ASTM International Interlaboratory Study Program (ILS)

www.astm.org
Who we are and what we do …

In 2004, the Board of Directors approved the creation of a unit that would help to strengthen the perceived quality of ASTM Test Methods by:

➢ Facilitating the production of data to develop Precision & Bias statements and Research Reports

➢ Providing administrative support to the committees
  ➢ ASTM is not a lab. We aren’t able to test or receive samples.

➢ Offering financial support to the committees

➢ Helping to ensure the confidentiality of participating labs
A21. Precision and Bias (Mandatory)

A21.2.1 A statement on precision allows potential users of the test method to assess in general terms its usefulness in proposed applications.

A21.2.3 Every test method shall contain: (1) a statement regarding the precision of test results obtained in the same laboratory under specifically defined conditions of within-laboratory variability (repeatability conditions); and (2) a statement regarding the precision of test results obtained in different laboratories (reproducibility conditions).
A test result should be uniquely defined by the Test Method

- Single test determination
- The average of two or more determinations
- Subject to multiple if/then statements

One test result = one reportable replicate for ILS purposes

A test result is the actual number you would report to a client.

We will need multiple test results, on each material, from every operator, in order to calculate precision.
Test Method X requires the average of 5 individual measurements to report a single test result (replicate).

Your ILS asks for 3 replicate test results to determine precision.

Therefore a total of 15 individual measurements must be taken to produce the 3 replicate test results (each 1 average of 5) by each laboratory.

Laboratory Data Report Form

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Average:</td>
<td>4.4</td>
<td>4.8</td>
<td>5.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Administrative Support

➢ Scheduling of conference calls and WebEx meetings
➢ Review of Experimental Design
➢ Assistance identifying volunteer laboratories
➢ Identification of sample vendors
➢ Coordination of sample distribution
➢ Data collection
➢ Statistical processing
➢ Generation of reports
Strengths

➢ Input encouraged from active Committee volunteers, as well as non-members, broadening the range and diversity of the study participants, allowing the study to most accurately demonstrate expected “real-world” precision

➢ Scientific neutrality of ASTM in reviewing test data

➢ Provides value-added Quality Assurance Programs to participating laboratories
Potential Lab Benefits of Participation

➢ Statistical program to monitor strengths and weaknesses of lab testing when compared to peers

➢ Assess testing performance and adherence to written procedures by lab technicians

➢ Recognition in the final Research Report
Benefits to the Committees

➢ Meet the requirements of the Form and Style Manual

➢ Obtain valuable feedback on methods, leading to the correction of errors and omissions, as well as highlighting the need for technical updates

➢ Resource for increased membership

“I think there was a typo in the lab instructions.”
To generate, the ILS Staff must have:

- Laboratory Names
- Material Names
- Number of Replicates

The Sample Labeling Matrix below would be sent to the distributor by the ILS Staff and is utilized by Committees D02, D16 & D19.

