



PEAKEXPERT

High-Performance Polymers and Additives Characterization



Polymers, Biopolymers and Additives Characterization Services to Industries and R&D

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High-Performance Polymers and Additives Characterization

ANALYSIS LABORATORY

DEDICATED TO POLYMERS,
BIOPOLYMERS AND ADDITIVES



PEAKEXPERT offers solutions to all customers involved in production, R&D, processing and polymer materials applications. The main advantages of **PEAKEXPERT** are :

- 10 years of industrial know-how in the analysis of polymers and additives
- Use of state of the art instrumentation
- A scientific and industrial partners network
- A quality and reactivity guarantee
- Confidentiality

► **DEGRADATION
& STABILIZATION**

► **CHROMATOGRAPHY
ANALYSIS**

► **COMPETITOR MONITORING
& DEFORMULATION**

► **ADDITIVES**

DEGRADATION & STABILIZATION

PREMATURE FAILURE EXPERTISE, AGEING COMPREHENSION.

A premature failure and a yellowing of a formulation are some typical commercial issues for all industries involved in polymer use.

PEAKEXPERT offers a specific consulting service to solve these problems.

For demanding applications with complex ageing, **PEAKEXPERT** assists you to understand the degradation and the stabilization of your formulations.

PEAKEXPERT has extensive experience on polyamides PA and polyphthalamides PPA, and provides trainings on polymer stabilization.

CHROMATOGRAPHY ANALYSIS

MOLAR MASS AVERAGES AND DISTRIBUTION, CHEMICAL COMPOSITION DISTRIBUTIONS, VISCOSITY, OLIGOMERS, REACH, FDA.

Mechanical properties of polymer materials are closely related to molar mass and to chemical composition. Several chromatography modes with adequate coupling give structural and composition information. Size-Exclusion Chromatography (or GPC/SEC) of high-performance polymers is the specialty of **PEAKEXPERT**.

- Mn, Mw and Mz averages
- Molar mass distribution – MWD
- Chemical composition distribution - CCD
- Degradation study and products comparison
- REACH and FDA calculations
- Absolute molar masses
- Oligomers and functionality
- Viscosity and branching
- Raw materials fingerprint
- Quality Control

HIGH-PERFORMANCE POLYMERS PEAKEXPERT SPECIALITIES

PEEK, PAEK, PPA, PARA, LCP, PPS, PEI, PI, PAI

TECHNICAL POLYMERS

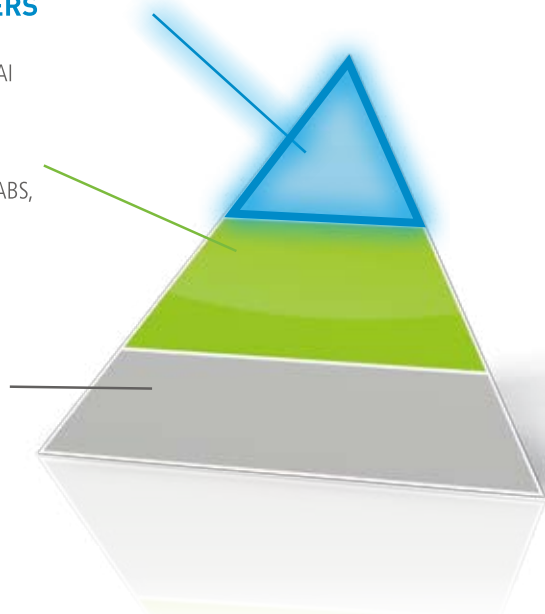
PA, POM, PET, PBT, PMMA, UHMPE, ABS, SAN, PC, PVDF, Epoxy, PU

BIOPOLYMERS

PLA, PHA, PHB, PBS, STARCHES

COMMODITY POLYMERS

HDPE, LDPE, PP, PS, PVC



COMPETITOR MONITORING & DEFORMULATION

IDENTIFICATION OF POLYMER, IMPACT MODIFIER, UV STABILIZERS, ANTIOXIDANTS, SLIP ADDITIVES, WAXES AND OTHERS.

