Plastics Proficiency Testing

Collaborative Testing Services

TESTING QUESTIONS

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QUOTE REQUESTS & ORDER INQUIRIES

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About Us

Founded in 1971, Collaborative Testing Services (CTS) is a leading proficiency testing provider that serves the evolving quality assurance needs of several industries with innovative interlaboratory proficiency testing. With worldwide clients in both the public and private sectors, we aim to create and administer sustainable and meaningful testing schemes in both our industry and forensic programs.

CTS is ANAB-accredited to ISO/IEC 17043. Certificate Number: AP-1884.

Our Testing Process

In keeping with the principles of quality assurance, we use a prepaid subscription model where testing is conducted on a quarterly schedule to ensure that proficiency testing is a streamlined and consistent process for your laboratory:

- Purchase your testing, noting the type of samples offered, frequency of testing, and other conditions.

- Receive your samples, test at your convenience, and submit your results through our full-service customer portal before the data due date (six weeks after samples ship).

- Receive your in-depth, individualized Performance Analysis Report just three weeks after the data due date, which uses bimodal consensus statistics to provide you with insight on what is actionable, what is diagnostic, and what is predictive.

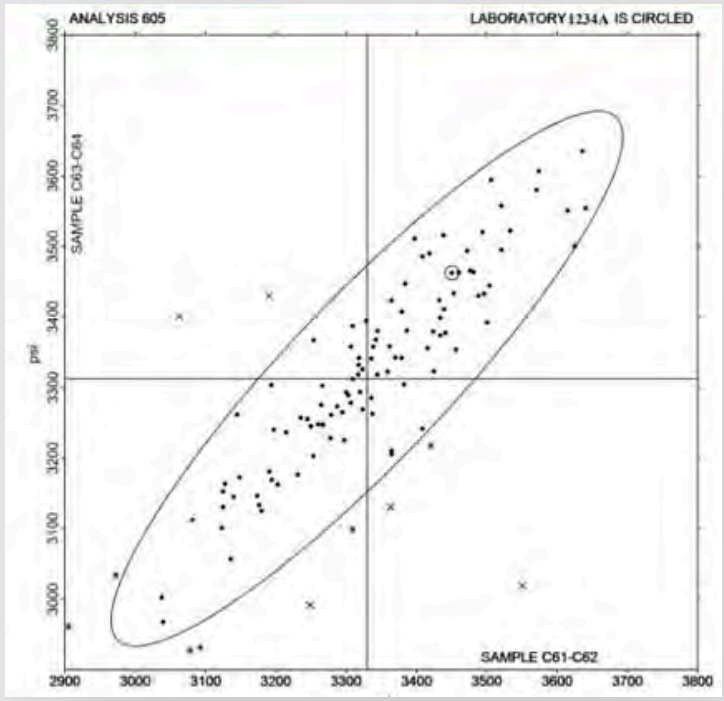
Our Reports

Our reports are generated through a comprehensive analysis by our technical staff, with several features designed to provide data that is both insightful and easy to navigate.

- Trend charts visually present your historical performance over time, where continuous and consistent enrollment reaps the most benefits.

- Data tables provide a Comparative Performance Value (CPV), a ratio that represents how well your laboratory's results agree with the other participants. Our graphs provide this information in a visual format to pinpoint your lab's performance.

- Data flags and comments can be used to predict or diagnose potential issues before they escalate.



Plastics Program Schedule

We offer full-year, three-quarter, and half-year testing options for participation in our plastics program, depending on when you enroll.

- November 15th: includes all four test cycles for the year, with shipments in January, April, July, and October—a great option for labs looking to maximize value and observe trends over time.

- February 15th: includes three test cycles for the year, with shipments in April, July, and October.

- May 15th: includes two test cycles for the year, with shipments in July and October.

Enroll By:	Testing In:	Samples Ship:	Data Due Date:	Reports Issued:
November 15th of prior year	Q1–Q4	• January • April • July • October	• February • May • August • November	• March • June • September • December
February 15th of current year	Q2–Q4	• April • July • October	• May • August • November	• June • September • December
May 15th of current year	Q3–Q4	• July • October	• August • November	• September • December

Test Listings and Methods

Test 704: Tensile Properties of Rigid Plastics

Participants will report on any or all of the following properties: tensile stress at yield, tensile stress at break, percent elongation at yield, and modulus of elasticity.

