

**Special points of interest inside:**

- CRM Certified Updates and Developments.
- Calibration Reference Materials for Rent.
- The importance of being part of ASTM.
- Spectroscopy 101 Training Class.
- Quick Quality Survey.



## New WEEE/RoHS & Packaging Reference Materials

ARMI has WEEE/RoHS reference materials for Solder, Copper, Aluminum, PVC, PE, and Glasses for XRF analysis.

**Brand New – Packaging Directive Reference Materials** - A new set of PE reference materials allows for compliance testing to the “Packaging Directive” (P&PW 94/62/EC).

This set consists of 2 reference materials:

- **PACK-High** (about 100 mg/kg of Hg, Cr, Pb, and Cd)
- **PACK-Low** (about 30mg/kg of Hg, Cr, and Pb and about 60 mg/kg of Cd).

**These materials are available now.  
Please contact us for additional information.**

## Drift Monitors for XRF

Establishing an accurate calibration for a series of elements in a product is a tedious and costly exercise. The use of a stable monitor means that the calibration procedure need only be carried out at long intervals.

The monitors listed below have been formulated so that they have appropriate count rates when analyzing the different ores and products. The monitors contain little flux and should have good long term stability. Most monitor types have been in use for many years and have given excellent stability.

The monitor discs are 40mm in diameter. In most cases, these monitors contain chemistries for over 30 elements. They are polished flat so that they can be precisely mounted and easily cleaned.

The following types are available:

**Silicates and General Use** - These monitors are designed for the analysis of rocks, soils, and related materials, and can be used on a wide range of materials (e.g. vegetables, etc.).

**Iron Ores** - These are formulated for use in the

analysis of iron ores and related materials.

**Mineral Sands** - These monitors have been prepared for use when analyzing mineral sand products (e.g. ilmenite, rutile, zircon, monazite, and xenotime).

**Cement** - Monitors prepared for analyzing cement and related materials.

**High Nickel Products** - These monitors are for use with nickel ores and related materials.

**Manganese Ores** - These monitors are for use when analyzing manganese ores.

**Lead, Zinc, Iron, and Copper Sulfides** - These monitors are for use with lead, zinc, iron and copper sulfides, as ores, concentrates and related products.

**Rare Earths** - These monitors are to be used when analyzing monazite, xenotime, and other rare earth minerals for the rare earth oxides.

**Please contact us for further information.**

## Solid Sample Analysis by DC Arc & ETV

Do you need ultra sensitivity for analysis of nearly any material?

In about six months, a new spectrometer will be available that will incorporate ICP, ElectroThermal Vaporization (ETV), and DC Arc sample excitation or any combination of these excitation sources -- and possibly all three.

The traditional liquid analysis ICP applications plus the micro-sampling solid (and liquid) sample capability of ETV and DC Arc will serve a very wide field of applications.

- ✓ **routine-analysis** of any powder, even refractories (e.g. SiC)
- ✓ metals, metal oxides, carbides, sulfides, borides,

nitrides, graphite

- ✓ soil samples, sludges, ashes
- ✓ geological and environmental samples
- ✓ **organic material** (plants, tissues, food, oil products...)
- ✓ nuclear applications
- ✓ forensic **microanalysis**
- ✓ process control for pharmaceuticals
- ✓ **identification tests...**

Direct analysis of solids has some distinct advantages: no costly and time-consuming digestion and very low detection limits. This may be just the right choice for your laboratory.

**Please contact us for further information.**



## Recently Certified Standards & New Alloys

We continually listen to our customers' requests and develop standards to meet their needs.

The following CRMs have been certified since the last Newsletter:

<b>Carbon, Low-Alloy, &amp; Tool Steels</b>			
IARM	Grade	UNS #	Cert.
41C	AISI D-2	T30402	Oct-07
183B	12L14	G12144	Oct-07

<b>Stainless, &amp; High-Temp. Steels</b>			
IARM	Grade	UNS #	Cert.
23C	17-4 PH	S17400	Oct-07
24B	Invar 36	K93601	Oct-07
98B	KOVAR	K94610	Oct-07
100C	Haynes 556	R30556	Oct-07
157B	AL-6XN	N08367	Oct-07
212B	Alloy 2205	S32205	Oct-07

<b>Copper, Brass, &amp; Bronze Alloys</b>			
IARM	Grade	UNS #	Cert.
158B	CDA 815	C81500	Oct-07
158C	CDA 815	C81500	Oct-07
236A	CDA 964	C96400	Oct-07

We also maintain a long list of re-issued and soon-to-certify materials. Please check the Material Status section of our web site at: [www.ARMIL.com](http://www.ARMIL.com).

