

# CRYSTEX® 42

AUTOMATED SOLUBLE FRACTION MEASUREMENT



## High-throughput system for simultaneous measurement of the Amorphous Fraction, Ethylene Content, and Intrinsic Viscosity.

CRYSTEX® 42 is a high-throughput and fully-automated approach for obtaining the soluble fraction in polypropylene and copolymers. It stands as a modern and easy-to-operate alternative to the traditional wet chemistry method based on xylene solubility, which is known for being time consuming and for requiring constant manual handling of solvent at high temperature.

CRYSTEX® 42 incorporates a high temperature autosampler with 42 positions to analyze samples in 20mL vials (max. sample amount of 160mg). This system eliminates the need to handle solvent manually and it operates with less flammable solvents than Xylene (TCB or oDCB), increasing the safety level in the laboratory.

CRYSTEX® 42 is based on the same TREF separation concept as its sibling instrument, CRYSTEX® QC, in which the sample is loaded into a TREF column twice. The first injection serves to measure the whole polymer and the second one remains within the column for a crystallization ramp that results in the separation of the soluble from the crystalline fraction.

Results are very precise thanks to its full automation and to its integrated infrared detector (IR4), which measures precisely the amount of sample analysed as well as providing ethylene content information. Moreover, for a truly complete analysis, the instrument measures intrinsic viscosity by means of a built-in dual capillary viscometer. All results (concentration, ethylene content, and intrinsic viscosity) are obtained for the whole sample, the soluble fraction, and the crystalline fraction.

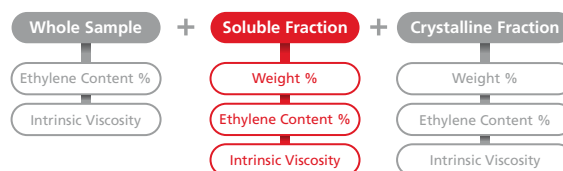
While CRYSTEX® QC was designed to be installed in each production plant to monitor the process in real time analyzing a larger amount of sample (up to 4g), CRYSTEX® 42, with its high temperature autosampler, and has become perfect complement to be used in a central lab, where large batches of pelletized, more homogeneous samples need to be analyzed.

Find out more at [www.polymerchar.com/CRYSTEX\\_42](http://www.polymerchar.com/CRYSTEX_42)

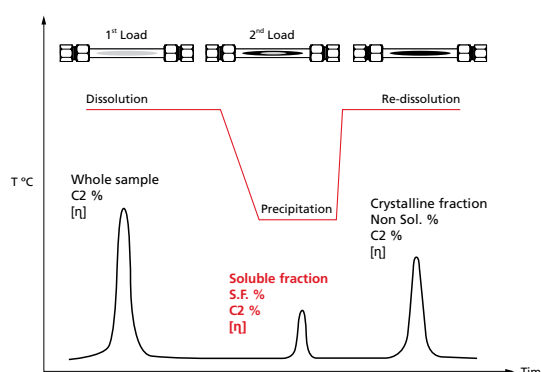
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## KEY FEATURES

- ▶ Fully-automated analysis of the soluble fraction (amorphous) fraction in polypropylene and other polyolefins.
- ▶ Additional analysis of ethylene content and intrinsic viscosity for the soluble fraction, the crystalline fraction and whole sample.
- ▶ Fully automated process for 42 samples.
- ▶ Dissolution and full analysis of the first sample completed in 3 hours. Following samples results are obtained every 2 hours.
- ▶ No need for accurate weighing of sample or manual solvent handling.
- ▶ No external filtration or solvent evaporation required.
- ▶ Highly precise results.
- ▶ Compatible with other polyolefin materials such as LDPE and adaptable to other solubility tests (heptane or hexane solubles).



Information provided by CRYSTEX® 42 in a single analysis



Elution of the whole sample and PP fractions in a TREF column

## Polymer Char References

- App. Note: "Soluble fraction analysis in polypropylene for QC (CRYSTEX® QC)".
- App. Note: "Characterization of the whole polymer, amorphous and crystalline fractions in a Quality Control Laboratory".
- Poster: "Automated analysis of the amorphous fraction in PP resins by a modified TREF technique (5<sup>th</sup> ICPC 2014)."