Each test shipment includes two sets of seven injection-molded Type 1 tensile bars. CTS chooses different polymers for each cycle of testing.

Test Methods: ASTM D638.

Test 710: Deflection Temperature Under Flexural Load at 1.82 MPa (264 psi)

Participants will take measurements using a stress load of 1.82 MPa (264 psi).

Each test shipment includes two sets of five injection-molded ASTM Flex Bars (5" by 1/2" by 1/8"). CTS chooses between three different polymers for each cycle of testing.

Test Methods: ASTM D648.

Test Listings and Methods (cont.)

Test 711: Deflection Temperature Under Flexural Load at 0.455 MPa (66 psi)

Participants will take measurements using a stress load of 0.455 MPa (66 psi).

Each test shipment includes two sets of five injection-molded ASTM Flex Bars (5" by 1/2" by 1/8") made from two slightly different polypropylene polymers.

Test Methods: ASTM D648.

Test 712: Temperature of Deflection Under Load 1.80 MPa

Participants will test samples in the flatwise position and take measurements using a stress load of 1.80 MPa.

Each test shipment includes two sets of five injection-molded ISO Type 1A bars (4 mm by 10 mm by 170 mm). CTS chooses between three different polymers for each cycle of testing.

Test Methods: ISO 75, Method Af.

Test 715: Vicat Softening Temperature (Rate A & B), 10N Load

Participants test samples using two different heating rates specified by CTS and a load of 10N.

Each test shipment includes four sets of four injection-molded ASTM Flex Bars (5" by 1/2" by 1/8"). CTS chooses between three different polymers for each cycle of testing. Two sets are tested for each heating rate.

Test Methods: ASTM D1525.

Test 718: Specific Gravity

Participants test samples using their choice of the listed methods.

Each test shipment includes two sets of four injection-molded bars. CTS may send ASTM Flex Bars or Tensile Type 1 bars, since both can be cut to size for individual laboratory needs. CTS chooses different polymers for each cycle of testing.

Test Methods: ASTM D792, ASTM D1505, ISO 1183.

Test Listings and Methods (cont.)

Test 720: Flexural Properties

Participants will test samples at a speed of 0.5"/minute with a support span of 2", then report on any or all of the following properties: flexural modulus (tangent), flexural stress at 5% strain, and flex stress at yield.

Each test shipment includes two sets of six injection-molded ASTM Flex Bars (5" by 1/2" by 1/8"). CTS chooses between three different polymers for each cycle of testing.

Test Methods: ASTM D790, Procedure A.

Test 730: Tensile Properties

Participants will report on any or all of the following properties: tensile stress at yield, tensile stress at break, percent elongation at yield, and modulus of elasticity.

Each test shipment includes two sets of fourteen injection-molded ISO Type 1A bars (4 mm by 10 mm by 170 mm). CTS chooses different polymers for each cycle of testing.

Test Methods: ISO 527.

Test 736: Flexural Properties

Participants will test samples at a speed of 2 mm/minute and a support span of 64 mm, then report on any or all of the following properties: flex modulus (chord), flexural stress at 3.5% strain, and flexural stress at yield.

Each test shipment includes two sets of six injection-molded ISO Type 1A bars (4 mm by 10 mm by 170 mm). CTS chooses betweeen three different polymers for each cycle of testing.

Test Methods: ISO 178.

Test 750: Flow Rates of Thermoplastics by Extrusion Plastometer

Participants will test samples using a load of 2.16 kg and one of two temperatures specified by CTS (190°C or 230°C). Testing temperatures alternate between each cycle of testing.

Each test shipment includes two sealed moisture barrier bags, each containing 36 g of polymer. Enough material is supplied for labs to perform more than two test runs.

Test Methods: ISO 1133 (Procedures A and B), ASTM D1238.

Test Listings and Methods (cont.)

