.
SELENIUM	ORGM-Se0.1	0.1000	\$ 72.	\$ 45.
	ORGM-Se0.5	0.5000	\$ 90.	\$ 61.
SILICON	ORGM-Si0.1	0.1000	\$ 95.	\$ 61.
	ORGM-Si0.5	0.5000	\$160.	\$105.
SILVER	ORGM-Ag0.1	0.1000	\$ 95.	\$ 61.
	ORGM-Ag0.5	0.5000	\$160.	\$105.
SODIUM	ORGM-Na0.1	0.1000	\$ 72.	\$ 45.
	ORGM-Na0.5	0.5000	\$ 90.	\$ 61.
STRONTIUM	ORGM-Sr0.1	0.1000	\$ 72.	\$ 45.
	ORGM-Sr0.5	0.5000	\$ 90.	\$ 61.
THALLIUM	ORGM-Tl0.1	0.1000	\$ 72.	\$ 45.
	ORGM-Tl0.5	0.5000	\$ 90.	\$ 61.
TIN	ORGM-Sn0.1	0.1000	\$ 72.	\$ 45.
	ORGM-Sn0.5	0.5000	\$ 90.	\$ 61.
TITANIUM	OGRM-Ti0.1	0.1000	\$ 72.	\$ 45.
	OGRM-Ti0.5	0.5000	\$ 90.	\$ 61.
VANADIUM	ORGM-V0.1	0.1000	\$ 72.	\$ 45.
	ORGM-V0.5	0.5000	\$ 90.	\$ 61.
YTTRIUM	ORGM-Y0.1	0.1000	\$100.	\$ 60.
	ORGM-Y0.5	0.5000	\$185.	\$110.
ZINC	ZINC-Zn0.1	0.1000	\$ 72.	\$ 45.
	ZINC-Zn0.5	0.5000	\$ 90.	\$ 61.
ZIRCONIUM	ORGM-Zr0.1	0.1000	\$ 72.	\$ 45.
	ORGM-Zr0.5	0.5000	\$ 90.	\$ 61.

Pricing subject to change without prior notice

STABILIZED ORGANO-METALLIC SOLUTIONS

INTERNAL STANDARDS

Product Code	Product	Method	Description	Prices
BIIS	Bismuth Internal Standards	ASTM D5059	Pb Analysis; Conc. 0.793g Bi/L, 1 per set	Individual (100 ml).....\$100. Individual (500 ml).....\$220. Individual (1L)\$385.
KIS	Potassium Ionization Suppressant	ASTM D4628	1% Potassium in Mineral Oil, 1 per set	Individual (100 ml).....\$100. Individual (500 ml).....\$235. Individual (1L)\$380.
MNIS	Manganese Internal Standard	ISO/CD 14596	Ni and V Analysis; Conc. 0.05%, 1 per set	Individual (100 ml) \$ 95. Individual (500 ml) \$220. Individual (1L) \$355.
ZRIS-1	Zirconium Internal Standard, Low Range	ISO/CD 14597	1% Low Range, Sulfur Analysis, 1 per set	Individual (100 ml).....\$ 95. Individual (500 ml).....\$200. Individual (1L)\$335.
ZRIS-16	Zirconium Internal Standard, High Range	ISO/CD 14597	16% High Range, Sulfur Analysis, 1 per set	Individual (100 ml).....\$210. Individual (500 ml).....\$330. Individual (1L)\$530.
ZRIS-18	Zirconium Internal Standard, High Range	ISO/CD 14597	18% High Range, Sulfur Analysis, 1 per set	Individual (100 ml).....\$240. Individual (500 ml).....\$375. Individual (1L)\$600.

CUSTOMIZATION OF CATALOG SETS AVAILABLE

SERIES OF MULTI-ELEMENT WEAR METALS STANDARDS FOR ICP, RDE AND OTHER TECHNIQUES

Sulfur-Free Multi-Element Wear Metals Standards

Sulfur-free multi-element wear metals in 20cst lubricating oil for analysis by XRF, AA, ICP or AE for applications for which sulfur interference is undesirable. These standards are prepared with Sulfur free ORGANO-METALLICS that do not contain metallic sulfonates.

• Suitable for ASTM D4628, D4927, D4951, D5056, D5185, D6443, D6481

Elements: Al, Cr, Cu, Fe, Mg, Na, Ni, Pb, Si, Sn, Ti

Table: WM-11 Standards

Product Code	Description	Individual (100 ml)	Individual (200 ml)
WM11-10	10 ppm	\$100.	\$154.
WM11-30	30 ppm	\$100.	\$154.
WM11-50	50 ppm	\$100.	\$154.
WM11-100	100 ppm	\$105.	\$162.
WM11-300	300 ppm	\$130.	\$200.
WM11-500	500 ppm	\$175.	\$270.
WM11-750	750 ppm	\$190.	\$260.
WM11-900	900 ppm	\$205.	\$315.

Elements: Ag, Al, Cr, Cu, Fe, Mg, Na, Ni, Pb, Si, Sn, Ti

Table: WM-12 Standards

Product Code	Description	Individual (100 ml)	Individual (200 ml)
WM12-10	10 ppm	\$105.	\$162.
WM12-30	30 ppm	\$105.	\$162.
WM12-50	50 ppm	\$105.	\$162.
WM12-100	100 ppm	\$115.	\$177.
WM12-300	300 ppm	\$135.	\$208.
WM12-500	500 ppm	\$180.	\$277.
WM12-750	750 ppm	\$220.	\$338.
WM12-900	900 ppm	\$270.	\$415.

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Sulfur-Free Multi-Element Wear Metals Standards

Elements: Al, B, Ba, Ca, Cd, Cr, Cu, Fe, Mg, Mn, Mo, Na, Ni, Pb, P, Si, Sn, Ti, V, Zn

Table: WM-20 Standards

Product Code	Description	Individual (100 ml)	Individual (200 ml)
WM20-10	10 ppm	\$115.	\$177.
WM20-30	30 ppm	\$115.	\$177.
WM20-50	50 ppm	\$115.	\$177.
WM20-100	100 ppm	\$115.	\$177.
WM20-300	300 ppm	\$160.	\$247.
WM20-500	500 ppm	\$230.	\$355.
WM20-750	750 ppm	\$290.	\$430.
WM20-900	900 ppm	\$355.	\$547.

Elements: Ag, Al, B, Ba, Ca, Cd, Cr, Cu, Fe, Mg, Mn, Mo, Na, Ni, P, Pb, Si, Sn, Ti, V, Zn

Table: WM-21 Standards

Product Code	Description	Individual (100 ml)	Individual (200 ml)
WM21-10	10 ppm	\$115.	\$177.
WM21-30	30 ppm	\$115.	\$177.
WM21-50	50 ppm	\$115.	\$177.
WM21-100	100 ppm	\$125.	\$192.
WM21-300	300 ppm	\$165.	\$254.
WM21-500	500 ppm	\$235.	\$362.
WM21-750	750 ppm	\$245.	\$371.
WM21-900	900 ppm	\$385.	\$592.

SULFONATED WEAR METAL STANDARDS

- *These standards are sulfonated.*
- *ASTM D4628, D4651, D5056, D5185*

Elements: Ag, Al, B, Ba, Ca, Cd, Cr, Cu, Fe, Mg, Mn, Mo, Na, Ni, P, Pb, Si, Sn, Ti, V, and Zn in Hydrocarbon Oil

Table: A-21 Standards

Product Code	Description	Individual (100 ml)	Individual (200 ml)
A21-10	10 ppm	\$100.	\$105.
A21-30	30 ppm	\$100.	\$105.
A21-50	50 ppm	\$105.	\$115.
A21-100	100 ppm	\$115.	\$130.
A21-300	300 ppm	\$175.	\$325.
A21-500	500 ppm	\$260.	\$465.
A21-900	900 ppm	\$400.	\$710.

