

miRoPort – portable Infra-Red optic for Identifying Plastics

Efficient polymer recycling requires reliable methods for sorting plastics by type. Battery-operated and portable, the miRoPort system from IoSys/GUT enables on-the-spot analysis of waste plastics while offering the detection capabilities of our larger mobile units.

The miRoPort performs direct analysis of plastic parts, films, granules, foams and other materials, without prior sample preparation. This low-priced tool is compact, convenient and easy to use.

Portable infrared spectrometer system miRoPort

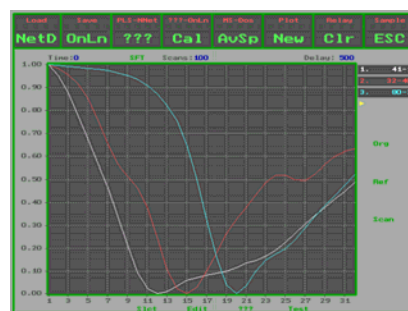


The miRoPort system uses diffuse near infrared (NIR) reflection spectroscopy to analyze the characteristic absorption patterns of different polymer types in a given spectral region. The sample is irradiated with infrared light, and the light reflected from the sample is analyzed using a near-infrared detector array.

Polymer identification is achieved by trained pattern recognition. Optical data acquired in the test (absorption bands of overtone and combination vibrations) are processed in a neural network. The results of this processing are displayed as percent probabilities of the polymer type contained in the sample.

Tests are performed by holding the test head against the sample and pressing the start button on the pistol grip. Almost instantly, the polymer detected appears on the integrated LCD touch screen.

The miRoPort includes an optical system and a computer which controls the analysis functions. The test head houses the NIR source and is connected to the instrument by a 23 inch cable. Test parameters and detailed spectral views are selected using the integrated touch screen. The unit comes with a shoulder strap for easy portability. Options include an external relay-



interface card, a mini-plotter for printing test results, and a carpet analysis feature. An external keyboard and VGA monitor can be connected if desired.

The system can be calibrated to the user's own samples. Input parameters and display of test results are user-controlled. Designed for flexibility, the device allows users to create their own test criteria and test functions.

Dimensions: 14.3 x 7.7 x 9.5 in., weight: 7 lbs, power supply: 100-240 Volt ~, 50/60 Hz or integrated rechargeable batteries providing 4-6 hours of operating time

- Identifies and analyzes PA6x, PA12, PE, PP, ABS, PS, PPO, PCA, PBT, PET, PC, PMMA, POM, PVC, ETFE
- Applications: recycling of household, electronic, automotive and other waste polymers; analysis of carpeting, textiles, lacquers and many other materials
- Measurement time: 1 second or less
- Measurements are non-destructive
- Tests are unaffected by surface texture, color, moisture or contamination
- Tests can be performed through plastic bags, plastic wrap and the like
- Portable design facilitates on-the-spot analyses anywhere
- Can be calibrated to as many as 8 sample types
- Portable (7 lbs.) and battery operated (4-6 hours before recharging)
- Works best in the absence of soot-based darkening agents