Deformulation (or Reversed Engineering) combines a variety of techniques such as extraction, separation, identification and quantification of individual components to build up the polymer formulation. Initial discussion with the client helps to determine the most effective analytical methods.

ADDITIVES

RAW MATERIAL QUALITY, QUANTIFICATION OF UV STABILIZERS AND VARIOUS ADDITIVES

Additives are essential to process polymers and to assure their end-use properties. Quantification of numerous additives is available from **PEAKEXPERT** services. **PEAKEXPERT** assists you to implement a new method in your laboratory or reviewing any existing method.

- UV stabilizers
- Antioxidants
- Plasticizers
- Slip additives and waxes
- Flame retardants
- Fillers
- Impact modifiers
- Functional grafting agents

PEAKEXPERT is equipped with state of the art instrumentation specializing in liquid chromatography and hyphenated techniques.

GPC

GEL PERMEATION CHROMATOGRAPHY

SEC

SIZE-EXCLUSION CHROMATOGRAPHY

- **Mn, Mw et Mz molar masses**
- **Molar mass distribution**
- **Polydispersity**
- **Viscosity**
- **Branching**
- **Copolymers**
- **Absolute masses**
- **REACH and FDA calculations.**

Solvents THF, HFIP, DMSO, DMF, TCB, toluene, chloroform and others

Coupling with Light Scattering
MALS, viscosimetry, UV, FTIR, NMR, MALDI-TOF, DEDL, fraction collection

HPLC

HIGH PERFORMANCE LIQUID CHROMATOGRAPHY

Identification and quantification of additives

Separation on normal and reversed phases

Detections UV, diode array, fluorescence, ESLD, chemical derivatization, FTIR, NMR, ESI-MS/MS, MALDI-TOF, fraction collection

2D/3D

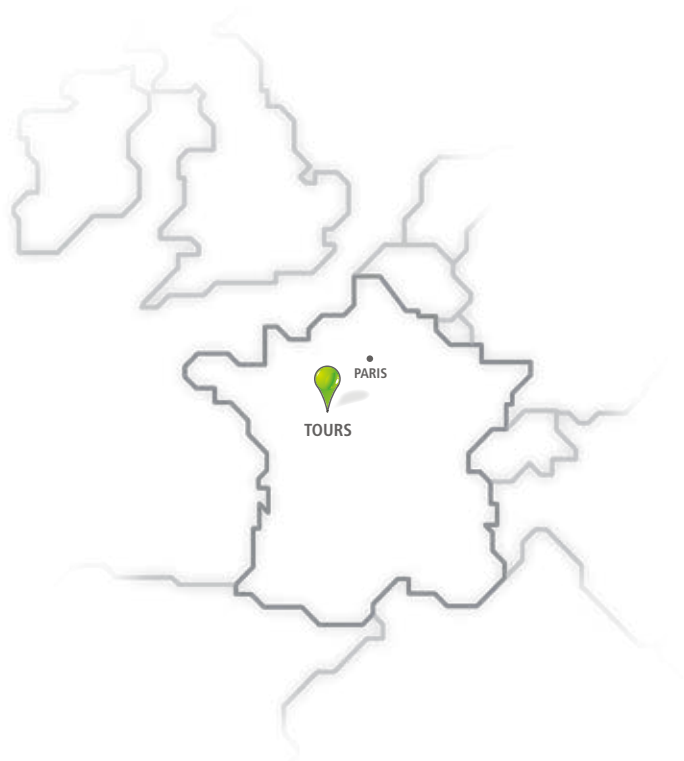
ORTHOGONAL CHROMATOGRAPHY

Complex (co-)polymers and additives fractionation

GPEC

GRADIENT POLYMER ELUTION CHROMATOGRAPHY

Chemical composition distribution of (co-)polymers, blends, paints



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