SULFONATED WEAR METAL STANDARDS

Elements: Ag, Al, B, Ba, Ca, Cd, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, P, Pb, Si, Sn, Ti, V,
and Zn in Hydrocarbon Oil

Table: A-22 Standards

Product Code	Description	Individual (100 ml)	Individual (200 ml)
A22-10	10 ppm	\$120.	\$125.
A22-30	30 ppm	\$125.	\$125.
A22-50	50 ppm	\$125.	\$130.
A22-100	100 ppm	\$130.	\$155.
A22-300	300 ppm	\$205.	\$350.
A22-500	500 ppm	\$290.	\$510.
A22-900	900 ppm	\$440.	\$760.

Elements: Ag, Al, B, Ba, Ca, Cd, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, P, Pb, Si, Sb, Sn, Ti, V,
and Zn in Hydrocarbon Oil

Table: A-23 Standards

Product Code	Description	Individual (100 ml)	Individual (200 ml)
A23-10	10 ppm	\$135.	\$140.
A23-30	30 ppm	\$135.	\$140.
A23-50	50 ppm	\$140.	\$150.
A23-100	100 ppm	\$150.	\$170.
A23-300	300 ppm	\$215.	\$375.
A23-500	500 ppm	\$305.	\$530.
A23-900	900 ppm	\$465.	\$800.



REAGENTS

- *Dibenzothiophene, 17.13% Sulfur (Solid)*

Product Code	Individual (25 grams)	Individual (50 grams)	Individual (100 grams)
DB	\$165.	\$245.	\$385.

- *Di-N-Butyl Sulfide Certified Reagent, 21.9 wt%*

Product Code	Individual (100 ml)	Individual (200 ml)	Individual (500 ml)
DBS	\$350.	\$700.	\$1,400.

- *Benzothiophene (Thianaphthene), 23.4%*

Product Code	Individual (25 grams)	Individual (50 grams)	Individual (100 grams)
TNA	\$245.	\$385.	\$605.

STABILIZATION SOLUTIONS

- *For chelating and solubilizing organo-metallic solids and solutions for single element and multi-element standards*

Product Code	Product	Prices
STAB SOLN A	Stabilization Solution A	Individual (100 ml)\$120. Individual (50 ml)\$ 72.
STAB SOLN B	Stabilization Solution B	Individual (100 ml)\$120. Individual (50 ml)\$ 72.
STAB SOLN C	Stabilization Solution C	Individual (100 ml)\$120. Individual (50 ml)\$ 72.
STAB SOLN D	Stabilization Solution D	Individual (100 ml)\$120. Individual (50 ml)\$ 72.
STAB SOLN E	Stabilization Solution E	Individual (100 ml)\$120. Individual (50 ml)\$ 72.
STAB SOLN F	Stabilization Solution F	Individual (100 ml)\$120. Individual (50 ml)\$ 72.

MATRIX OILS

Product Code	Product	Description	Prices
GM	Gasoline Matrix	Gasoline with Low level of Sulfur	Individual (1/2 Gallon)\$380. Individual (1 Liter)\$205.
HVMO75	High Viscosity Mineral Oil	Hydrotreated 350N <1.0 ppm Sulfur 75cSt	Individual (1/2 Gallon)\$ 90. Individual (1 Liter).....\$55.
LVMO4.5	Low Viscosity Mineral Oil	White Mineral Oil 4.5cSt <1 ppm Sulfur	Individual (1/2 Gallon)\$ 90. Individual (1 Liter).....\$55.
MVMO25	Medium Viscosity Mineral Oil	Hydrotreated 100N <1 ppm Sulfur 25 cSt	Individual (1/2 Gallon)\$ 90. Individual (1 Liter).....\$55.
RFO	Residual Fuel Oil	Residual Fuel Oil diluted with 100N; Sulfur concentration about 0.25%	Individual (1/2 Gallon)\$380. Individual (1 Liter)\$205.
SDFM	Synthetic Diesel Fuel	Mixture of aromatic solvent and low viscosity mineral oil <1ppm Sulfur	Individual (1/2 Gallon)\$ 90. Individual (1 Liter).....\$55.
TLM	Certified Toluene Matrix	Toluene that has been certified for Nitrogen and Sulfur. The values will appear on the Certificate of Analysis	Individual (1/2 Gallon)\$380. Individual (1 Liter)\$205.
ISOM	Isooctane Matrix	Isooctane	Individual (1/2 Gallon)\$380. Individual (1 Liter)\$205.

POLYMER STANDARDS

NITROGEN IN SOLID POLYMER FOR QUALITY CONTROL

Finely divided synthetic polymer solid that contains a certified amount of nitrogen. Used for calibrating instruments for the analysis of nitrogen in all types of polymers and other solids that are completely combustible. Concentration Range: 0-3.0 wt% Nitrogen

Product Code	Individual (10 grams)	Individual (50 grams)
NP	\$105.	\$285.

NITROGEN AND SULFUR IN SOLID POLYMER FOR QUALITY CONTROL

Finely divided synthetic polymer solid that contains a certified amount of nitrogen and sulfur. Used for calibrating instruments for the analysis of nitrogen and sulfur in all types of polymers and other solids that are completely combustible. Concentration Range: 0-1.0 wt% Nitrogen and Sulfur

Product Code	Individual (10 grams)	Individual (50 grams)
NSP	\$160.	\$450.



POLYMER STANDARDS

RoHS/WEEE COMPLIANT STANDARDS FOR XRF

RoHS/WEEE compliant polymer standards for the analysis of materials in polyethylene (PE) or polyvinyl chloride (PVC).

CALIBRATION STANDARDS – Polyethylene (PE)

Polyethylene (PE) standards in disc or powder form.

One quality control sample is included with the 9 standard set only.

Product Code	Price Per Set
PL(PE)9-5E(D)	31mm disc\$1,760.
	40mm disc\$2,200.
PL(PE)9-5E(P)	25 grams\$1,760.
	50 grams.....\$2,750.

Standard Number	Br Wt%	Cd Wt%	Cr Wt%	Hg Wt%	Pb Wt%
1	0.0000	1.0000	0.0000	0.0000	0.0000
2	0.0025	0.0025	0.0050	0.0100	0.1000
3	0.0400	0.0100	0.0750	0.0075	0.0250
4	0.0100	0.0125	0.1250	0.0500	0.0050
5	0.0250	0.0075	0.1000	0.0250	0.1250
6	0.0500	0.0010	0.0650	0.0800	0.0750
7	0.0200	0.0005	0.0250	0.1000	0.0100
8	0.0300	0.0050	0.0500	0.0030	0.0500
9	0.0050	0.0150	0.0100	0.1200	0.0350

ADDITIONAL QC SAMPLES – Polyethylene (PE)

Product Code	Price Each
Additional QC Samples for PE Analysis PL(PE)9-5E(D)QC	31mm disc\$413.
	40mm disc.....\$798.
Additional QC Samples for PE Analysis PL(PE)9-5E(P)QC	25 grams\$413.
	50 grams\$798.
	100 grams\$1,200.

