

With the near infrared spectrometry (NIR) of the IoSys units it is also possible to identify packaging plastics. A self-calibrating, control-free stationary online measuring unit enables untrained users to sort plastics quick and efficiently.

The measuring principle is the diffuse near infrared reflection spectroscopy where the characteristic absorption patterns of different polymer types in a typical spectral region are used. The polymer sample is radiated with infrared light and the reflected light of the measuring place is analyzed by a near infrared detector array.

The unit is auto-calibrating. For identification the sample is simply held over the bottom plate below the IR light source. The identified polymer is shown on the built-in LCD-touchscreen or an optional external VGA screen. The identification result is also generated as an output signal for sorting systems by an integrated relay-interface board. 4 polymer types and the corresponding relay positions can be set individually. A 9-pole-SUB-D connector or 4 connectors allow easy cable wiring.

The device includes the optical NIR-system, the power supplies and the computer, which controls and evaluates the identification process. Parameter settings like model selection can be effected by an external keyboard and the LCD-touchscreen. Additional connections like an USB-interface allow external data transfer. As an optional feature a LED array for the visualization of the identification result is also available.

The identification of different plastic types is the result of a trained pattern recognition with a specially developed neural network inside a database with several counterchecking. The result of the calculation is a list of the most probable polymer types identified within a probability between 0 and 100%. This comparison is necessary, since – contrary to metals – plastics have no norms and no standardizations!

The software allows detailed spectra viewing, loading, saving and comparing.



With the **siRoFoil** (16 Pixel) it is possible to identify the following plastics and their mixtures independently of surface structure and contamination: **PE, PP, PS, PET** and **PVC**.

Technical Data:

| | |
|-----------------|-------------------------|
| - Dimensions: | 390 x 520 x 270 mm |
| - Weight: | 7 kg |
| - Power Supply: | 100 - 230 VAC, 50/60 Hz |

Specifics of this unit:

- Identification of plastics from household-, packaging and engineering/electronics waste
- Contactless and non-destructing measurements
- Measurement of plastic parts, films and containers
- Detailed spectra overview for easy comparison – if desired
- 4 separated outputs for signal generator

According to different demands in recycling matters, customers can arrange to have the system calibrated using their own samples (**PA, ABS, PPO, SAN, PC+PET, PC, PC+ABS, PBT, PMMA, POM, ABS+PVC**).