<table>
<thead>
<tr>
<th>Sample Name/ Lab Name:</th>
<th>University of Calgary</th>
<th>Marathon Oil</th>
<th>Alberta Research Council</th>
<th>Phillips 66 OK</th>
<th>LyondellBasell II</th>
<th>ExxonMobil Research</th>
<th>Agilent Technologies</th>
<th>Triton Analytics Corp</th>
<th>Envantage Inc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kerosene</td>
<td>1, 7</td>
<td>2, 12</td>
<td>5, 6</td>
<td>7, 9</td>
<td>4, 6</td>
<td>4, 7</td>
<td>2, 5</td>
<td>8, 11</td>
<td>7, 10</td>
</tr>
<tr>
<td>High Sulfur Diesel</td>
<td>3, 6</td>
<td>3, 10</td>
<td>9, 10</td>
<td>5, 10</td>
<td>2, 11</td>
<td>5, 10</td>
<td>9, 12</td>
<td>1, 4</td>
<td>2, 6</td>
</tr>
<tr>
<td>#2 Low Sulfur Diesel</td>
<td>5, 12</td>
<td>5, 11</td>
<td>4, 11</td>
<td>3, 11</td>
<td>8, 9</td>
<td>11, 12</td>
<td>1, 10</td>
<td>6, 10</td>
<td>4, 11</td>
</tr>
<tr>
<td>Aviation Turbine Jet A</td>
<td>2, 4</td>
<td>4, 6</td>
<td>2, 8</td>
<td>1, 6</td>
<td>3, 10</td>
<td>2, 8</td>
<td>3, 4</td>
<td>2, 9</td>
<td>5, 9</td>
</tr>
<tr>
<td>Ultra Low Sulfur Diesel</td>
<td>8, 11</td>
<td>7, 9</td>
<td>3, 7</td>
<td>2, 4</td>
<td>5, 7</td>
<td>1, 6</td>
<td>6, 11</td>
<td>3, 12</td>
<td>1, 3</td>
</tr>
<tr>
<td>Light Cycle Oil</td>
<td>9, 10</td>
<td>1, 8</td>
<td>1, 12</td>
<td>8, 12</td>
<td>1, 12</td>
<td>3, 9</td>
<td>7, 8</td>
<td>5, 7</td>
<td>8, 12</td>
</tr>
</tbody>
</table>
## Data Report Form - Instructions

**ILS# 1446**

**ASTM F3203 - Test Method for Determination of Gel Content of Crosslinked Polyethylene (PEX) Pipes and Tubing**

### Basic Study Information:

Please have one Laboratory Technician conduct all ILS testing.
Please follow ASTM standard provided to you for this study.
Please complete the testing in the shortest possible period of time.

### Data Entry:

Do not enter commas (1,234 --> 1234)
Do not report units

### Submitting Data:

Please submit completed data report forms to ILS@astm.org

Laboratory understands and agrees that the data generated as a result of the services and provided to ASTM will be used in ASTM’s business, to assist in developing a research report, consensus standard or adjunct thereto. Laboratory agrees to keep such data and results confidential and not to disclose or share the data/results with anyone else, without ASTM’s written consent.

*Click here for a copy of the ASTM International’s Intellectual Property Policy.*
Data Report Form

ILS#1446
F3203, Standard Test Method for Determination of Gel Content of Crosslinked Polyethylene (PEX) Pipes and Tubing

| Laboratory Name: |
| Laboratory Technician: |
| Date: |

Please submit completed data report forms to ILS@astm.org

<table>
<thead>
<tr>
<th>Measured % Gel Content</th>
<th>Material X</th>
<th>Material X-1</th>
<th>Material X-2</th>
<th>Material X-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replicate 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replicate 2</td>
<td></td>
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<tr>
<td>Replicate 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measured % Gel Content</th>
<th>Material Y</th>
<th>Material Y-1</th>
<th>Material Y-2</th>
<th>Material Y-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replicate 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replicate 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replicate 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measured % Gel Content</th>
<th>Material Z</th>
<th>Material Z-1</th>
<th>Material Z-2</th>
<th>Material Z-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replicate 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replicate 2</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replicate 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments:

Laboratory understands and agrees that the data generated as a result of the services and provided to ASTM will be used in ASTM’s business, to assist in developing a research report, consensus standard or adjunct thereto. Laboratory agrees to keep such data and results confidential and not to disclose or share the data/results with anyone else, without ASTM’s written consent.
Administering Programs

➢ Conference Calls or Virtual Meetings with the participants to discuss specific study instructions

➢ Coordination of acquisition and distribution of study material
   ✓ Physical
   ✓ Electronic

➢ Collection of data & analysis of data

➢ Assist with the adjudication of negative votes
Precision

➢ To calculate precision, we need usable data from at least six laboratories (The closer to 30, the better)

➢ Each lab should report 2-10 replicate test results per material

➢ The precision statement in an ASTM test method is not meant to qualify it as good or bad

    Example: % Moisture in mulch vs. aspirin

➢ The published precision is there to help a user of the standard understand what can be expected based on the real world results of others
Repeatability (r) ranges

- With 95% confidence, the same operator, in the same laboratory, using the same equipment, under the same conditions, should obtain results when testing the same material that agree within this range.