QC Sample	Br Wt%	Cd Wt%	Cr Wt%	Hg Wt%	Pb Wt%
1	0.0250	0.0050	0.0500	0.0500	0.0500

Pricing subject to change without prior notice

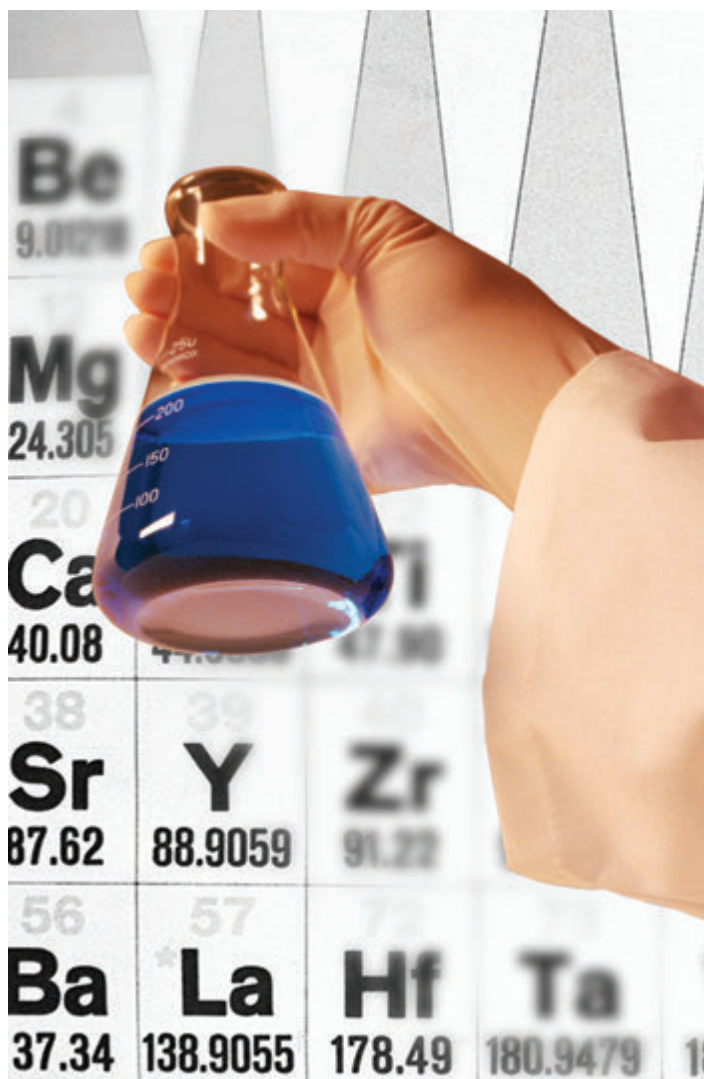
POLYMER STANDARDS

CHECK STANDARDS – Polyethylene (PE)

Polyethylene (PE) standards in disc or powder form.

Product Code	Price Per Set
PL(PE)3-5E(D)	31mm disc\$660.
	40mm disc.....\$825.
PL(PE)3-5E(P)	25 grams\$660.
	50 grams.....\$1,045.

Standard Number	Br Wt%	Cd Wt%	Cr Wt%	Hg Wt%	Pb Wt%
1	0.0000	1.0000	0.0000	0.0000	0.0000
2	0.0250	0.0050	0.0500	0.0500	0.0500
3	0.0500	0.1000	0.1000	0.1000	0.1000



POLYMER STANDARDS

CALIBRATION STANDARDS – Polyvinyl Chloride (PVC)

Polyvinyl Chloride (PVC) standards in disc or powder form. PVC's also include some Ca and Cl in each sample. One quality control sample is included with the 9 standard set only.

Product Code	Price Per Set
PL(PVC)9-5E(D)	31mm disc\$1,925.
	40mm disc\$2,410.
PL(PVC)9-5E(P)	25 grams\$1,925.
	50 grams.....\$2,915.

Standard Number	Br Wt%	Cd Wt%	Cr Wt%	Hg Wt%	Pb Wt%	Ca Wt%	Cl Wt%
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	40.00
2	0.0025	0.0025	0.0050	0.0100	0.1000	0.0500	35.00
3	0.0400	0.0100	0.0750	0.0075	0.2500	1.5000	15.00
4	0.0100	0.0125	0.1250	0.0500	0.0050	0.2500	40.00
5	0.0250	0.0075	0.1000	0.0250	0.1250	0.0000	35.00
6	0.0500	0.0010	0.0650	0.0800	0.0750	3.0000	10.00
7	0.0200	0.0005	0.0250	0.1000	0.0100	2.0000	40.00
8	0.0300	0.0050	0.0500	0.0030	0.0500	0.0000	12.50
9	0.0050	0.0150	0.0100	0.1200	0.0350	0.0000	35.00

ADDITIONAL QC SAMPLES – Polyvinyl Chloride (PVC)

Product Code	Price Each
Additional QC Samples for PVC Analysis PL(PVC)9-5E(D)QC	31mm disc\$455.
	40mm disc..... \$570.
Additional QC Samples for PVC Analysis PL(PVC)9-5E(P)QC	25 grams\$455.
	50 grams\$570.
	100 grams.....\$875.

QC Sample	Br Wt%	Cd Wt%	Cr Wt%	Hg Wt%	Pb Wt%
1	0.0250	0.0050	0.0500	0.0500	0.0500

POLYMER STANDARDS

CHECK STANDARDS – Polyethylene (PVC)

Polyvinyl chloride (PVC) standards in disc or powder form.

Product Code	Price Per Set
PL(PVC)3-5E(D)	31mm disc.....\$725.
	40mm disc.....\$910.
PL(PVC)3-5E(P)	25 grams\$725.
	50 grams\$910.

Standard Number	Br Wt%	Cd Wt%	Cr Wt%	Hg Wt%	Pb Wt%
1	0.0000	1.0000	0.0000	0.0000	0.0000
2	0.0250	0.0050	0.0500	0.0500	0.0500
3	0.0500	0.1000	0.1000	0.1000	0.1000

ADDITIVE PACKAGE - PE DISC ONLY

PE Additive Package includes 5 Standards with 10 elements each.

The elements included are: Al, Ca, F, Mg, Na, P, S, Si, Ti and Zn.

Product Code	Price Per Set
PL(PE)5-10E(D)	31mm disc\$3,500.
	40mm disc\$4,375.

Standard Number	Al Wt%	Ca Wt%	F Wt%	Mg Wt%	Na Wt%	P Wt%	S Wt%	Si Wt%	Ti Wt%	Zn Wt%
1	0	0	0	0	0	0	0	0	0	0
2	25	100	250	25	50	100	50	750	20	10
3	200	50	5	250	10	25	25	25	105	200
4	400	20	150	550	100	5	5	125	5	50
5	75	200	25	100	200	50	200	300	50	100

For additives and trace elements in polyolefins. Includes all elements in PL(PE)5-10E(D) plus Cr (11 elements). Concentrations based on Table 1 of ASTM Method D6247.

Product Code	Price Per Set
PL(PE)D6247	31mm disc\$3,850.
	40mm disc\$4,800.

Pricing subject to change without prior notice

MONITOR SAMPLES FOR XRF - SILICATE GLASSES SINGLE ELEMENTS

Optically polished on the analytical surface; size 30 - 40 mm in diameter and 5 mm in height.

Product Code	Product	Description	Prices
GL-CL	Chlorine	Chlorine Conc. 0.6 wt%	Individual (40mm)\$300. Individual (other sizes)\$325.
GL-S(HL)	Sulfur (HL)	High level Sulfur: approx. 0.70 wt%	Individual (40mm)\$300. Individual (other sizes)\$325.
GL-S(LL)	Sulfur (LL)	Low level Sulfur: approx. 0.005 wt%	Individual (40mm)\$300. Individual (other sizes)\$325.
GL-S(ML)	Sulfur (ML)	Mid level Sulfur: approx. 0.050 wt%	Individual (40mm)\$300. Individual (other sizes)\$325.

MONITOR SAMPLES FOR XRF - SILICATE GLASSES MULTI ELEMENTS

Optically polished on the analytical surface; size 30 - 40 mm in diameter and 5mm in height.

Product Code	Price Per Set
GL-LOE1	Individual 40mm\$300. Individual Other Sizes\$325.
GL-LOE2	Individual 40mm\$300. Individual Other Sizes\$325.
GL-LOE3	Individual 40mm\$300. Individual Other Sizes\$325.

