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Technical note

## High-Performance Liquid Chromatography (HPLC)

Thermo Scientific™ Vanquish Core HPLC system

### High Performance Liquid Chromatography (HPLC)

is used for the analysis of non-volatile or thermally stable compounds. HPLC can include many of the same analytes as Gas Chromatography (GC), but with less resolution as compared to capillary column GC. Limitation on analysis by GC is analyzing volatile below 300 °C with less molecular weights. HPLC greatly expands the range of possible analytes for non-volatile, larger molecular weights, or thermal unstable. Its advantages include versatility, sensitivity, and applicability to very complex mixtures.



### Key Features

- Low-pressure Quaternary pump solvent blending or isocratic flow delivery
- Maximum pressure up to 700 bar, flow range 0-10 mL/min.
- Variable wavelength UV Detector wavelength range 190-750 nm with  $\pm 1$  nm wavelength accuracy
- SmartInject technology for maximum injection precision and improved column lifetime

### Services

The HPLC is a technique for either quantitative or qualitative analysis. HPLC can be used for applications for example water purification, drug or pharmaceutical analysis, or failure analysis. At ALS Pathumthani we majority apply HPLC for these two applications.

- Analysis for Weak Organic Acids (WOA) for Electronics part per IPC TM 650: We are able to quantify and qualify for Acetate, Adipate, Formate, Glutamate, Malate, Succinate, and Phthalate.
- Analysis of organic emissions of non-metallic materials for Automotive per VDA 278: We apply our HPLC for trace of Formaldehyde, Acetaldehyde, Acetone, Acrolein, Propanal, Crotonaldehyde, Methyl ethyl ketone, Butanal, Benzaldehyde and Pentanal.

Besides these two applications, we are ready to adapt our sample preparation technique to analysis for Indoor air quality as required by ISO 16000-40:2019.

### ABOUT ALS

With more than a decade of sophisticated testing experience, ALS Pathumthani has a diverse range of sampling, testing, and consulting services for the Electronics industry. We have dedicated technical staff to deliver reliable and timely analytical solutions for customer testing needs. We specialize in micro-contaminant and RoHS analysis, offering tailored analytical

packages that are specific to client requirements and needs. We are ready to deploy our world-class services to additional industries to support Thailand's industry growth. ALS provides the wide range of professional services for Electronics, Semi Conductor, Automotive, Telecommunication, and Wear-Check analysis (Tribology).

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