- **Example**: published repeatability range = 2.4 ppm

  Test Result 1: 79.1 ppm  
  Test Result 2: 81.6 ppm

  Results differ by 2.5 ppm, therefore: **Suspect**  
  *Internal laboratory investigation may be advisable*
Reproducibility (R) ranges

➢ With 95% confidence, two operators, in different laboratories, using different equipment, under conditions meeting those specified in the standard, should obtain results when testing the same material that agree within this range.

➢ **Example**: published reproducibility range = 3.2 ppb

  Test Result from lab 1: 50.8 ppb

  Test Result from lab 2: 47.9 ppb

  Results differ by 2.9 ppb, therefore: As Expected
E691 is useful for estimating the precision of different materials, at varying levels, with a repeatability and reproducibility range being calculated for each.

- Usually 3-7 different materials span the range stated in the Scope of the standard

Within laboratory precision is evaluated against a k-statistic.

- Variability among replicates in any one lab

Between laboratory precision is evaluated against an h-statistic.

- Lab averages compared between all participants
The Statistics (for Committee D02)

➢ **Subcommittee D02.94** - Coordinating Subcommittee on Quality Assurance and Statistics

**ASTM D6300**

Standard Practice for Determination of Precision and Bias Data for Use in Test Methods for Petroleum Products and Lubricants:

Addition of minimum design criteria for interim repeatability study only (clause 6.2.1)

Addition of minimum leverage criterion for sample set design of full ILS (clause 6.4.2)
Bias

➢ To calculate bias, we need to include a reference “standard” among the sample specimens distributed to the participating laboratories.

✓ Bias may be determined as the average discrepancy between the “known” value and the reported values.
Precision and Bias

large bias + high precision = low accuracy

zero bias + high precision = high accuracy

large bias + low precision = low accuracy

zero bias + low precision = low accuracy
Remember …

➢ Your standard may allow you to correct for bias.
➢ You cannot correct for imprecision.
➢ An ILS may be used to demonstrate improvement as standards are modified.
  ✓ For example: Compare results from Method A with those from Method B
➢ The presence of a Precision Statement can make a standard stronger, but it doesn’t make it more repeatable.
Interlaboratory Study Program

ASTM's Board of Directors adopted plans, in the fall of 2004, to launch the Interlaboratory Study Program (ILS) as part of their continuing pursuit of excellence in standards development. Responding to the need for standards in the marketplace to be of known and documented quality, a commitment was made to fund the development of the ILS Program. This commitment means that ASTM has been able to assist those technical committees for which the prospect of implementing an interlaboratory study was either administratively daunting or financially impossible. The ultimate goal is to enhance the quality of ASTM standard test methods by aiding the Technical Committees as they develop Precision Statements backed by high quality laboratory data.

In order to support the committees in their efforts to produce precision statements for their test methods, so as to incorporate at least a repeatability statement, the ILS Program is available to assist with the following areas:

- Designing an Interlaboratory Study
- Identifying potential samples
- Soliciting volunteer laboratories
- Finding an available supplier
- Contracting with a distributor
- Reviewing laboratory instructions
- Reimbursing shipping expenses
- Collecting data
- Analyzing data
- Producing a draft precision statement
- Compiling information for the Research Report
- Recognition of participating labs

Once a Work Item has been registered (instructions here), new programs should be registered through the Interlaboratory Study (ILS) link in the My Tools section of the member’s MyASTM page, available after logging into ASTM’s website. Or simply click here: Register a new ILS study
Establishing New Programs

