

APPLICATION SHEET

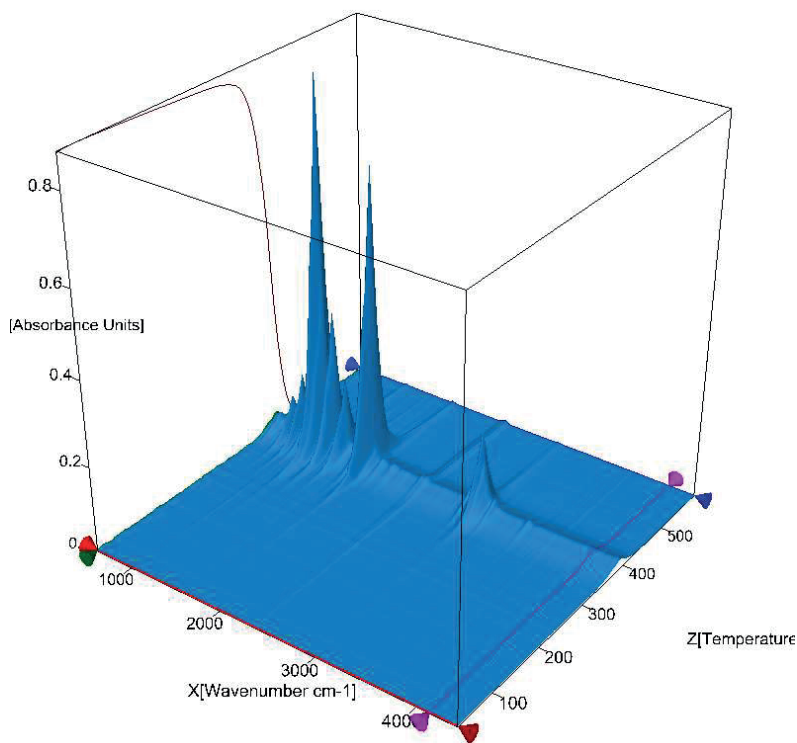
Polymers · Polymer Manufacturing
TG 209 **F1 Iris**® – FT-IR

PMMA (Polymethyl Methacrylate)

Introduction

Polymethyl methacrylate (PMMA) or polymethyl 2-methylpropenoate) is the polymer of methyl methacrylate. This thermoplastic is transparent and is sold by the trade name Plexiglas, Perspex, Acrylite, Acryplast, and Lucite is commonly called acrylic glass or simply acrylic.

The material is often used as an alternative to inorganic glass. PMMA is lighter than glass, does not shatter and can easily be formed by heating above the glass transition.



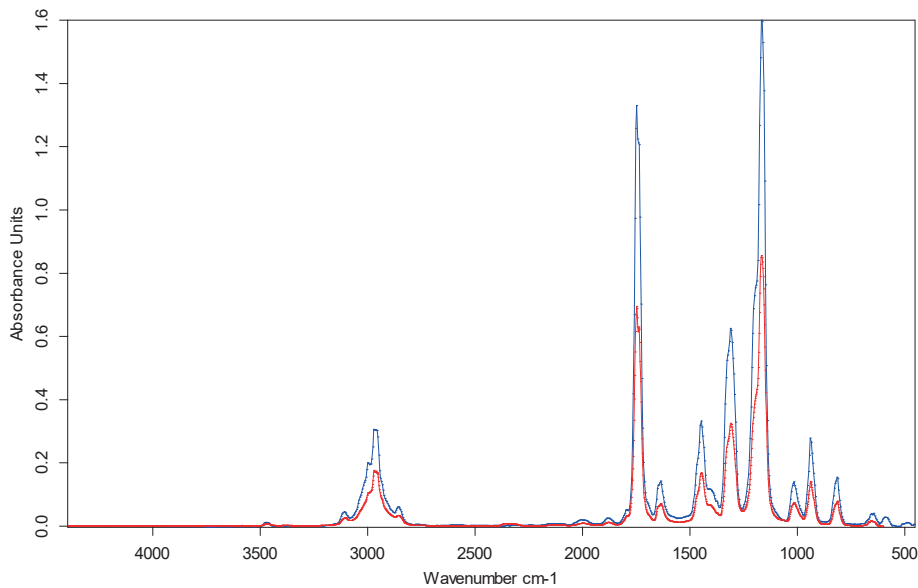
Test Conditions:

Temperature range: RT ... 600°C
Heating/cooling rates: 20 K/min
Atmosphere: Nitrogen (40 ml/min)

Sample mass: 5.1 mg
Crucible: Alumina
Sensor: Platinel

APPLICATION SHEET

Polymers · Polymer Manufacturing
TG 209 **F1 Iris**® – FT-IR



Test Results

PMMA reacts totally to CO_2 and H_2O upon heating in an air atmosphere. A 3-dimensional plot of the PMMA pyrolysis with FT-IR and TGA curves is depicted in figure 1. During

pyrolysis (heating in an inert gas atmosphere), the monomer (methacrylic acid, methyl ester) can be detected. This is shown in figure 2 depicting a library search result (blue = library spectrum).