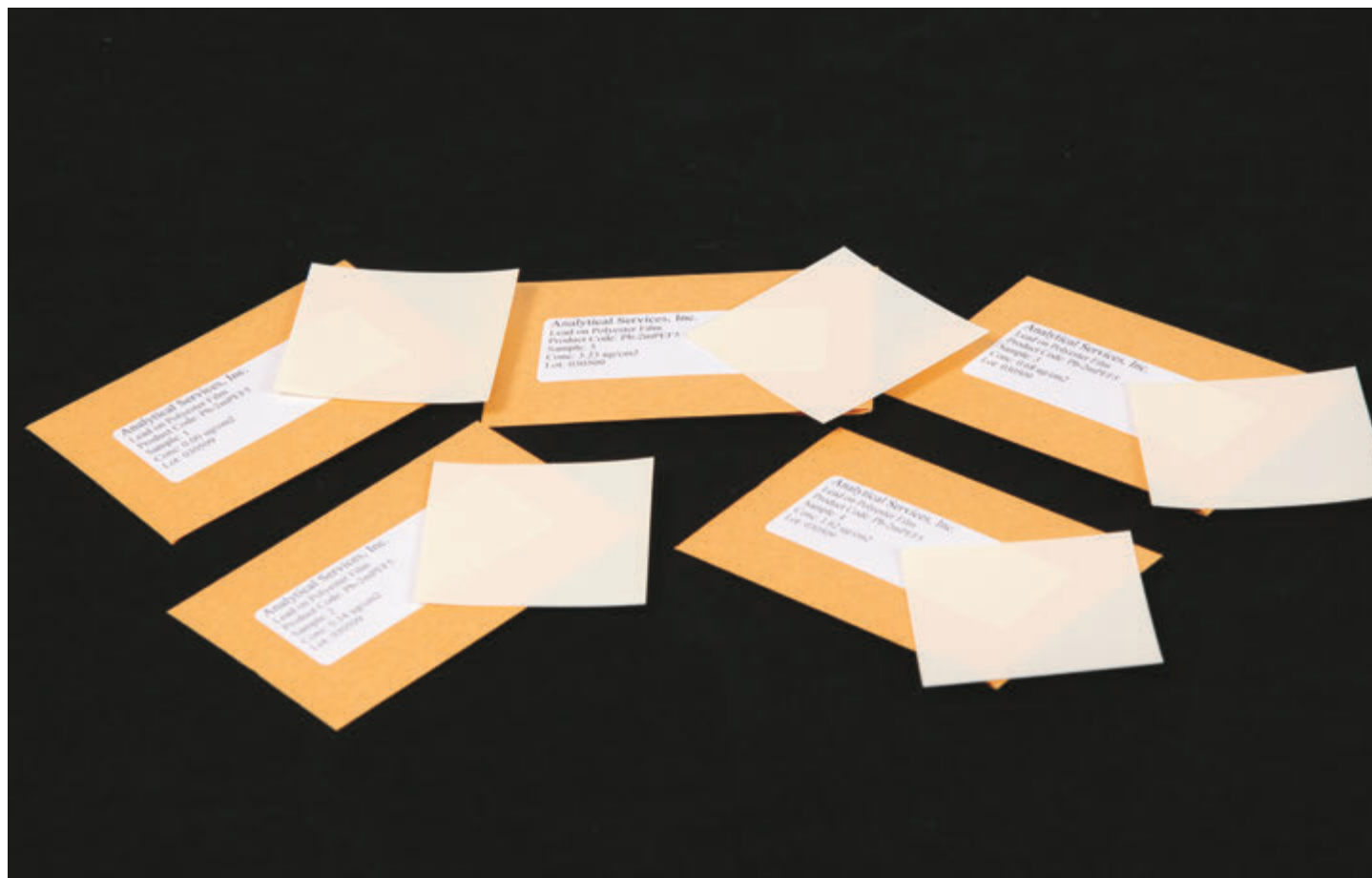
Element	GL-LOE1	GL-LOE2	GL-LOE3
Ba	0.0040	0.1850	0.5600
Ca	0.0100	0.5000	0.5000
Cl	0.0050	0.1500	0.4500
Cu	0.0050	0.1500	0.4500
Mg	0.0010	0.1500	0.4500
Mo	0.0200	0.1500	0.4500
P	0.0000	0.1500	0.4600
S	0.2000	0.7500	0.7500
Zn	0.0200	0.1500	0.4600

LEAD STANDARDS IN PAINT COATINGS ON POLYESTER FILM

- 2mil thickness polyester squares
- 1.6mil (40 microns) paint coating thickness
- Developed for ASTM WK 21957 "Standard Test Method for Identification and Quantitative of Lead in Paint and Similar Coating Materials Using EDXRF" and "New Test Method for Detection and Quantification of Lead in Paint Layers and Similar Coatings or in Substrates by EDXRF using Multiple Monochromatic Excitation Beams"

LEAD IN PAINT

Product Code	Product	Description	Prices
Pb-2mPEF7	Lead (Pb) in Alkyd paint coating on Polyester Film	7 standards cut as squares per set. Conc: 0.00, 0.375, 0.75, 2.00, 5.50, 12.00ug/cm ² QC Standard Conc: 0.80 ug/cm	Price per set\$950. Individual\$225.
Pb-2mPEFQC	Lead (Pb) in Alkyd paint coating on Polyester Film	QC Standard only - one standard Conc. 0.80ug/cm ²	Price per each\$225.



TITRATION STANDARDS

HYDROGEN SULFIDE AND MERCAPTAN STANDARDS

• Ampoules for titration analysis 20 ppm H₂S and 40 ppm Mercaptan

Product Code		Price Per Set
H2SRSH-20	(20 ml)	Individual (each).....\$ 75.
		Set (5 ampoules).....\$225.
H2SRSH-2	(2 ml)	Individual (each).....\$ 28.
		Set (5 ampoules).....\$105.

BROMINE INDEX FOR ASTM D2710

Product Code	Product	Description	Prices
BR13	Bromine Index	Bromine Index in Toluene: 3 per set, 200 ml each	Price per set\$200. Individual (200 ml).....\$ 72.

Standard No.	Bromine Index
1	10
2	100
3	1000

BROMINE NUMBER FOR ASTM D1159

Product Code	Product	Description	Prices
BRNo2	Bromine Number	Bromine Number in Toluene: 2 per set, 200 ml each	Price per set\$185. Individual (200 ml)\$105.

Standard No.	Bromine Number
1	2
2	10

TOTAL ACID NUMBER FOR ASTM D664

Product Code	Product	Description	Prices
TAN2	Total Acid Number	Total Acid Number in Mineral Oil, 2 per set 500 ml each	Price per set\$ 72. Individual (500 ml).....\$ 40.

Standard No.	Acid Number
1	2
2	5

TITRATION STANDARDS

BASE NUMBER FOR ASTM D2896 AND D5984

Total base number standards

Product Code	Product	Description	Prices								
BN03	Total Base Number standards	Total Base Number in Mineral Oil, 3 per set, 500 ml each	Price per set\$191. Individual (500 ml).....\$ 72.								
		<table border="1"> <thead> <tr> <th>Standard No.</th> <th>Base Number</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2</td> </tr> <tr> <td>2</td> <td>5</td> </tr> <tr> <td>3</td> <td>10</td> </tr> </tbody> </table>	Standard No.	Base Number	1	2	2	5	3	10	
Standard No.	Base Number										
1	2										
2	5										
3	10										

NITROGEN BASES IN HYDROCARBONS

Product Code	Product	Description	Prices
N-UOP269	Organic Nitrogen in Petroleum Distillates	Organic Nitrogen in Petroleum Distillates, Conc: .01, .05, 0.10, 1.0 wt% 4 per set, 200 ml each	Price per set\$285. Individual (200 ml).....\$ 72.



Titration Standards: Custom orders available.

