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The M&P Lab

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CURRENT FUELS and LUBRICANTS ANALYSES OFFERED by THE M&P LAB

ANALYSES OF FUELS	METHOD	SAMPLE SIZE
Ash Content	ASTM D482	250 mL
Carbon:Hydrogen ratio	Lab procedure	15 mL
Carbon residue: Ramsbottom	ASTM D524	50 mL
Conradson	ASTM D189	150 mL
Cloud point	ASTM D2500	50 mL
Distillation curve	ASTM D86	300 mL
Flash point or fire point: Cleveland Open Cup	ASTM D92	200 mL
Pensky-Martens Closed Tester	ASTM D93	200 mL
Tag Closed Tester	ASTM D56	200 mL
Neutralization number	ASTM D974	100 mL
Nitrogen content	ASTM D3228 (Kjeldahl)	25 mL
Percent water in petroleum products Karl Fischer method	ASTM D1744	100 mL
Distillation method	ASTM D95	100 mL
Pour point	ASTM D97	100 mL
Specific gravity at 60 °F (API)	ASTM D287	75 mL
Specific gravity at 60 °F, 100 °F, 210 °F	ASTM D1298	75 mL
Sulfur content	ASTM D129	50 mL
Viscosity, Kinematic at 100 °F, 210 °F, 40 °C, 100 °C	ASTM D445	50 mL
Water and sediment content	ASTM D1796	150 mL
Water separability (Demulsibility) at 54 °C	ASTM D1401	100 mL
Trace Metal Analysis	Several	50 mL
Analyses Of Greases		
Ash content	ASTM D482	250 mL
Cone penetration (worked or unworked) Full scale	ASTM D217	1500 grams
¼ scale (if sample quantity is limited)	ASTM D1403	30 grams
Dropping point	ASTM D2265	15 grams
Analyses of Petroleum		
Wax melting point	ASTM D127 Thermal analysis	15 grams 15 grams

Note: The sample sizes indicated are three times the amounts actually needed to perform the analyses; we request the excess material in case duplicate analyses are needed.

CAPABILITIES

The M&P Lab analyzes materials to determine composition, structure, and properties.

MATERIALS

- Composites
- Metals
- Organics
- Plastics and Rubber
- Liquids

PROPERTIES

- Chemical
- Electrical
- Mechanical
- Microstructural
- Thermal

PURPOSES

- Failure Analysis
- Performance Prediction
- Process Control
- Quality Assurance
- Research and Development

METHODS

- Chemical Analysis
- Chromatography, Ion
- Combustion Products Analyses
- Electrical Tests
- Image Analysis
- Laminate and Circuit Board Tests
- Mechanical Tests
- Metallography: Lab and Field
- Microscopy, Light
- Microscopy, Electron (SEM)
- Microprobe
- Oil and Grease Testing
- Organics and Polymers Testing
- Photomacrography
- Spectroscopy, Atomic Absorption
- Spectroscopy, DC Arc Emission
- Spectroscopy, Infrared Absorption (FTIR), FTIR Microscopy
- Spectroscopy, Plasma Emission
- Steeloscope Analysis
- Thermal Analysis:
DSC, HTDTA, TGA, TMA
Please ask us about additional methods available

Contacts

Chemical Analysis: *Warren W. Hoffman*
Thermal Analysis: *Jan M. Principe*
Plastics and Rubber: *Warren W. Hoffman*
Creep and Rupture Testing: *James E. Cox*
Electron Microscopy: *Robert Matteson, Jr.*
Mechanical Testing: *Robert F. Kraus, Ph.D.*
Metallography: *Stephen J. Forsthoffer*
Metallurgy: *David A. Behnke*
Microprobe: *Joseph Foroughi*
Electrical Testing: *Robert F. Kraus, Ph.D.*
Corrosion: *Uriel M. Oko, Ph.D., P.E.*
Failure Analysis: *Dale L. Purvis*

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Appendix B**

"The Mission of The M&P Lab is to become world renowned as the best materials evaluation laboratory. We will accomplish this mission by providing complete laboratory services to our clients, while exceeding their expectations for quality, turnaround time, and price."