XRD Mineralogy Set

The XRD Mineralogy Set is a collection of 50 different mineralogical substances; most are rare, for non-destructive material characterization, analytical identification and comparison studies with diversified instrumentation inclusive of refractive index, birefringence microscopy and x-ray diffraction. Each mineral is initially hand selected for high concentration content, comminuted to a uniform particle size of 44µ (-325 mesh size) and blended to ensure uniform representation.

Approximately ½ cc of each of the listed substances is contained in a labeled glass vial sealed with a polycone screw cap. The vials are organized in a protective polyfoam block and packaged in an attractive lockable wood case. The inside lid contains a reference chart alpha-numerically keyed to the mineral vial positions for easy identification and retrieval.

Table of Minerals Content

Albite	Cassiterite	Lepidolite	Pumice	Spodumente
Amazonite	Celestite	Microline	Pyroxdenite	Tetrahedrite
Anhydrite	Cryolite	Monzonite	Quartz	Titanite
Apatite	Epidote	Nepheline	Rhodochrosite	Topaz
Aragonite	Fluorite	Obsidian	Rutile	Tourmaline
Azurite	Glauconite	Olivine	Scheelite	Tremolite
Barite	Grossular	Opal	Serpentine	Vesuvianite
Beryl	Gypsum	Orpiment	Siderite	Wollastonite
Biotite	Hornblende	Parthite	Sodalite	Zincite
Calcite	Labradorite	Prehnite	Sphalerite	Zircon

Specifications and Ordering Information

CATALOG NO.	DESCRIPTION	DIMENSIONS
3000	XRD Mineralogy Set	6.5" x 4.5 x 2.5"

Chemplex Industries, Inc.
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SpectroStandard® XRF Reference Materials Preparation Kit

In the absence of readily available standards, the SpectroStandard® XRF Reference Materials Preparation Kit offers an alternate choice in accommodating infrequent or "out of the ordinary" sample unknowns. The unique assemblage of assorted compounds contains 50 elements to prepare "in-lab" reference materials for single or multiple elemental analyses.

SpectroStandard® XRF Reference Materials Preparation Kit,
Cat. No: 6700

The method involves gravimetric dilution of a compound with a diluent, such as SpectroBlend® 44µ Powder, Cat. No: 660, to develop a weight percent concentration value of the element of interest. Two sample vials of SpectroBlend® Powder each containing 6 gm are included with each Kit. Successive dilution preparations serve in establishing a linear correlation of the concentrations and analyte-line intensities against which the unknown sample is referred to and assigned a concentration value. Although this methodology suffices in many instances, it is not intended as a replacement for standardization with certified materials of similar matrices for exacting results. It serves its application in situations where time, primary standard availability and frequency of sample submittals represent uncertainties and advance preparedness is a current option with a SpectroStandard® Reference Standard Kit.

Instructions are included for dilution of each compound to a desired element concentration followed by thorough blending with the diluent to ensure homogeneity. After blending, the diluted mixture is usable in “loose powder” form by transferring it to a sample cup with a thin-film attached or in a tapered pellet cup for briquette formation. Reference material briquettes have additional applications during initial instrument installations, for optimizing and monitoring instrument performance and drift.

The reference materials are prepared from finely powdered substances, mostly oxides, in purities of 99.9 to 99.99%. One gram of each of the substances is contained in a labeled glass vial with a polycone screw cap, organized and protected in a polyfoam block and packaged together with two starter sample vials of SpectroBlend® Powder in a plastic case with a locking lid. The inside of the lid contains a label identifying the contents of each vial and alpha-numerically keyed to the vial positions for easy retrieval.

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Table of Minerals Content

Ag Ag_2O	**Al** Al_2O_3	**As** As_2O_3	**Ba** $BaHPO_4$	**Be** BeO	**Bi** Bi_2O_3	**Ca** CaO	**Ca** CdO	**Ce** CeO_2	**Co** Co_3O_4
Cr Cr_2O_3	**Cs** $CsNO_3$	**Cu** CuO	**Fe** Fe_2O_3	**Ga** Ga_2O_3	**Ge** GeO_2	**Gd** Gd_2O_3	**Hf** HfO_2	**Hg** HgO	**In** In_2O_3
I I_2O_5	**K** K_2CO_3	**La** La_2O_3	**F** LiF	**Mg** MgO	**Mn** MnO_2	**Mo** MoO_3	**Na** NaCl	**Nb** Nb_2O_5	**P** $NH_4H_2PO_4$
Sc Sc_2O_3	**Pb** PbO	**Rb** RbCl	**S**	**Sb** Sb_2O_3	**Ni** NiO	**Se** SeO_2	**Si** SiO_2	**Sn** SnO_2	**Sr** $SrCO_3$
Ta Ta_2O_3	**Te** TeO_2	**Th** ThO_2	**Ti** TiO_2	**Tl** Tl_2O_3	**Tm** Tm_2O_3	**V** V_2O_5	**W** WO_3	**Zn** ZnO	**Zr** ZrO_2