Test 755: Moisture Content of Plastics

Participants will test samples using their choice of the listed methods, then report a maximum of three readings per sample. Less than three readings may be reported in accordance with a laboratory's standard procedures.

Each test shipment includes two sealed moisture barrier bags, each containing 60 g of polymer, which may come from the same batch or different batches.

Test Methods: ASTM D6869, ASTM 6980, ASTM D7191, ISO 15512 (Method B).

Test 757: Ash Content in Thermoplastics

Participants will test samples with the assumption that all samples will exceed 10% ash content.

Each test shipment includes two sealed moisture barrier bags, each containing 15 g of glass-filled polymer, which may come from the same batch or different batches. Enough material is supplied for labs to complete at least two measurements, and any additional material may be used for procedure setup and additional testing.

Test Methods: ASTM D5630.

Test 758: Thermogravimetric Analysis (TGA) of Thermoplastics

Participants will test samples using their choice of the listed methods.

Each test shipment includes two sealed moisture barrier bags, each containing 10 g of glass-filled polymer, which may come from the same batch or different batches. Enough material is supplied for labs to perform at least three test runs.

Test Methods: ASTM D3850, ISO 11358-1.

Test 760: Differential Scanning Calorimetry (DSC) of Thermoplastics

Participants will test samples with a heating rate of 20°C/minute. Laboratories may report any or all of the following properties, as well as optional research properties for ASTM D3418: crystallization temperature (Tc), melt temperature (Tm), enthalpy of fusion (Hm), and enthalpy of crystallization (Hc), and transition temperature (Tg).

Each test shipment includes two sealed moisture barrier bags, each containing 15 g of glass-filled polymer, which may come from the same batch or different batches.

Test Methods: ASTM D5630.

Test 770: Tensile Properties of Thin Plastic Films

Participants will cut and test samples, then report on any or all of the following properties: tensile stress at yield, tensile stress at break, percent elongation at yield, percent elongation at break, and secant modulus at 1%/2% strain. Participants are also asked to report thickness of film tensile specimens.

Each test shipment includes two sets of seven sheets of slightly different polyethylene film. CTS designates different parameters for modulus testing; enough material is provided to cut separate specimens for laboratories that choose to report these properties.

Test Methods: ASTM D882.

Test 780: Differential Scanning Calorimetry (DSC) of Thermoplastics

Participants will cut and test samples, then report data for static friction, kinetic friction, or both. Testing is conducted using a 200 g sled with a sled/plane speed of 150 mm/minute, and friction measurements are taken with the specimen sliding on itself in the machine direction.

Each test shipment includes two sets of seven sheets of slightly different polyethylene film.

Test Methods: ASTM D1894.

Test Listings and Methods (cont.)

Test 782: Tear Resistance of Thin Plastic Films

Participants will cut and test samples. Testing parameters are set for constant radius specimens using one ply that is torn in the machine direction, and pendulums should be chosen so that the scale reading is between 20–60% of the full scale.

Each test shipment includes two sets of seven sheets of slightly different polyethylene film.

Test Methods: ASTM D1922.

Test 785: Optical Properties of Films (Haze and Total Transmittance)

Participants will test samples, then report on haze, transparency, or both.

Each test shipment includes two sets of six sheets of slightly different polyethylene film. The films are nominally colorless and transparent.

Test Methods: ASTM D1003.

Test Listings and Methods (cont.)

Test 790: Notched Izod Impact

Participants will notch and test samples.

Each test shipment includes two sets of seven injection-molded ASTM Flex Bars (5" by 1/2" by 1/8"). CTS chooses between three different polymers for each cycle of testing.

Test Methods: ASTM D256.

