SSS3-FR

Compact detector of fire-retardants and PVC

Technology by **IoSys** – Europe's Leading Specialist for Plastic Detection

GUT
Environmental Technologies

High level material plastic recycling demands that plastic materials must be sorted according to their chemical groups and free of harmful substances. A special sliding spark spectrometer version for the identification of halogen-containing plastics and PVC therefore is now available. It will help to make further amounts of waste polymers available for re-use.

With the special technique „sliding spark spectrometry" now an interesting tool for fast plastic identification exists. It enables direct analysis of solid, non-conductive parts of household, engineering electronics and automotive waste plastics and other materials.

Dust, dirt or paints covering the sample surface and disturbing the measurement can be easily removed by scratching with a knife.

The measuring principle of the method is the thermal vaporization of a small amount of the plastic surface using a series of defined high-current sliding sparks. The material components in the spark plasma are vaporized, atomized and activated to emit radiation.

For plastic identification the sparking head is simply pressed on to the analysis sample. The measurement begins by pressing the start button on the pistol grip. After one second an integrated LCD displays the result. Furthermore the result can be shown on an external VGA screen.

The measuring head is equipped with a conductivity metal detector and a cable of about 80 cm length connecting to the instrument. The portable device includes the optical system, the spark generator and a computer, which controls and evaluates the identification process.
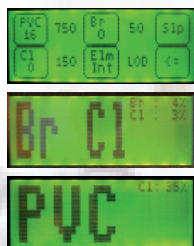
Parameter input and spectra views can be set by using the integrated LCD-touchscreen. Additional connections like an external keyboard and a serial interface allow data transfer.

Halogen detection is effected by the characteristic emission of Chlorine and Bromine in the optical spectrum. The intensities of these spectral lines are compared with preset threshold values. These elements are regarded as detected if the pre-set threshold values for PVC, Chlorine and Bromine are exceeded. After calibration with known analyzed halogen containing samples, the system enables semi-quantitative measurement down to the concentration range of about 1 or 0,1%.

The identification of PVC is possible by high concentrations of Chlorine measured.
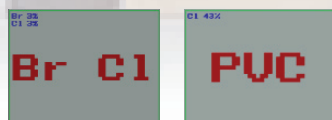
The portable sliding spark spectrometer allows the following samples to be analyzed within 1 second and independently of colour:

- Identification of PVC
- Detection of halogenated flame-retardants
- Identification of Cl-containing surface layers
- Detection of Cl-containing multilayers

Technical Data:

- Dimensions:	260 x 150 x 160 mm
- Weight:	4 kg
- Power Supply:	100 - 230 VAC, 50/60 Hz

Optional Accessories:
- External VGA-screen for bigger display of the results

Specifics of this unit:
- For RPF (Refuse Paper and Plastic Fuel)
- Identification of plastics from household- and electronics waste
- On site analysis, e.g. in a dismantling area
- 1 sec. measuring time
- Identification of PVC
- Detection of Bromine- and Chlorine containing fire retardants and surface layers

Customers can arrange to have the system calibrated using their own samples or to detect other significant elements (e.g. Lead or Fluorine).