NITROGEN AND SULFUR AMPOULES

- For use in analysis by Chemiluminescence, UV Fluorescence and Oxidative Microcoulometry
- Suitable for ASTM Methods D3120, D3246, D4629, D5453, and D5762

NITROGEN AND SULFUR IN PETROLEUM PRODUCTS

Product Code	Product	Method	Description	Prices
A-NS(L)	Nitrogen and Sulfur in petroleum products. Sulfur by ultraviolet fluorescence and Nitrogen by chemiluminescence.	ASTM S-D5453 N-D5762	Dibenzothiophene (S) and Pyridine(N) in Isooctane packaged in 2 ml amber pre-scored ampoules. Concentrations are Blk, 0.25, 0.5, 1.0, 2.5, 5.0 ng/ul	Price Per Set.....\$135.
A-NS(M)	Nitrogen and Sulfur in petroleum products. Sulfur by ultraviolet fluorescence and Nitrogen by chemiluminescence.	ASTM S-D5453 N-D5762	Dibenzothiophene (S) and Pyridine(N) in Isooctane packaged in 2 ml amber pre-scored ampoules. Concentrations are Blk, 5.0, 25, 50, 100 ng/ul	Price Per Set.....\$113.
A-NS(H)	Nitrogen and Sulfur in petroleum products. Sulfur by ultraviolet fluorescence and Nitrogen by chemiluminescence.	ASTM S-D5453 N-D5762	Dibenzothiophene (S) and Pyridine(N) in Isooctane packaged in 2 ml amber pre-scored ampoules. Concentrations are Blk, 100, 500, 1000 ng/ul	Price Per Set.....\$108.

NITROGEN IN PETROLEUM PRODUCTS

Product Code	Product	Method	Description	Prices
A4629(1)	Nitrogen in petroleum products by syringe-inlet chemiluminescence.	ASTM D4629	Pyridine in Isooctane packaged in 2 ml amber pre-scored ampoules. Concentrations are Blk, 0.25, 0.5, 1.0, 2.5, 5.0 mg/kg	Price Per Set\$ 90.
A4629(2)	Nitrogen in petroleum products by syringe-inlet chemiluminescence.	ASTM D4629	Pyridine in Isooctane packaged in 2 ml amber pre-scored ampoules. Concentrations are Blk, 0.25, 0.5, 1.0, 2.5, 5.0 mg/kg	Price Per Set\$ 75.
A5762	Nitrogen in petroleum products by boat-inlet chemiluminescence.	ASTM D5762	Acridine in Xylene packages in 2 ml amber pre-scored ampoules. Concentrations are Blk, 100, 500, 1000 mg/kg	Price Per Set\$ 60.

NITROGEN AND SULFUR AMPOULES

SULFUR AMPOULES IN PETROLEUM PRODUCTS

Product Code	Product	Method	Description	Prices
A3120-6	Sulfur in petroleum hydrocarbons by oxidative microcoulometry.	ASTM D3120	Di-n-butyl sulfide in Isooctane matrix packaged in 2 ml amber pre-scored ampoules. Concentrations are Blk, 1,10, 25, 50, 100 mg/kg	Price Per Set.....\$ 90.
A3961-6	Sulfur in petroleum hydrocarbons by oxidative microcoulometry.	ASTM D3961	Di-n-butyl sulfide in Toluene or Isooctane matrix packaged in 2 ml amber pre-scored ampoules. Concentrations are Blk, 1,10, 25, 50, 100 mg/kg	Price Per Set.....\$ 90.
A5453(L)	Sulfur in liquid petroleum hydrocarbons by ultraviolet fluorescence.	ASTM D5453	Di-n-butyl sulfide in Toluene or Isooctane matrix packaged in 2 ml amber pre-scored ampoules. Concentrations are Blk, 1, 2.5, 5, 7.5, 10 ng/uL. Please specify matrix	Price Per Set.....\$ 90.
A5453(M)	Sulfur in liquid petroleum hydrocarbons by ultraviolet fluorescence.	ASTM D5453	Di-n-butyl sulfide in Toluene or Isooctane matrix packaged in 2 ml amber pre-scored ampoules. Concentrations are Blk, 5, 25, 50, 100, 200 ng/uL. Please specify matrix	Price Per Set.....\$ 90.
A5453(H)	Sulfur in liquid petroleum hydrocarbons by ultraviolet fluorescence.	ASTM D5453	Di-n-butyl sulfide in Toluene or Isooctane matrix packaged in 2 ml amber pre-scored ampoules. Concentrations are Blk,100, 250, 500, 750, 1000 ng/uL. Please specify matrix	Price Per Set.....\$ 90.
A5453(T)	Sulfur in liquid petroleum hydrocarbons by ultraviolet fluorescence.	ASTM D5453	Di-n-butyl sulfide in Toluene or Isooctane matrix packaged in 2 ml amber pre-scored ampoules. Concentrations are from the M, L and H ranges. Please specify matrix	Price Per Set.....\$225.
A5453CK	Sulfur in liquid petroleum hydrocarbons by ultraviolet fluorescence.	ASTM D5453	Di-n-butyl sulfide in Toluene or Isooctane matrix packaged in 2 ml amber pre-scored ampoules. Daily calibration check sample. Specify concentration and matrix - 10 ampoules in set. Please specify matrix	Price Per Set.....\$150.

CUSTOMIZATION OF CATALOG SETS AVAILABLE

PHYSICAL TESTING STANDARDS

ASTM D97 Pour Point Standards

Pour Points are determined by consensus analysis and are packaged in 250 ml bottles.

Product Code	Approx. Pour Point	Individual
PP5	-5 °C	\$147.
PP10	-10 °C	\$147.
PP15	-15 °C	\$147.
PP20	-20 °C	\$147.
PP40	-40 °C	\$147.
PP50	-50 °C	\$147.

ASTM D2386 Freezing Point Standards

Freezing Points are verified by consensus analysis and are packaged in 250 ml amber bottles

Product Code	Nominal Freeze Point	Individual
FPZ45	-45 °C	\$144.
FPZ50	-50 °C	\$144.

ASTM D2500 Cloud Point Standards

Cloud Points are determined by consensus analysis and are packaged in 250 ml bottles.

Product Code	Approx. Cloud Point	Individual
CP2	-2 °C	\$144.
CP5	+5 °C	\$144.
CP10	-10 °C	\$144.
CP15	-15 °C	\$144.
CP20	-20 °C	\$144.

PHYSICAL TESTING STANDARDS

ASTM D445 Viscosity Standards

Oils are tested in accordance with ASTM D445 and are packaged in 500 ml amber glass bottles.

Product Code	Viscosity @ 40°C	Individual
VIS4	4 cSt	\$ 78.
VIS10	9.5 cSt	\$ 68.
VIS30	30 cSt	\$ 68.
VIS60	54 cSt	\$ 68.
VIS100	102 cSt	\$ 68.
VIS110	110 cSt	\$ 68.
VIS130	130 cSt	\$ 68.
VIS300	300 cSt	\$ 68.
VIS520	520 cSt	\$ 68.
VIS920	920 cSt	\$ 68.

ASTM D4582/D5191 Vapor Pressure Standards

Analytical Services, Inc. offers a range of vapor pressure quality control samples for ASTM D5482 and D5191 (mini-methods), consisting of pure solvents of known vapor pressure. The samples are packaged in 10ml flame sealed ampoules.

Product Code	Vapor Pressure	Individual (set of 10)
VP1	68.3 kPa (9.91 p.s.i)	\$ 83.
VP2	68.0 kPa (9.86 p.s.i)	\$100.
VP3	51.1 kPa (7.41 p.s.i)	\$ 95.
VP4	46.7 kPa (6.77 p.s.i)	\$155.
VP5	22.5 kPa (3.26 p.s.i)	\$ 72.
VP6	7.1 kPa (1.03 p.s.i)	\$ 72.

ASTM D56 Tag Closed Cup Flash Point

Standards are verified by consensus analysis and packaged in 150ml amber glass bottles.

Product Code	Nominal Flash Point	Individual
TCC68	67 °C	\$205.

