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ABB MEASUREMENT & ANALYTICS

## **MB3600-CH80**

Polyethylene Terephthalate (PET)  
packaging analyzer



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## Measurement made easy

**The MB3600-CH80 PET packaging analyzer is a rugged industrial FT-NIR solution for fast analysis of PET containers like jars, bottles and preforms. It is intended for R&D centers, QA/QC laboratories or production lines of companies performing a large number of daily measurements of containers key characteristics.**

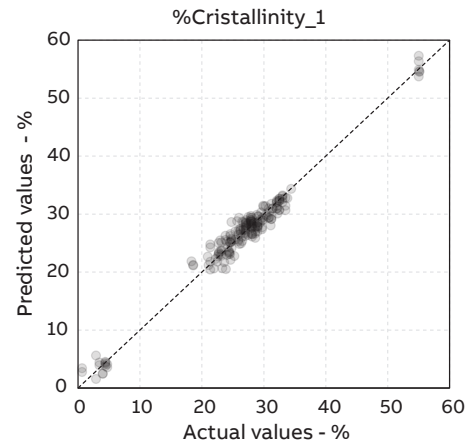
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## Fast and precise analysis of PET containers

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01 Wafer manufactured in a semiconductor factory—  
02 Predicted and actual values chart according to cristallinity percentage

### Instant determination of packaging characteristics

The MB3600-CH80 enables precise determination of several PET quality attributes such as crystallinity, moisture content, wall thickness or intrinsic viscosity. Analysis is performed within a few seconds, as an alternative to slower laboratory methods. No specific sample or instrument preparation is required, and the measurements are totally non-destructive. The operator just places the piece of PET to be analyzed in the analyzer sampling compartment and follows on-screen instructions. Analysis with MB3600-CH80 PET packaging analyzer does not require any chemical reagent, waste disposal or analytical expertise.

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# Turnkey solution

— 03 HorizonMB QA software interface

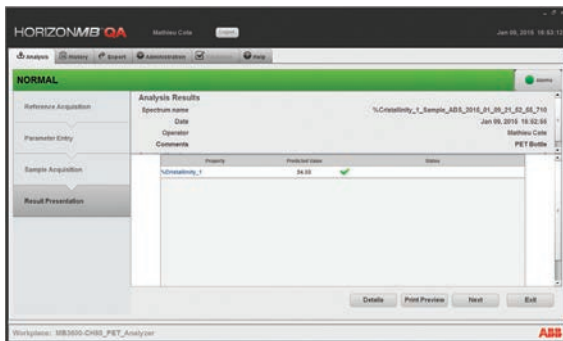
— 04 MB3600-CH80 analyzer

ABB has developed an unrivalled FT-NIR calibration expertise and is able to offer turnkey models for crystallinity determination in PET containers. These calibrations, made out of more than 150 PET bottles are pre-loaded on the instrument and configured in the user-friendly operator interface. From the day of installation, the user can start analyzing PET containers.

For each assay, a statistical indicator is automatically calculated to assess the quality of the sample recognition by the system. Automatic warnings are displayed for PET formulations that are unique or significantly different from the calibration database. This serves as an indication for the user that the FT-NIR calibration must be adjusted to include some samples of this formulation and further enhance the robustness of the model. Samples that are atypical or exceeding the crystallinity range spanned by the pre-loaded model will be automatically flagged.



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# Multi-property assessment in one click

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05 Universal vial holder

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06 Powder sampler

## Versatility

In addition to crystallinity, other important properties of PET that can be determined with the MB3600-CH80 include:

- moisture content:
- wall thickness:
- density:
- hydroxyl value:
- acid value:
- intrinsic viscosity:

Those properties are based on custom-built calibration models that can either be supplied by ABB, or developed by the end-user.



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Some specific sampling accessories can also be added as options:

- powder sampler for analysis of solids like powders, pellets or pieces of opaque packaging:
- universal heatable vial holder for analysis of liquids or melted plastics in disposable scintillation vials:

The accessories are positioned in the sampling compartment of the MB3600-CH80 PET packaging analyzer and connected to the analyzer via a USB port for automatic recognition. They can easily be swapped.

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# Minimal cost of ownership

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While the MB3600-CH80 vertical design provides a minimal footprint, it is also an analyzer with minimal cost of ownership. Our engineers have designed the modular components of the MB3600-CH80 to provide the longest product life on the market based on the following key principles:

- no maintenance:
- no consumables:
- no adjustments:
- no wear of the scan mechanism:

As a result, the pre-aligned source module with electronic stabilization is designed to operate for 10 years without replacement, and the solid state laser-based metrology module has a 20-year lifespan. All MB3600-CH80 PET packaging analyzer optics are non-hygroscopic so that no instrument purging is necessary for optical protection. Significantly reduces the cost of laboratory analyses while improving product consistency and laboratory throughput.

## **The support and reliability of a leading global supplier**

ABB is a major supplier of laboratory and process analytical systems with more than 45 years of experience in developing FT-IR and FT-NIR spectrometers for industrial, military and space applications. As part of our portfolio of products and services for process optimization, we are able to offer a full range of custom calibration modeling services and application support for industrial applications. ABB also provides extensive, globally distributed after-sales support and engineering services, as well as a full customer training program.



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