- Concept registered as a Work Item
- Program registered online as an ILS
- Initial conference call, with the a technical contact from the committee, to establish the basic study parameters
- Experimental design (with input from the committee’s statistical support person, if available)
- Identification of study materials, suppliers, a distributor, and volunteer laboratories
ILS# 0018 Committee Week Status Report

D3942, Test Method for Determination of the Unit Cell Dimension of a Faujasite-Type Zeolite

June 9, 2017

Subcommittee: D32.05
Technical Contact: Thomas Szymanski
Staff Manager: Kelly Paul
Work Item Number: WK29901
Registered Date: April 26, 2006
Statistical Support: THOMAS SZYMANSKI

Tests:
1. Relative Crystallinity %

Materials:
1. D32-08-002
2. Standard - Supplied by: Acme
3. D32-08-004 - Supplied by: Acme
4. D32-08-003 - Supplied by: Acme

Labs:

<table>
<thead>
<tr>
<th>Lab Name</th>
<th>Contact Name</th>
<th>Data Submitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albemarle Bayport</td>
<td>Mark</td>
<td>✓</td>
</tr>
<tr>
<td>Chevron</td>
<td>James</td>
<td>✓</td>
</tr>
<tr>
<td>Haldor Topsoe A/S</td>
<td>Shawn</td>
<td>✓</td>
</tr>
<tr>
<td>INEOS</td>
<td>Joe</td>
<td>✓</td>
</tr>
<tr>
<td>Lummus Technology</td>
<td>Diane</td>
<td>✓</td>
</tr>
<tr>
<td>Saint Gobain Norpro</td>
<td>Jacki</td>
<td>✓</td>
</tr>
<tr>
<td>UOP</td>
<td>Terri</td>
<td>✓</td>
</tr>
</tbody>
</table>

Distributor:
Acme

Status: Precision statement on main ballot.

Please email any missing information regarding this Interlaboratory Study to ILS@astm.org. ASTM will need all of the study information to complete the research report.
The ASTM Form and Style Manual (Section A29.1) states,
"Where numerical data have been generated to establish the precision and bias of a test method, a research report is required."

ASTM Research Report Template

The draft research report should be made available to committee members while the associated precision statement is on ballot.

Research report numbers are assigned after ballot approved.
Parts of a Research Report

- List of participating laboratories
- Description of samples with their suppliers
- A copy of the laboratory instructions
- General description of equipment/apparatus used
- All of the raw data (lab name’s hidden)
- A statistical summary
- A copy of the precision and bias statement
Research Report Numbers

A research report number will be assigned by ASTM when all of the following have been completed:

- the research report is submitted to ILS;
- it has been reviewed for completeness;
- and the ballot item to include the corresponding precision and bias statement is approved for publication.
Registering an ILS Program

http://www.astm.org
Get Involved / Technical Committees

Technical Committees

Technical Committees develop and maintain ASTM standards. They are grouped by designation according to related activities within a particular scope of work (ex: A01 on Steel, Stainless Steel and Related Alloys). ASTM Committees are made up of over 32,000 volunteers from industry and include manufacturers and consumers, as well as other interest groups such as government or academia. Any interested individual can participate on a Technical Committee through ASTM membership.

JOIN TODAY!

Search for ASTM Committees

D02 or Petroleum
SEARCH

Technical Committees by Designation - Full List

Other Programs and Services

- Honors & Awards
- Interlaboratory Study Program (ILS)
- Sustainability
- 2017 Certificate of Attendance
- 2018 Certificate of Attendance
- Contract & Project Management Services
- Resources for US Technical Advisory Groups (US TAGS)
- Symposium Proposal Form
Select: Register a New ILS Study

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MyASTM Login
Register a New Study