Pricing subject to change without prior notice

PHYSICAL TESTING STANDARDS

ASTM D86 Group 4 Distillation Standard

The group 4 standard is diesel oil characterized with distillation, range is from 410 to 670°F, (210 to 355°C) and is verified by consensus analysis.

Product Code	Description	Individual
D86-4-1	Distillation Standard 0.25L	\$185.
D86-4-2	Distillation Standard 0.50L	\$340.

ASTM D86 Synthetic Distillation Standard

The automatic distillation apparatus duplicates the distillation conditions of the manual method. The increased reliance on electronic control requires an independent standard to verify that the apparatus is performing correctly. Analytical Services, Inc. has introduced a synthetic blend of hydrocarbons that boil in the temperature range specified in ASTM D86 distillation groups 1 and 2. The group 1 and 2 standard covers the boiling range 129 to 368°F, (54 to 187°C) and was verified by consensus analysis with twelve refinery laboratories.

Product Code	Description	Individual
D86-1	Synthetic Distillation Std. 0.5L	\$191.
D86-2	Synthetic Distillation Std. 2 x 0.5L	\$340.
D86-3	Synthetic Distillation Std. 4 x 0.5L	\$1,100.

ASTM D92 Cleveland Open Cup Flash Point

Standards are verified by consensus analysis and are packaged in 250 ml amber glass bottles.

Product Code	Flash Point	Individual
FP200	200 °C	\$144.
FP230	230 °C	\$144.

ASTM D93 Pensky Martin Flash Point

Standards are verified by consensus analysis and are packaged in 250 ml amber glass bottles.

Product Code	Flash Point	Individual
FP60	60 °C	\$144.
FP93	93 °C	\$144.

PHYSICAL TESTING STANDARDS

Certified Flash Point Standards

These reference materials are stable, pure hydrocarbon with a method specific flash point determined by an inter-laboratory study. Standards are packaged in 250 ml bottles.

Product Code	Method	Flash Point	Individual
FP65	ASTM D93	65 °C	\$155.
FP67UD	ASTM D56	67 °C	\$221.
FP75	–	75 °C	\$150.
FP93	ASTM D93	93 °C	\$144.
FP134 Hex	ASTM D93	134 °C	\$170.



BIODIESEL TESTING STANDARDS

- Suitable for ASTM D6751

SULFUR IN BIODIESEL

Product Code	Product	Method	Description	Prices
S(BIO)6L	Sulfur in Biodiesel	ASTM D5453	Low Range: 6 Standards per set, 100 ml each - Conc 0, 5, 10, 15, 20 and 25 ppm	Price Per Set\$385.
S(BIO)6H	Sulfur in Biodiesel	ASTM D5453	High Range: 6 Standards per set, 100 ml each - Conc 0, 200, 400, 600, 800 and 1000 ppm	Price Per Set\$395.

FREE AND TOTAL GLYCERIN

Product Code	Product	Method	Description	Prices
D6584-MIX	Combined Standards	ASTM D6584 EN14105	Kit contains: 4 Standards containing the 4 glycerin components in pyridine-5 ml ampoule each - 1 standard of butanetriol internal standard at 1000 ng/uL in pyridine - 5 ml ampoule - 1 standard of tricaprins internal standard at 800 mg/uL in pyridine 5 ml ampoule - 1 vial of MSTFA silyating reagent - 5 ml vial with cap -1 250ml bottle of heptane	Price Per Set\$600.
D6584-SS	Individual Standards	ASTM D6584 EN14105	Kit contains: 1 Standard of glycerin in pyridine at 500 ng/uL, 1 Standard of monoolein in pyridine at 5000 ng/uL, 1 standard of dialen in pyridine at 500 ng/uL, 1 standard of 1, 2, 3 -Tri{cisooctadecanoyl} in pyridine at 5000 ng/uL, 1 standard of butanetriol internal standard at 1000 ng/uL in pyridine, 1 standard of tricaprins internal standard at 8000 ng/uL in pyridine, 1 vial of MSTFA all in 5 ml ampoules or vial -1 250ml bottle of heptane	Price Per Set\$550.
D6584-50kit	Individual Standards	ASTM D6584 EN14105	Enough for 50 GC runs, Internal Standard #1 and 2 and MSTFA all in 5 ml ampoules	Price Per Set\$375.
D6584-100kit	Individual Standards	ASTM D6584 EN14105	Enough for 100 GC runs, Internal Standard #1 and 2 and MSTFA all in 10 ml ampoules	Price Per Set\$400.

BIODIESEL TESTING STANDARDS

FREE AND TOTAL GLYCERIN

Product Code	Product	Method	Description	Prices
D6584-250kit	Individual Standards	ASTM D6584 EN14105	Enough for 250 GC runs, Internal Standard #1 and 2 and MSTFA all in 25 ml ampoules	Price Per Set\$425.
D6584-500kit	Individual Standards	ASTM D6584 EN14105	Enough for 250 GC runs, Internal Standard #1 and 2 and MSTFA all in 50 ml ampoules	Price Per Set\$450.

SODIUM AND POTASSIUM UOP 391 or DIN EN14538

Product Code	Product	Method	Description	Prices
UOP391	Calibration Standards	UOP391 EN14538	Na and K at 100 ppm each in 100 ml amber bottle	Price Per Set\$140.
UOP389	Calibration Standards	UOP391 EN14538	Ca and Mg at 100 ppm each in 100 ml amber bottle	Price Per Set\$140.
EN14538	Calibration Standards	UOP391 EN14538	Multi Elements Standard containing Ca, Mg, K and Na at 500 ppm, each in 100 ml amber bottle	Price Per Set\$195.
EN14538-2C	Calibration Standards	UOP391 EN14538	Multi Elements Standard containing Ca, Mg, K, P and Na at 20 ppm and 100 ppm, 2 standards per set: each in 100 ml amber bottle	Price Per Set\$270.

SIMULATED DISTILLATION

Product Code	Product	Method	Description	Prices
D2887	Diesel Reference Fuel	ASTM D2887	6 x 2 ml ampoules per set	Price Per Set\$105.

CUSTOMIZATION OF CATALOG SETS AVAILABLE

BIODIESEL TESTING STANDARDS

METHANOL IN FAME

Product Code	Product	Method	Description	Prices
EN14110	Methanol in FAME	DIN EN14110	3 standards per set and 20 ml ampoule of 2-propanol	Price Per Set\$125.

FATTY ACID METHYL ESTERS (FAME) ANALYSIS

Product Code	Product	Method	Description	Prices
EN14103	Fatty Acid Methyl Esters (FAME) analysis	DIN EN14103	3 x 2 ml ampoules	Price Per Set\$205.
EN14103-IS	Fatty Acid Methyl Esters (FAME) analysis	DIN EN14103	Methyl Nonadecanoate in Toluene, 10 mg/mL, 1 per set, 100 ml each	Price Per Set\$150.

IODINE VALUE

Product Code	Product	Method	Description	Prices
EN14214	Iodine Value	DIN EN14214	Iodine Number 50 and 200, 2 per set, 500 ml each	Price Per Set\$190.

HEXANE RESIDUE IN FATS AND OIL

Product Code	Product	Method	Description	Prices
HexMe05	Hexane Residue in Fats and Oil	ACOS Method CA 36-87	Hexane in Methylolate: Conc. Blk, 10, 100, 500 and 1,500 mg/kg, 5 per set, 20 ml ampoules - 20 ml ampoule of Heptane (Internal Standard)	Price Per Set\$275.

CHEMPLEX® THIN-FILM SAMPLE SUPPORTS

• Continuous Rolls: 3" x 300' long (7.6cm x 91.4m)

Product Code	Description	Gauge	1-11	12+
90	Ultra-Polyester	1.5u (0.06mil)	\$135.	\$130.
95	Etnom®	1.5u (0.06mil)	\$165.	\$160.
100	Mylar	2.5u (0.10mil)	\$ 70.	\$ 65.
150	Mylar	3.6u (0.14mil)	\$ 65.	\$ 60.
250	Mylar	6.0u (0.24mil)	\$ 55.	\$ 50.
416	Prolene®	4.0u (0.16mil)	\$110.	\$105.
425	Polypropylene	6.0u (0.24mil)	\$ 80.	\$ 75.
475	Polypropylene	12.0u (0.50mil)	\$ 70.	\$ 65.