Specifications and Ordering Information

CATALOG NO.	DESCRIPTION
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Non-Aqueous Petrochemical Standard Reference Materials

Specially formulated SpectroStandard© standard reference materials are in accord with world recognized methodologies and compliance with various governmental and regulatory agency requirements whenever feasible. SpectroCertified© standard reference materials are accompanied with Certificates of Analysis indicating traceability to applicable methodologies, standard reference sources, validity terms and relative degrees of uncertainty.

Polysulfide Calibration, QC/ & Drift Standards

Recent governmental regulations have necessitated the quantification of fuels for sulfur content to levels as low as 1 PPM. This has created a need for special formulations to serve as highly reliable and accurate calibration standards combining stability, consistency, long term shelf life, low volatility and miscibility with mineral and lubrication oils, diesel fuel, ultra clean fuels and high weight percent sulfur in crude and residual oils.

Chemplex polysulfide SpectroStandards® formulations are ideally suitable for conforming to governmental regulations and compliance with ASTM Methods D2622, D4294, D7039, D7212 and D7220. They are available for establishing sulfur calibration curves for XRF spectrochemical analysis, maintaining a quality control program and for monitoring potential instrument drift.

SpectroStandards® polysulfide standards are SpectroCertified® quality by traceability to NIST SRM 2724b.

Biodiesel Fuel Standards and Chemicals

A comprehensive product line of SpectroCertified® biodiesel fuel standards are offered for testing sulfur, free and total glycerin, sodium, potassium, methanol in FAME, iodine values, hexane residue in fats and oil and simulated distillations. The standards are processed in accordance with ASTM, DIN, UOP and ACOS methodologies and provided mostly in sets and in sealed ampoules.

Sulfur SpectroStandard© Sets

Single-element sulfur SpectroStandards are assembled in sets offering considerably broad ranges of concentrations spreads for instrument calibration purposes.

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Typical Matrix	Concentration Range
Mineral Oil	Blank to 5 wt. % S and Blank to 1000 PPM S
Synthetic Diesel Fuel	Blank to 5 wt. % S and Blank to 100 PPM S
Residual Oil	0.25 t o 5.0 wt. % S
Gravimetric Sulfur Standards, Mineral Oil	1 to 450 PPM S
Precision Sulfur Standards, Diesel Fuel	7 to 300 PPM S
Waste Oil, Sulfur and Chlorine Standards	Blank to 2.5 wt % S and Blank to 1 wt % Cl
Waste Oil, Chlorine	0.05 to 1.0 wt. % Cl

Sulfur and Metal SpectroStandard® Sets

Varied multi-element metal concentrations with consistent sulfur content in mineral and diesel oil bases are formulated to closely approximate actual sample matrices. All elements are present in PPM concentration levels.

Typical Matrix	Typical Sulfur Range	Typical Metals Present
Mineral Oil	Blank to 5.5 wt. %	Ni and V or Fe, Ni and V
Residual Oil	0.185 to 5.5 wt %	Ni and V or Fe, Ni and V

Lubricating Oil SpectroStandard® Sets

Varied multi-element metal concentrations with consistent sulfur content in mineral and diesel oil bases are formulated to closely approximate actual sample matrices. All elements are present in PPM concentration levels.

Multi-Element Wear-Metal SpectroStandard® Lubricating Oil Standards

Individual units of selective wear-metal standards each formulated at a specific PPM concentration level prepared in lubricating oil as the matrix for monitoring and predicting frictional wear of constituent machine parts. Typical wear-metal and concentration level combinations: Ag, Al, B, Ba, Ca, Cd, Cr, Cu, Fe, K, Mg, Mo, Na, Ni, P, Pb, Si, Sn, Ti, V and Zn each at 10 to 900 PPM.

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Diluted Individual Single-Element Organo-Metallic SpectroStandard® Oil Standards

Ready-for-use, individual units of various organo-metallic elements are formulated with a proprietary chelate and stabilizer. Each element present at 0.1 and 0.5 wt. % Z. Typical organo-metallic elements: Al, Sb, As, Ba, Be, Cd, Ca, Ce, Cr, Co, Cu, Ga, Au, Fe, Pb, Li, Mg, Mn, Hg, Mo, Ni, P, K, Se, Si, Ag, Na, Sr, Tl, Sn, Ti, V, Y, Zn and Zr.