Interlaboratory Study Registration

Registered Studies

<table>
<thead>
<tr>
<th>ILS #</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>0375</td>
<td>Test Method for Equilibrium Moisture of Coal at 96 to 97 Percent Relative Humidity and 30C</td>
</tr>
</tbody>
</table>

Technical contact understands and agrees that the data generated as a result of this study, regardless of any further support or services provided by or to ASTM, will be used in ASTM’s business, to assist in developing a research report, consensus standard or adjunct thereto. Technical contact agrees to keep such data and results confidential and not to disclose or share the data/results with anyone else, without ASTM’s written consent. For a copy of the ASTM International’s Intellectual Property Policy click [here](#).
Interlaboratory Study Registration

**Committee**

**Sponsoring Committee**
D05 - Coal and Coke

**Sponsoring Subcommittee**
D05.21.00 - Methods of Analysis

Your ILS Number: 0375

CONTINUE
Interlaboratory Study Registration

Your ILS Number: 0375

Indicates a required field.

Does this program relate to an existing ASTM standard?

- Yes  
- No

ASTM Standard

D1412_D1412M - Test Method for Equilibrium Moisture of Coal at 96 to 97 Percent Relative Humidity and 30C

Standard Title

Test Method for Equilibrium Moisture of Coal at 96 to 97 Percent Relative Humidity and 30C

Work Item

Select One

-OR-

WK 1234

CONTINUE
Interlaboratory Study Registration

Your ILS Number: 0375

Study Coordinator

<table>
<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>James</td>
<td>Luppens</td>
<td><a href="mailto:nbaldini@astm.org">nbaldini@astm.org</a></td>
</tr>
</tbody>
</table>

* Indicates a required field.

Statistical Support

Please indicate the person who will provide statistical support for this ILS, or indicate below that assistance is required.

- [ ] ASTM to assist with statistical support.
- [ ] I will provide statistical support for this ILS.
- [ ] A committee member will provide statistical support.
- [ ] Statistical support will be provided by the following person: [ ]

CONTINUE
### Interlaboratory Study Registration

**Your ILS Number:** 0375

#### Committee → Standard → Contacts → Tests → Materials → Labs → Summary → Complete

<table>
<thead>
<tr>
<th>Tests</th>
<th>Units of Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equilibrium (In-Situ) Moisture</td>
<td>Total Moisture</td>
</tr>
</tbody>
</table>

**Tests**

- Equilibrium (In-Situ) Moisture

**Units of Measure**

- Total Moisture

**NEED HELP?**

Caitlin Farrell can help you finish your registration.

- Email: cfarrell@astm.org
- Tel: +1.610.832.9746

© ASTM International

www.astm.org // 36
### Interlaboratory Study Registration

#### Your ILS Number: 0375

<table>
<thead>
<tr>
<th>Testing Material (sample)</th>
<th>Material Supplier</th>
<th>Distributor</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO-Bituminous</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA-Bituminous</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VA-Bituminous</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MT-Subbituminous B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WY-Subbituminous I</td>
<td></td>
<td></td>
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<tr>
<td>WY-Subbituminous</td>
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<tr>
<td>MS-Lignite</td>
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</tr>
<tr>
<td>ND-Lignite</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TX-Lignite II</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Need Help?**

**Caitlin Farrell** can help you finish your registration.

email: cfarrell@astm.org
tel: +1.610.832.9746

[ADD MATERIAL]
[CONTINUE]
Materials, Supplier(s) & Distributor(s)

Interlaboratory Study Registration

Your ILS Number: 0375

Material (sample)

Material Supplier (company name)

Supplier Contact First Name

Supplier Contact Last Name

Supplier Email

☐ The distributor is the same as the supplier.

Material Distributor (company name)

Distributor Contact First Name

Distributor Contact Last Name

Distributor Email

CANCEL  SAVE
**Download Lab Information Form (Excel)**

Please fill in the Lab Information form and email it back to labs@astm.org.

