

Produktnote M153 - 01/15

Polymer Identification (PID)



The polymer identification system was specifically designed for quick identification of large plastic parts without any sample preparation. With the intuitive user interface (figure 1) even untrained operators can perform routine measurements like for instance the sorting of recycling plastic parts. In combination with the internal identification-method, reliable results can be obtained in about five seconds per sample. The measurements are performed in reflection with an ALPHA FT-IR spectrometer with front reflection sampling module (Fig. 2). The sample only needs to be put on the sampling cap and no sample preparation is required.

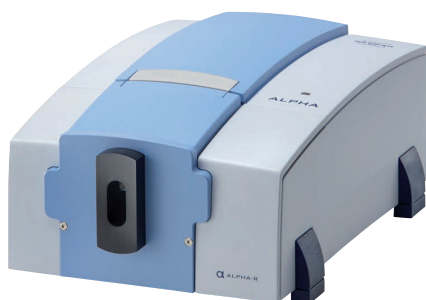


Figure 2: ALPHA FT-IR spectrometer with front reflection module.

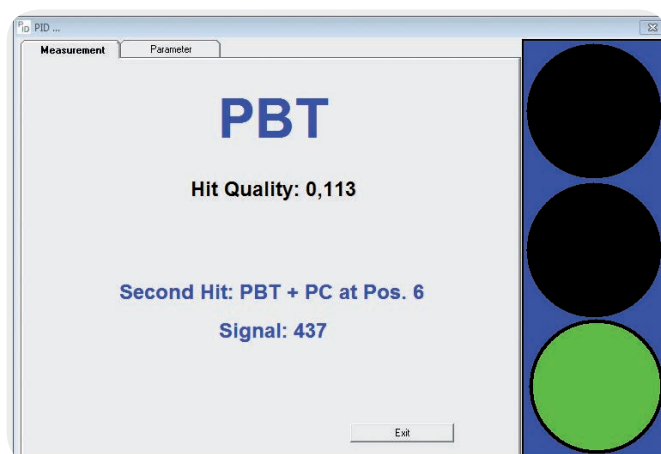


Figure 1: PID measurement interface showing the result of a measurement.

The measurement process can be started by a simple mouse click or runs in continuous mode. A traffic light shows the status of the measurement and permanently informs the user about the current program status. After the completion of the measurement, the plastic type is determined by the internal identification method.

This method is based on reflectance spectra of technical thermoplastics that are typically used for the production of cars, computers and electric devices . It contains 160 reference samples from 30 polymer classes that are listed in table 1.

Figure 3 shows example spectra of the polymers polyamide 6.6 (red), polypropylene-EPDM (blue) and polybutylene terephthalate (magenta).

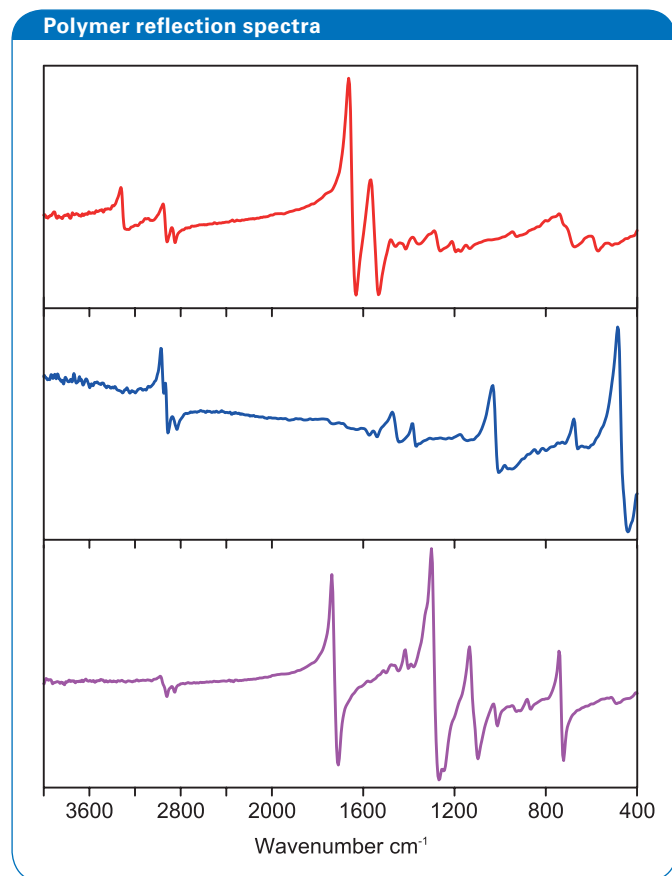


Figure 3: Example spectra measured with the ALPHA in reflection. Measurement time 5 seconds.

Table 1: Polymer classes in the library

ABS	Polyester
ASA	PP/EPDM
PC+ABS	EPDM
PC+PBT	PE
PBT+PC	SMC
PBT	PMMA
PET	PPE+SB
PC	PPE+PPO
SAN	PPE+PA
PA 6	PVC
PA 66	PS
TPU	HIPS(SB)
PUR-RIM	PUR-WS
SRIM	POM
PP	SMA

Article	Order Number
Software for the automatic measurement and identification of plastics	O/MACROP
Evaluation method for the identification of plastic parts	P-LIB
OPUS spectroscopic software with IDENT package	O/IR-UP O/ID-N
ALPHA spectrometer with front reflection module	A250/D A241/D