



## Textiles | Determination of Fiber Crystallinity

### Summary

The development of new advanced fiber materials expanded the use of fibers and lead to new fiber applications. These applications require high performance and reliable consistent manufacturing of the fiber. One of the most important fiber properties is crystallinity. The crystallinity will influence the strength, flexibility, permeability and dye characteristics of the fiber. Unknown variations in crystallinity will cause major problems for fiber producers and textile manufacturing plants.

Progression's Nuclear Magnetic Resonance (NMR) technology has proven to be an excellent tool in the direct analysis of fiber crystallinity. The non-destructive analysis is completed in less than 3 minutes and requires no chemicals. The NMR method can be applied to any fiber type and does not require a calibration as it is a primary method.

### Benefits

- Independent of color
- No consumables required
- Solvent-free analysis
- Fast analysis (< 3 minutes)
- Operator independent
- Primary method (no calibration required)
- Preconfigured methods for all fiber types
- 100% of sample is measured

### Sampling

Fiber samples are loaded into a sample test tube for analysis. The NMR analysis can be performed at ambient temperature in minutes. The full sample volume (20 ml) is measured to provide a reliable and representative analysis.

### Fiber Types Tested

- |               |              |                 |
|---------------|--------------|-----------------|
| ■ Acetate     | ■ Melamine   | ■ Polyethylene  |
| ■ Acrylic     | ■ Modocrylic | ■ Polypropylene |
| ■ Aramid      | ■ Nylon      | ■ PBI           |
| ■ Bicomponent | ■ Olefin     | ■ Rayon         |
| ■ Lyocell     | ■ Polyester  | ■ Spandex       |

### Calibration and Results