*Supplied in 50' (15.2m) lengths

• Precut Circles: 500pcs/pkg: 2.5" Dia. (6.4cm)

Product Code	Description	Gauge	1-11	12+
106	Mylar	2.5u (0.10mil)	\$ 70.	\$ 65.
156	Mylar	3.6u (0.14mil)	\$ 65.	\$ 60.
256	Mylar	6.0u (0.24mil)	\$ 58.	\$ 53.
426	Prolene®	4.0u (0.16mil)	\$150.	\$145.
436	Polypropylene	6.0u (0.24mil)	\$130.	\$125.
476	Polypropylene	12.0u (0.50mil)	\$115.	\$110.

• Precut Circles: 1,000pcs/pkg: 2.5" Dia. (6.4cm)

Product Code	Description	Gauge	1-11	12+
107	Mylar	2.5u (0.10mil)	\$110.	\$105.
157	Mylar	3.6u (0.14mil)	\$100.	\$950.
257	Mylar	6.0u (0.24mil)	\$ 90.	\$ 85.
427	Prolene®	4.0u (0.16mil)	\$270.	\$165.
437	Polypropylene	6.0u (0.24mil)	\$250.	\$245.
477	Polypropylene	12.0u (0.50mil)	\$180.	\$175.

CHEMPLEX® – SPECTROMEMBRANE®

• Thin-Film Supports

Product Code	Description	Gauge	Dia. In.	Price/Pkg.
3011	Mylar	2.5u (0.10mil)	2.5	\$ 37.
3012	Mylar	2.5u (0.10mil)	3.0	\$ 37.
3013	Mylar	3.6u (0.14mil)	2.5	\$ 36.
3014	Mylar	3.6u (0.14mil)	3.0	\$ 36.
3015	Mylar	6.0u (0.24mil)	2.5	\$ 35.
3016	Mylar	6.0u (0.24mil)	3.0	\$ 35.
3017	Prolene®	4.0u (0.16mil)	2.5	\$ 46.
3017A	Prolene®	3.0u (0.12mil)	2.5	\$ 55.
3018	Prolene®	4.0u (0.16mil)	3.0	\$ 46.
3018A	Polene®	3.0u (0.12mil)	3.0	\$ 55.
3019	Polypropylene	6.0u (0.24mil)	2.5	\$ 46.
3020	Polypropylene	6.0u (0.24mil)	3.0	\$ 46.
3023	Polypropylene	12.0u (0.50mil)	2.5	\$ 38.
3024	Polypropylene	12.0u (0.50mil)	3.0	\$ 38.
3025	Etnom®	3.0u (0.12mil)	2.5	\$ 51.
3026	Etnom®	3.0u (0.12mil)	3.0	\$ 51.
3029	Etnom®	2.5u (0.10mil)	2.5	\$ 57.
3030	Etnom®	2.5u (0.10mil)	3.0	\$ 57.
3031	Etnom®	2.0u (0.08mil)	2.5	\$ 65.
3032	Etnom®	2.0u (0.08mil)	3.0	\$ 65.

CHEMPLEX® – MICROPOROUS FILM

• Polypropylene 25u (0.001mil)

Product Code	Description	Price/Pkg.
325	Continuous Roll: 3" x 200" (7.6cm x 508cm)	\$ 60./Roll
325C	Pre-Cut Circles: 2.5" Diameter; 100/pkg	\$ 65./Pkg

Pricing subject to change without prior notice

CHEMPLEX® – PELLET CUPS®

• Compressible Straight-Walled Aluminum

Product Code	Description	Pcs/Pkg	1-11	12-23	24+
500	30.3mm	1000	\$145.	\$140.	\$135.
530	33.8mm	600	\$150.	\$145.	\$140.
540	38.9mm	600	\$155.	\$150.	\$145.

• Compressible Tapered Aluminum

Product Code	Description	Pcs/Pkg	1-11	12-23	24+
505	31.0mm	1000	\$145.	\$140.	\$135.
535	34.6mm	600	\$150.	\$145.	\$140.
545	39.8mm	600	\$155.	\$150.	\$145.
547	44.9mm	500	\$160.	\$155.	\$150.

• Compressible Tapered Plastic; PlastiCups

Product Code	Description	Pcs/Pkg	1-11	12-23	24+
552	31.0mm	500	\$110.	\$105.	\$100.
555	34.3mm	500	\$175.	\$170.	\$165.
554	39.7mm	500	\$180.	\$175.	\$170.

• XRF Sample Cup Caps- Vented, polyethylene plastic

Product Code	Size (mm)	1-5	6-10	11+
1630	32 (Nominal)	\$ 55.	\$ 50.	\$ 45.
1640	40 (Nominal)	\$ 60.	\$ 55.	\$ 50.

**CUSTOMIZATION OF
CATALOG SETS AVAILABLE**

CHEMPLEX® – SAMPLE CUPS

• XRF Sample Cups: Polyethylene plastic: 100 sets/pkg

Product Code	Dia. (mm)	1-19	20-39	40+
1060	31.2	\$ 60.	\$ 55.	\$ 50.
1065	31.2	\$ 60.	\$ 55.	\$ 50.
1067	42.1	\$ 60.	\$ 55.	\$ 50.
1068	42.1	\$ 60.	\$ 55.	\$ 50.
1070	39.0	\$ 70.	\$ 65.	\$ 60.
1075	38.2	\$ 70.	\$ 65.	\$ 60.
1083	42.7	\$ 70.	\$ 65.	\$ 60.
1085	73.0	\$ 70.	\$ 65.	\$ 60.
1095	43.4	\$ 75.	\$ 70.	\$ 65.
1330	30.7	\$ 60.	\$ 55.	\$ 50.
1330-SE	30.7	\$ 60.	\$ 55.	\$ 50.
1340	39.0	\$ 70.	\$ 65.	\$ 60.
1430	30.7	\$ 60.	\$ 55.	\$ 50.
1430-SE	30.7	\$ 60.	\$ 55.	\$ 50.
1440	39.3	\$ 70.	\$ 65.	\$ 60.
1440L	39.3	\$ 75.	\$ 70.	\$ 65.
1530	30.9	\$ 60.	\$ 55.	\$ 50.
1530-SE	30.9	\$ 60.	\$ 55.	\$ 50.
1540	39.3	\$ 70.	\$ 65.	\$ 60.
1730	30.4	\$ 60.	\$ 55.	\$ 50.
1730-SE	30.4	\$ 60.	\$ 55.	\$ 50.
1740	39.0	\$ 70.	\$ 65.	\$ 60.
1830	30.9	\$ 60.	\$ 55.	\$ 50.
1830-SE	30.9	\$ 60.	\$ 55.	\$ 50.
1840	39.2	\$ 70.	\$ 65.	\$ 60.
1850	42.9	\$ 70.	\$ 65.	\$ 60.
1930	31.0	\$ 60.	\$ 55.	\$ 50.
1930-SE	31.0	\$ 60.	\$ 55.	\$ 50.
1935-OX	31.2	\$ 75.	\$ 70.	\$ 65.
1940	39.1	\$ 70.	\$ 65.	\$ 60.
1940L*	39.1	\$ 75.	\$ 70.	\$ 65.
2131	31.2	\$ 60.	\$ 55.	\$ 50.
2132	31.5	\$ 60.	\$ 55.	\$ 50.