The following list contains new alloys recently added to our line-up of standards that are in the process of being certified:

### Stainless, & High-Temp. Steels

IARM	Grade	UNS#
276A	Alloy 864	S35135
289A	AISI 301	S30100
291A	M-152	S64152
292A	LDX 2101	S32101
294A	NMS J38	N/A
295A	NMS 140	N/A
296A	NMS MDC	N/A
301A	Alloy 2507	S32750
302A	254SMO	S31254
308A	Alloy C-250	K92890
309A	Alloy C-350	K93540

### Carbon, Low-Alloy, & Tool Steels

IARM	Grade	UNS#
281A	AISI T-4	T12004
299A	D6-AC	K22925
304A	AISI M-1	T11301
305A	NIT 135M	K24065
306A	AISI M-50	T11350
307A	AISI 1118	G11180

### Nickel Alloys

IARM	Grade	UNS#
272A	Alloy 706	N09706
273A	Alloy 720	N07720

274A	Alloy 725	N07725
275A	Alloy 925	N09925
277A	Rene 77	N/A
283A	B1900	N/A
287A	Udimet 500	N07500

### Copper, Brass and Bronze Alloys

IARM	Grade	UNS#
278A	CDA 145	C14500
279A	CDA 182	C18200
284A	CDA 962	C96200
288A	CDA 963	C96300
293A	DHP Copper	N/A
298A	CDA 976	C97600

### Titanium Alloys

IARM	Grade	UNS#
261A	Ti 3-2.5	R56320
262A	Ti 7-4	R56740
269A	Ti 8-1-1	R54810
271A	Ti 5-2.5	R54520
280A	Ti 4-2-2	N/A
285A	Ti 6-2-1-1	R56210
286A	Ti 3-8-6-4-4	R58640
297A	Ti 10-2-3	R56410
300A	Ti 6-7	R56700
303A	CP Ti Grade 7	R52400
311A	Ti CP BT1-0	N/A
312A	Ti CP4 (Grade 1)	R50250

**If you need a standard we do not offer, please contact us.**

## XRF Reference Material for Sale

ARMI is selling the following "Hard-To-Find" XRF Calibration Materials

Material Type	Source
Calcite	IRSID
Dolomite	IRSID
Thomas Slag	IRSID
Basic Slag	BAS, Ltd
Blast Furnace Slag	BAS, Ltd
Dolomite	BAS, Ltd
Basic Slag	BAS, Ltd
Blast Furnace Slag	Brammer Standards Co.
BOF Slag	Brammer Standards Co.
Electric Furnace Slag	Brammer Standards Co.
Hawaiian Basalt	USGS
Marine Mud	USGS
Quartz Latite	USGS

Glass Mtn Rhyolite	USGS
Cody Shale	USGS
Mica Schist	USGS
Green River Shale	USGS
Nepheline Syenite	USGS
Basic Open Hearth Slag	Swedish Inst. for Metallurgy
Blast Furnace Slag	Swedish Inst. for Metallurgy
Acid Open Hearth Slag	Swedish Inst. for Metallurgy
Electric Arc Refining Slag	Swedish Inst. for Metallurgy
Electric Arc Oxidizing Slag	Swedish Inst. for Metallurgy
Electric Arc Slag with Cr	Swedish Inst. for Metallurgy
Lujavrite	South Africa Bureau of Stds
Norite	South Africa Bureau of Stds
Syenite Rock	CANMET

**Please call for quantity, current availability, and pricing.**

## American Society for Testing and Materials -- ASTM International

Mr. Tom O'Toole, ASTM Staff Manager for Committee E-01, and Dr. Carroll Davis, past chairman of Committee E-01, spoke at ARMI's ILAP Technical Conference held this past July. They spoke on ASTM's general past and current work in standards development, international cooperation agreements, and the benefits of active

membership. They also specifically addressed Committee E-01 work, current projects, and future direction.

Organized in 1898, ASTM International has grown into one of the largest voluntary standards development systems in the world. ASTM provides a forum for producers, users, consumers, and



## American Society for Testing and Materials (Cont.)

representatives of government and academia to meet on common ground and write standards for materials, products, systems, and services.

From the work of 139 standards-writing committees, ASTM publishes more than 12,500 standards each year. These standards are accepted and used throughout the world. Over 30,000 technically qualified ASTM members from all over the world accomplish this work voluntarily.

ARMI regularly attends three ASTM committee meetings: E01-Analytical Chemistry for Metals, Ores, and Related Materials, F40-Declarable Substances in Materials, and D05-Coal and Coke. It is important to keep up-to-date on the needs of the various industries for reference materials.

