

# Introducing to Air Products

## High Temperature & Absolute Mass Gel Permeation Chromatography

Intertek ASA in Allentown, PA has recently expanded their polymer testing capabilities. End-use performance (such as strength) and in-process properties (melt viscosity) for polymers and plastics are driven by a variety of fundamental properties including chemical structure and molecular weight. Key industrial polymers such as polyethylene, polypropylene, rubbers and others can be challenging to determine molecular weight due to their limited solubility using standard GPC configurations.





Intertek ASA has expanded capabilities with a new High Temperature GPC (HT-GPC) instrument, providing critical molecular weight information on a wider class of materials of interest to the Air Products and Chemicals' Industries.

### High Temperature GPC (HT-GPC)

HT-GPC allows the measurement of average molecular weights and molecular weight distributions for polymers that will not dissolve in GPC solvents at conventional temperatures. The GPC system is held at elevated temperature to ensure no part of the sample can re-precipitate before or during analysis leading to erroneous results.

Key attributes include:

- Run temperatures up to 220C to ensure solubility of polymer during testing,
- Ability to use aggressive trichlorobenzene solvent for difficult to dissolve materials.

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### Additional Solutions

The instrument will further expand our suite of detectors to include MALLS (multi-angle laser light scattering) and viscosity detection for either elevated or standard operating conditions. The benefits include absolute mass determination and important polymer branching information as well.

The new HT-GPC will find utility in new product development, applications testing, and troubleshooting for new and existing products. Air Products areas which are expected to benefit are in membranes, waterborne epoxies, and personal care.

These new capabilities expand an already extensive GPC offering including a wide suite of detectors, solvents and molecular weight ranges available at Intertek ASA.

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### The Intertek ASA Advantage

Intertek ASA scientists provide advanced analytical tools and expertise for materials analysis and R&D. The laboratory supports a wide range of industries and markets including electronics, construction materials, industrial gases and more. Intertek ASA scientists have years of industry experience, supporting client research, development and production projects. Intertek ASA helps customers improve and enhance discovery, prototype, scale-up, trouble-shooting and process monitoring activities. Integrated problem-solving is an important client benefit due to the breadth of tools and experience the laboratory has available.

Intertek is a leading provider of quality and safety solutions serving a wide range of industries around the world. From auditing and inspection, to testing, quality assurance and certification, Intertek people are dedicated to adding value to customers' products and processes, supporting their success in the global marketplace. Intertek has the expertise, resources and global reach to support its customers through its network of more than 1,000 laboratories and offices and 30,000 people in over 100 countries around the world.

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