**Add Labs Below**

<table>
<thead>
<tr>
<th>Laboratory</th>
<th>EDIT</th>
<th>REMOVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DONG Energy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SGS Newcastle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALS</td>
<td>Coal Division GVI</td>
<td></td>
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<tr>
<td>ALS</td>
<td>Coal Division GD</td>
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</tr>
<tr>
<td>BHP Billiton Mitsubishi Alliance</td>
<td></td>
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<tr>
<td>Standard Laboratories, Inc. CY</td>
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<td></td>
</tr>
<tr>
<td>Standard Laboratories, Inc. RW</td>
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<tr>
<td>Standard Laboratories, Inc. ES</td>
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<tr>
<td>Mineral Labs, Inc.</td>
<td></td>
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<tr>
<td>SGS North America Inc.</td>
<td></td>
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<tr>
<td>SGS Henderson KY US</td>
<td></td>
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<tr>
<td>Standard Laboratories, Inc. AS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SGS China Tianjin Energy Lab</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SGS - Tianjin China</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WY Analytical Laboratories, Inc</td>
<td></td>
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</tr>
<tr>
<td>IncoLab Services Colombia S.A.S.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BVIT Newcastle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kane</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NEED HELP?**

Caitlin Farrell can help you finish your registration.

email: cfarrell@astm.org
tel: +1 610 832 9746
## Laboratory Information Form

**ILS # Example Lab Info Form**

[Click here to email this completed lab info form to: ils@astm.org](mailto:ils@astm.org)

<table>
<thead>
<tr>
<th>Laboratory Name</th>
<th>Contact First Name</th>
<th>Contact Last Name</th>
<th>Email</th>
<th>Phone #</th>
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Registration Summary – Submit to ASTM

Interlab Study Registration

Committee
Sub Committee:

D05 - Coal and Coke
D05.21.00 - Methods of Analysis

Released Standard:

D0412_D0412M - Test Method for Equilibrium Moisture of Coal at 96 to 97 Percent Relative Humidity and 30°C

Work Item:

ILS Task: Test Method for Equilibrium Moisture of Coal at 96 to 97 Percent Relative Humidity and 30°C

Technical Contact:

First Name:

James

Last Name:

Luppen

Email:

wwilson@astm.org

Statistics Support:

ASTM to provide statistical support

Tests (in Situ) Moisture

Units of Measure:

Equilibrium Moisture

Total Moisture

Materials

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Laboratory

- DONG Energy
- SGS Newcastle
- ALS i Coal Division GV
- ALS i Coal Division GD
- BHP Billiton Mitsubishi Alliance
- Standard Laboratories, Inc. CY
- Standard Laboratories, Inc. RW
- Standard Laboratories, Inc. ES
- Mineral Labs, Inc.
- SGS North America Inc.
- SGS Henderson KY US
- Standard Laboratories, Inc. AS
- SGS China Tianjin Energy Lab
- SGS - Tianjin China
- WY Analytical Laboratories, Inc.
- Incolab Services Colombia S.A.S.
- BVIT Newcastle
- Kara

Technical contact understands and agrees that the data generated as a result of this study, regardless of any further support services provided by or to ASTM, will be used in ASTM's business, to assist in developing a research report, consensus standard or adjunct thereto. Technical contact agrees to keep such data and results confidential and not to disclose or share the data/results with anyone else, without ASTM's written consent. For a copy of the ASTM International's Intellectual Property Policy click here.
Key Takeaways

➢ In each lab, one lab technician should conduct all ILS testing

➢ Labs should follow the ASTM standard provided to them for the ILS study, completing the testing in the shortest possible period of time

➢ Full ILS- we need good usable data from a minimum of 6 labs

➢ Do not send samples to ASTM Headquarters

➢ The ILS Program is a FREE benefit for members working on ASTM Test Methods.
Questions
Contact Information

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Caitlin Farrell,
Project Manager
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Thank you for your attention!

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