CHEMPLEX® – SAMPLE CUPS

Product Code	Dia. (mm)	1-19	20-39	40+
2135	34.3	\$ 65.	\$ 60.	\$ 55.
2140	40.1	\$ 65.	\$ 60.	\$ 55.
2143	40.1	\$ 65.	\$ 60.	\$ 55.
2144	40.1	\$ 65.	\$ 60.	\$ 55.
2145	44.7	\$ 75.	\$ 70.	\$ 65.
2146	44.7	\$ 75.	\$ 70.	\$ 65.
2195	43.4	\$ 75.	\$ 70.	\$ 65.
3106	30.6	\$ 80.	\$ 75.	\$ 70.
3110	30.6	\$ 80.	\$ 75.	\$ 70.
3115	30.6	\$ 80.	\$ 75.	\$ 70.
3120	30.6	\$ 75.	\$ 70.	\$ 65.

*Formerly 1540L

• Plastic Disposable Pipets

Product Code	Size	Per Box	Price
13-711-26	Large Tip	250	\$ 70.
13-711-30	Fine Tip	500	\$ 70.

ANALYTICAL SERVICES, INC

Certificate of Analysis

Sulfur in Mineral Oil Calibration Standards

Product Code:
SMO10(HL)

Lot Number:
020513

Standard Number	Concentration wt %	Expanded Degree of Uncertainty
1	0.00	0.0000
2	0.10	0.0008
3	0.20	0.0016
4	0.50	0.0040
5	0.75	0.0060
6	1.00	0.0080
7	2.00	0.0160
8	3.00	0.0240
9	4.00	0.0320
10	5.00	0.0400

* THE 0.8% EXPANDED DEGREE OF UNCERTAINTY IS BASED ON ERRORS FROM ASSAY ANALYSIS AND WEIGHING OF RAW MATERIALS AT A 95 % CONFIDENCE LEVEL OR ($k = 2$).

EACH STANDARD BATCH WAS PREPARED GRAVIMETRICALLY USING CERTIFIED REAGENTS.

THE CERTIFIED VALUE IS BASED UPON GRAVIMETRIC PREPARATION WITH BALANCE CALIBRATION VERIFIED USING NIST TRACEABLE WEIGHTS.

THESE STANDARDS WERE CHECKED BY X-RAY FLUORESCENCE SPECTROMETRY, (XRF) METHOD ASTM D2622 OR D4294 AND ARE TRACEABLE TO NIST SRM 2723a (SULFUR IN DIESEL FUEL OIL), NIST SRM # 1616a (SULFUR IN KEROSENE), NIST SRM # 2717a (SULFUR IN RESIDUAL FUEL OIL), NIST 2721 (SULFUR IN CRUDE OIL) OR NIST SRM # 2724b (SULFUR IN DIESEL FUEL OIL).

THESE STANDARDS WERE PREPARED ON FEBRUARY 5, 2013 AND ARE STABLE FOR AT LEAST TWO (2) YEARS UNOPENED. IMMEDIATELY AFTER USE, THEY SHOULD BE RECAPPED AND STORED AT AMBIENT TEMPERATURE (50 TO 80 DEGREES, F).

ANALYTICAL SERVICES, INC



Chris Carolan
Production and Quality Control Mgr
5-Feb-13

ANALYTICAL SERVICES, INC
25700 I-45 North - Suite 113
SPRING, TX. 77386
TELEPHONE: (281) 419-9229
TOLL FREE: (866) 419-9229
VISIT US AT: www.analyticalservicesinc.com
E-MAIL: sales@analyticalservicesinc.com

Periodic Table of the Elements

Number of electrons in each shell		Metals		Transition Elements		Inner Transition Elements												
Atomic Number		Nonmetals		Noble Gases		Synthetic												
Symbol		Radioactive																
Name																		
Atomic Mass																		
1 1A	2 2A	3 3B	4 4B	5 5B	6 6B	7 7B	8 8B	9 9B	10 10B	11 1B	12 2B	13 3A	14 4A	15 5A	16 6A	17 7A	18 8A	
1 H Hydrogen 1.00787	2 He Helium 4.0026	3 Li Lithium 6.941	4 Be Beryllium 9.0122	5 B Boron 10.811	6 C Carbon 12.01115	7 N Nitrogen 14.0067	8 O Oxygen 15.9994	9 F Fluorine 18.9984	10 Ne Neon 20.179	11 Na Sodium 22.9898	12 Mg Magnesium 24.305	13 Al Aluminum 26.9815	14 Si Silicon 28.086	15 P Phosphorus 30.9738	16 S Sulfur 32.064	17 Cl Chlorine 35.453	18 Ar Argon 39.948	
19 K Potassium 39.0983	20 Ca Calcium 40.08	21 Sc Scandium 44.956	22 Ti Titanium 47.88	23 V Vanadium 50.942	24 Cr Chromium 51.996	25 Mn Manganese 54.9380	26 Fe Iron 55.847	27 Co Cobalt 58.9332	28 Ni Nickel 58.69	29 Cu Copper 63.54	30 Zn Zinc 65.37	31 Ga Gallium 69.72	32 Ge Germanium 72.59	33 As Arsenic 74.9216	34 Se Selenium 78.96	35 Br Bromine 79.904	36 Kr Krypton 83.80	
37 Rb Rubidium 85.4678	38 Sr Strontium 87.62	39 Y Yttrium 88.905	40 Zr Zirconium 91.22	41 Nb Niobium 92.906	42 Mo Molybdenum 95.94	43 Tc Technetium (98)	44 Ru Ruthenium 101.07	45 Rh Rhodium 102.905	46 Pd Palladium 106.4	47 Ag Silver 107.868	48 Cd Cadmium 112.40	49 In Indium 114.82	50 Sn Tin 118.69	51 Sb Antimony 121.75	52 Te Tellurium 127.60	53 I Iodine 126.9044	54 Xe Xenon 131.29	
55 Cs Cesium 132.905	56 Ba Barium 137.33	57 La Lanthanum 138.91	58 Ce Cerium 140.12	59 Pr Praseodymium 140.907	60 Nd Neodymium 144.24	61 Pm Promethium (145)	62 Sm Samarium 150.35	63 Eu Europium 151.96	64 Gd Gadolinium 157.25	65 Tb Terbium 158.9254	66 Dy Dysprosium 162.50	67 Ho Holmium 164.930	68 Er Erbium 167.26	69 Tm Thulium 168.934	70 Yb Ytterbium 173.04	71 Lu Lutetium 174.97	72 Hf Hafnium 178.49	
87 Fr Francium (223)	88 Ra Radium (226.0254)	89 Ac Actinium (227.0277)	90 Th Thorium 232.038	91 Pa Protactinium (231.0359)	92 U Uranium 238.03	93 Np Neptunium (237.0482)	94 Pu Plutonium (244)	95 Am Americium (243)	96 Cm Curium (247)	97 Bk Berkelium (247)	98 Cf Californium (251)	99 Es Einsteinium (252)	100 Fm Fermium (257)	101 Md Mendelevium (258)	102 No Nobelium (259)	103 Lr Lawrencium (260)	104 Rf Rutherfordium (261)	105 Db Dubnium (262)
113 Uut	114 Uuq	115 Uup	116 Uuh	117 Uus	118 Uuo	119 Uue	120 Uuq	121 Uub	122 Uut	123 Uuq	124 Uub	125 Uut	126 Uuq	127 Uub	128 Uut	129 Uuq	130 Uub	131 Uut

Note: Elements 113-118 are not currently known. They are shown in the table at their expected positions for information only.

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A photograph of an industrial refinery or chemical plant at sunset. The sky is filled with colorful clouds in shades of blue, orange, and yellow. In the foreground, there are several tall, cylindrical towers. One tower is painted with alternating red and white horizontal bands. The rest of the plant is illuminated with warm yellow lights, creating a complex network of pipes, ladders, and structures. The overall scene is a dramatic industrial landscape.

ANALYTICAL SERVICES, INC.

PHONE: (281) 419-9229

TOLL FREE: 1-866-419-9229

www.ANALYTICALSERVICESINC.com