



# Polymer and Materials Testing and Investigations

**Powertech's polymer and materials testing lab offers over 20 years of experience in non-metallic materials testing and services for OEM clients, utilities, oil & gas, and transportation industries. The polymer and materials lab provides physical and chemical characterization and failure analysis of plastics, elastomers, composites, resins, coatings, additives, and fillers according to standard testing procedures (ISO and ASTM) or custom developed/developed methods according to client requirements.**

## **Polymeric/non-metallic materials physical characterization**

Powertech's polymer and materials lab offers physical characterization and quality control testing for all stages of development employing a wide range of modern equipment and facilities. Our technical experts can provide clients with insight on failure analysis and guidance on material property improvement. Powertech's polymer and materials physical characterization facilities include, but are not limited to:

- Mechanical testing (ambient or elevated/reduced temperature): tensile, compressive, flexural, and shear properties
- Thermal testing: Differential Scanning Calorimetry (DSC), Dynamic Mechanical Analysis (DMA/DMTA), Thermomechanical Analysis (TMA), Thermogravimetric Analysis (TGA), and Thermal Conductivity and Resistivity
- Flammability testing
- Optical and physical testing: optical microscopy, color analysis, hardness, density, and scratch resistance
- Melt Flow Rate/Index

Test results are provided in comprehensive reports including testing parameters, uncertainty measurements (if required), photographs (before and after the test), and data analysis. Test witnessing can be accommodated upon request.

## **FOR MORE INFORMATION CONTACT:**

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## **Polymers, resins, additives, and filler chemical characterization**

In addition to analyzing the physical and mechanical properties of materials, Powertech's polymer and materials lab offers accelerated aging facilities, as well as, spectroscopic and chromatographic testing to chemically analyze polymers, resins, additives, and fillers. Powertech's polymer and materials aging and chemical characterization facilities include:

- Simulated weathering and aging: liquid and gas accelerated aging, UVA, UVB, temperature, humidity, and salt-fog exposure
- Spectroscopy: Ultra-Violet/Visible (UV/VIS), Fourier-Transform Infrared (FTIR), Inductively Coupled Plasma Optical Emission Spectroscopy (ICP-OES)
- Chromatography: High-Performance Liquid Chromatography (HPLC), Gas Chromatography - Mass Spectrometry (GC-MS), Gas Chromatography - Flame Ionization Detector (GC-FID), Gas Chromatography - Electron Capture Detector (GC-ECD)

## **ABOUT POWERTECH LABS:**

*Powertech Labs Inc. is one of the largest testing and research laboratories in North America, situated in beautiful British Columbia, Canada. Our 11-acre facility offers 15 different testing labs for a one-stop-shop approach to managing electrical utilities, and testing gas components, pressure vessels and systems.*

*Outside of the utilities industry, Powertech provides routine testing capabilities, product development, research and consulting services to support an array of industrial-type operations, electrical equipment manufacturers and automotive original equipment manufacturers.*

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