**For more information about ASTM, please check their website at [www.astm.org](http://www.astm.org) or you can contact ARMI if you have any questions.**

## Meinhard Glass Products -- ICP and ICPMS

ARMI's Meinhard Glass Products (MGP) division has been expanding its product lines for ICP and ICPMS sample introduction – nebulizers, torches, and chambers. In addition to the "Industry Standard" Meinhard nebulizers (best performance-best value), MGP is pleased to offer nebulizers in Teflon PFA and polypropylene. These microconcentric nebulizers are especially useful for small-volume samples and highly-corrosive solutions like HF.

MGP also provides a v-groove nebulizer that can handle suspended solids of 10% or more without clogging. Finally, there is a nebulizer with the capability for both high-solids and highly-corrosive solutions.

Meinhard distributes Spetec peristaltic pumps that have long been known as the best of the best.

Meinhard also distributes Elemental Scientific (ESI) products. ESI has a new line of autosamplers with industry-leading performance and flexibility.

Meinhard can provide nebulizers, torches, chambers, and custom glassware for any and all ICP or ICPMS systems.

**For more information please call MGP at 1-800-Meinhard or visit their website, [Meinhard.com](http://Meinhard.com) or visit with us at PITTCON '08 in Meinhard's Booth, #3903.**

## ARMI's Proficiency Testing Program (PTP)

ARMI's PTP is a very popular part of many Quality Assurance efforts. The reasons can be attributed to the many unique features of the ARMI PTP:

- ✓ The "test sample" is an actual CRM, with a 95% Confidence Interval.
- ✓ Your results are sent back to you within 48 hours by fax or e-mail.
- ✓ The color-coded results are very easy to interpret.
- ✓ If there are out-of-tolerance results, ARMI will help you determine the cause.
- ✓ Helps to satisfy both internal and external auditors.

✓ Is a great part of any QA/QC program.

The ARMI PTP allows for fast corrective action in case of problems. It is an economical and fast sure way to provide a periodic assessment of a laboratory's performance.

We are such a believer in this program that we will be offering a 10% discount -- for the rest of 2007. And, as a bonus for new subscribers, we will waive the \$225 set-up fee.

**We want to help our customers have a successful Quality Assurance Program.**

## Spectroscopy 101 - January 22, 2008

We will be holding our very popular 1-day class on the fundamentals of Optical Emission (OE) at our facilities in Golden, Colorado on January 22<sup>nd</sup>, 2008. Topics addressed will include: technique theory, spectrometer theory, calibration, sample preparation, accuracy determination, results reporting, routine quality control, trouble shooting, maintenance, and much, much more!

These classes are aimed at instrument operators and laboratory supervisors. Practical experience is emphasized, with an initial overview of theory to provide a firm foundation. You will be turned into

an "O.E. Expert" in just one day!

We can hold this school on other dates as well. Please specify a different date that would meet your schedule and we will try to accommodate your request. We prefer to hold the schools on Tuesdays. Monday and Wednesday are travel days.

We can also hold the class at your facilities on a date of your choosing. It is less expensive if there are more than 2 attendees because of travel cost.

**Please contact us for additional information, possible different dates or to register.**

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**ARMI has the following  
used equipment for sale:**

***LAST ONE!!***

A LAPMASTER Bench-Top lapping machine. This is compact enough to fit on a standard workbench and is very cost effective for producing superb surfaces. This machine will enable you to achieve a high standard of flatness and polish to a mirror-like finish on a continuous basis.

**If you need further information or would like to make an offer, please contact us.**



*The Leader in Application-Specific Certified Reference Materials.*

# FAX-O-GRAM

Please indicate your needs. When finished please FAX this form back to us at (303) 216-2649

**Catalog Type:**

- ARMI **General** Catalog
- ALCAN **Aluminum** Catalog
- Meinhard **Glass Products** Catalog

**Customer Classification:**

- Foundry / Producer / General Industry
- Commercial Lab
- Academia
- Other — (Please list in comments area)

**Please Respond:**

- I **need** your current catalog.
- I **need** information on ISO 17025 compliancy.
- I **need** information on Proficiency Testing (PT).

**Method of Analysis:**

- OE Spectroscopy
- XRF Spectroscopy
- ICP / ICPMS
- Other — (Please list in comments area)

- Please **contact** me.
- Please **leave** me alone.

Comments:

Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

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Phone \_\_\_\_\_ E-mail Address \_\_\_\_\_

ANALYTICAL REFERENCE MATERIALS INTERNATIONAL

**ISO 9000 Quick Quality Survey**

(Please write additional comments in block provided above. Thank You!)

- Product Quality:**  Excellent  Good  Fair  Poor
- Service Quality:**  Excellent  Good  Fair  Poor

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