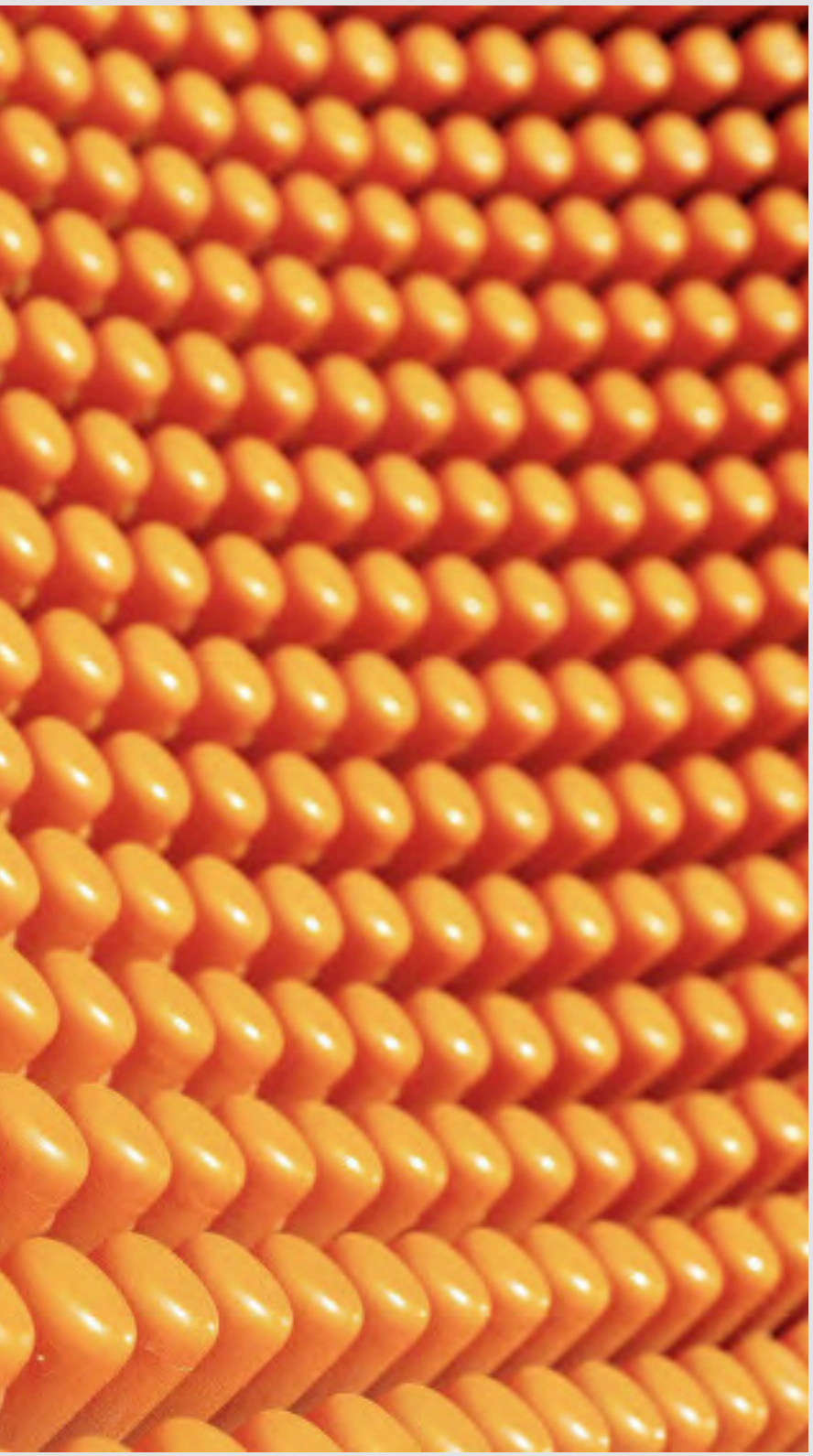
Test 791: Notched Izod Impact

Participants will notch and test samples using notch type A.

Each test shipment includes two sets of seven injection-molded ISO Type 1A bars (4 mm by 10 mm by 170 mm). CTS chooses between three different polymers for each cycle of testing.

Test Methods: ISO 180/A.

Test Listings and Methods (cont.)



Test 792:
Notched Charpy Impact

Participants will notch and test samples using notch type A.

Each test shipment includes two sets of seven injection-molded ISO Type 1A bars (4 mm by 10 mm by 170 mm). CTS chooses between three different polymers for each cycle of testing.

Test Methods: ISO 179.

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