

Instrumental Laboratory Factory of Piobesi T.se

- DSC (differential scanning calorimeter)

PYRIS1 (Perkin Elmer); Temperature from -60°C

The differential calorimetry measures the difference of heat flow between a sample and a reference in function of the temperature, while the sample is subjected to a controlled program of temperature.

Applications:

- melting point
- glass transitions
- crystallization
- purity
- characteristic temperatures
- thermal stability
- heat (enthalpy) of fusion/ reaction
- polymorphism

Accredited test methods:

- Melting point for matrix polyethylenic wax with internal method MET001
- Melting point for matrix ethylvinylacetate (EVA) bags with internal method MET 006
- Melting point for matrix N-cicloesyl-2-benzothiazolsulfonamide (CBS) with internal method MET 009
- Melting point for matrix bis-dimethylcarbammoil-disulphide (TMTD) with internal method MET 010
- Melting point for matrix N-(1,3-dimethylbutyl)-N'-phenyl-p-phenylendiammine with internal method MET 013
- Melting point for matrix fat acids salts with internal method MET 014

- TGA (thermogravimetric balance)

PYRIS 1 (Perkin Elmer)

The thermogravimetry allows to define the mass variation (weight) of a sample subjecting it to a controlled program of temperature.

Applications:

- characterization of rubber mixtures: %polymers, % inorganic charges, dry residual
- quantitative analyses
- characteristic decomposition temperatures
- composition: % of humidity, % solvents/additives contained
- oxidation

Accredited test methods:

- Per cent composition for matrix rubber mixture with internal method MET 002

- F.T.I.R. (infrared spectrophotometer)

SPECTRUM GX FT-IR SYSTEM (Perkin Elmer)

AUTOIMAGE SYSTEM (Perkin Elmer)

The infrared spectroscopy is based on the characterization of the functional groups present in molecules and it allows us to collect information finalized to the acknowledgment of the substances.

Applications:

- recording infrared spectrums on liquid, solid and powder samples
- direct comparison of spectrums I.R.
- quantitative definition
- qualitative definitions
- microspectrophotometry

- TG-I.R.

TG-IR INTERFACE (Perkin Elmer)

The TG-IR interface allows to an instantaneous spectrophotometric definition of the products coming from the thermal decomposition of the material.

- GC-MS (Perkin Elmer)

AUTOSYSTEM XL Gas Chromatograph, TURBOMASS Mass Spectrometer (Perkin Elmer)

ATD 400 – Automatic Thermal Desorption System (Perkin Elmer)
Gas chromatograph interfaced to the mass spectrometer

Applications:

- qualitative and quantitative definition of the volatile components of one complex mixture through separation of analytes by gas chromatography and analysis by mass spectrometry
- analysis of samples adsorbed on inert solid support by gas chromatography
- analysis of volatile powders/substances present in the job atmosphere collected with active or passive sampling

- Volumetric Titrator Karl Fisher

DL31 (Mettler Toledo)

Applications:

- % of humidity definition on solid and liquid samples

- Softening Point (ASTM D6090-97)

FP90 Central Processor, FP83HT Dropping point Cell (Mettler Toledo)

Applications:

- softening point definition on resins, bitumens...
- dropping point definition on alimentary matrices

Accredited test methods:

- Softening point for matrix 1,2-dihydro-2,2,4-trimethylcholine (TMQ) with internal method MET 011
- Softening point for matrix alkylphenol-formaldehyde resin with internal method MET 012

- Sulphur and Carbon Analyser

SC-144 DR (LECO)

Simultaneous definition of sulphur and carbon in organic matrices by combustion and following infrared survey.

- Laser microgranulometer (in accordance with ISO13320)

MASTERSIZER MICRO (Malvern)

Interval of measure: 0.3 ÷ 300 µm

Applications:

- analysis of emulsions/suspensions
- powders

Accredited test methods:

- Fineness for matrix silica with internal method MET 007

- Viscosimeter

DV-E VISCOMETER BROOKFIELD (Brookfield)

Applications:

- viscosity definition

Accredited test methods:

- Viscosity for matrix melamine-formaldehyde resin with internal method MET 016

- pH-meter

MP225 (Mettler Toledo)

Applications:

- pH-meter definition

- Refractometer

PAL RI (Atago)

Interval of measure: 1.336 ÷ 1.5284

Applications:

- refractive index