Thermo Scientific HAAKE MARSXR RheoRaman System

Deepen materials understanding through multi-modal analysis

Applications:

- Advanced Polymeric Materials
- Pharmaceutical Hotmelts
- Food and Cosmetic Emulsions
- Coatings
- Adhesives

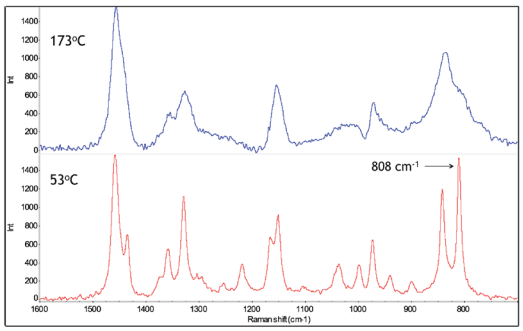
Key benefits:

- Obtain real time insight into molecular changes that drive a shift in rheological behavior
- Obtain deeper insight into phase transitions, crystallization and product stability
- Correlate rheological properties and molecular changes on the same sample under identical conditions
- Increase information content while saving time

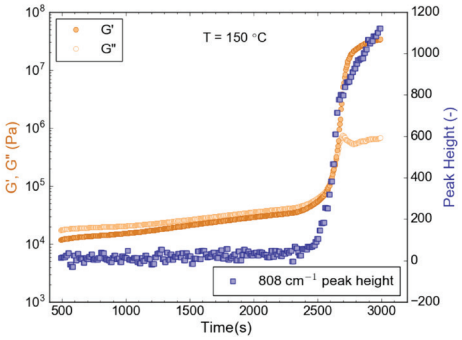
Product description

- The integration of a Thermo Scientific™ HAAKE™ MARS™ rheometer and the Thermo Scientific™ iXR™ Raman spectrometer
- Collect simultaneous rheological and Raman data
- Rheometry tells us what, while Raman spectroscopy tells us why
  - The rheometer discloses how a sample behaves under a given stress or strain
  - Raman spectroscopy provides positive chemical identification and a spectral fingerprint unique to a material, and also reveals morphology and structural changes during phase transitions
- Unambiguous correlation of results because they are collected on the same sample, at the same time, under the same conditions
- Saves time compared to sequential measurements on two different instruments

Tracking high density polyethylene crystallization using the HAAKE MARSXR RheoRaman system



Raman spectrum of the molten (top) and crystalline (bottom) states of polypropylene, measured on the MARSXR Rheo-Raman system during a rheological measurement. The band at 808 cm^{-1} is due to the skeletal deformation of helical chains within the crystal, and its intensity can be used as a measure of crystallinity of polypropylene.



Shear storage modulus (G'), shear loss modulus (G") and the 808 cm^{-1} Raman shift peak height as a function of time during the isothermal recrystallization of polypropylene measured on the MARSXR Rheo-Raman system. G' and G" were obtained from the MARS rheometer, and the 808 cm^{-1} peak height was determined from the iXR Raman spectra.

Order Information

912A0908	iXR Spectrometer Mainframe
840-294300	HAAKE MARSXR RheoRaman Interface Kit

Select at least one of:

840-285900	785 nm High Brightness	Laser Kit
840-286000	785 nm High Power	Laser Kit
840-285600	532 nm High Brightness	Laser Kit
840-285500	455 nm High Brightness	Laser Kit

Order Information

379-0600	HAAKE MARS Rheometer
222-2313	RheoRaman Module
222-1817	20x Long Working Distance Objective
222-1812	Lower glass measuring plate
222-2089	Plate 35mm with ceramic shaft (or alternate rotor if required)
222-1897	Temperature module power supply (2 required for high temperature version)

For high temperatures:

222-2172	Electrical temperature module TM-EL-H
222-1902	Holder for TM-EL-H

Find out more at **thermofisher.com/ixr**

ThermoFisher SCIENTIFIC