Concentrated Individual Single-Element Organo-Metallic SpectroStandard® Oil Standards

Ready-for-use or may be diluted to different concentration levels. Individual units of various organo-metallic elements are formulated with a proprietary chelate and stabilizer to avert metallic precipitation. Each element present at substantially high concentration levels for in-lab dilutions. Typical organo-metallic elements: Al, Sb, As, Ba, Cd, Ca, Ce, Cr, Co, Cu, Fe, Pb, Li, Mg, Mn, Mo, Ni, P, K, Pr, Se, Si, Na, Sr, Tl, Sn, Ti, V, Y, Zn and Zr.

Single-Element Sulfur SpectroStandard® Oil Standards Sets

Single element sulfur standards are diluted to various concentration levels for determining and monitoring the sulfur content in mineral oil, synthetic diesel fuel and residual oil matrices.

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RoHS/WHEE Compliance Disc Polymer Sets

Polyethylene(PE) Disc Standard Sets

Polyethylene powdered standards are transformed into solidified self-supporting discs contained in XRF Sample Cups for compliance applications to RoHS/WHEE directives. Available in two diameters: 32 mm x 10 mm thick contained in Chemplex XRF Sample Cups, Cat. No. 1330, and 40 mm x 10 mm thick in XRF Sample Cups, Cat. No. 1340. Supplied in sets consisting of the indicated pre-mounted standards plus a Quality Control Standard.

Specifications and Ordering Information

Specify 32 mm or 40 mm when ordering

CAT. NO: PL(PE)3-5E(D)					
Standard Number	**Br, Wt. %**	**Cd, Wt. %**	**Cr, Wt. %**	**Hg, Wt. %**	**Pb, Wt. %**
1	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0500	0.0050	0.0500	0.0500	0.0500
3	0.1000	0.0100	0.1000	0.1000	0.1000
Quality Control Standard	0.0500	0.0050	0.0500	0.0500	0.0500

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CAT. NO: PL(PE)9-5E(D)					
Standard Number	**Br, Wt. %**	**Cd, Wt. %**	**Cr, Wt. %**	**Hg, Wt. %**	**Pb, Wt. %**
1	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.1000	0.0100	0.0010	0.0100	0.1000
3	0.1000	0.0100	0.1200	0.0150	0.0100
4	0.0100	0.0150	0.0750	0.0001	0.0010
5	0.0500	0.0075	0.1000	0.0075	0.1500
6	0.1500	0.0010	0.0500	0.0010	0.0075
7	0.0750	0.0001	0.0100	0.0200	0.0100
8	0.0100	0.0050	0.0500	0.0050	0.0500
9	0.0500	0.0150	0.0100	0.0050	0.0500
Quality Control Standard	0.0500	0.0050	0.0500	0.0500	0.0500

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Polyvinylchlorine(PVC) Disc Standards

Polyvinyl chloride powdered standards are transformed into solidified self-supporting discs contained in XRF Sample Cups for compliance applications, ease of handling and protection. Available in two diameters: 32 mm x 10 mm thick contained in Chemplex XRF Sample Cups, Cat. No. 1330, and 40 mm x 10 mm thick in XRF Sample Cups, Cat. No. 1340. Supplied in sets consisting of one each pre-mounted standard plus a Quality Control Standard.

Specifications and Ordering Information (Specify 32 mm or 40 mm when ordering)

CAT. NO: PL(PVC)3-5E(D)							
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	1.5000	15.00
2	0.0500	0.0050	0.0500	0.0500	0.0500	1.5000	15.00
3	0.1000	0.0100	0.1000	0.1000	0.1000	1.5000	15.00
Quality Control Standard	0.0500	0.0050	0.0500	0.0500	0.0500	0.0	35.0

CAT. NO: PL(PVC)9-5E(D)							
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	0.0	40.0
2	0.1000	0.0100	0.0010	0.0100	0.1000	0.500	35.0
3	0.1000	0.0100	0.1200	0.0150	0.0100	1.500	15.0
4	0.0100	0.0150	0.0750	0.0001	0.0010	0.250	40.0
5	0.0500	0.0075	0.1000	0.0075	0.1500	0.0	35.0
6	0.1500	0.0010	0.0500	0.0010	0.0075	3.0	10.0
7	0.0750	0.0001	0.0100	0.0200	0.0100	0.0	40.0
8	0.0100	0.0050	0.0500	0.0050	0.0500	2.0	12.5
9	0.0500	0.0150	0.0100	0.0050	0.0500	0.0	35.0
Quality Control Standard	0.0500	0.0050	0.0500	0.0500	0.0500	0.0	35.0

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