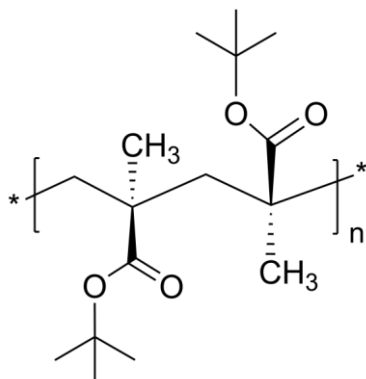


Sample Name:
Poly(tert-butyl methacrylate), syndiotactic.

Sample#: **P42478-tBuMA**

Structure:



Composition:

| | |
|----------------------|---------|
| Mn x 10 ³ | PDI |
| 80.5 | 1.03 |
| S:H:I | 53:42:4 |

Synthesis Procedure:

Poly(t-butyl methacrylate) is obtained by living anionic polymerization of t-butyl methacrylate.

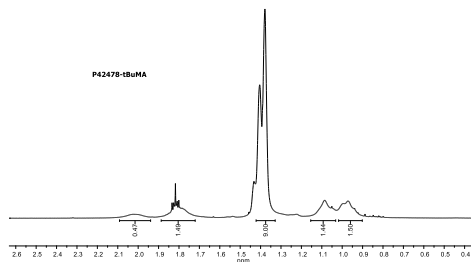
Characterization:

The product was characterized by size exclusion chromatography (SEC) and ¹H-NMR spectroscopy.

Solubility:

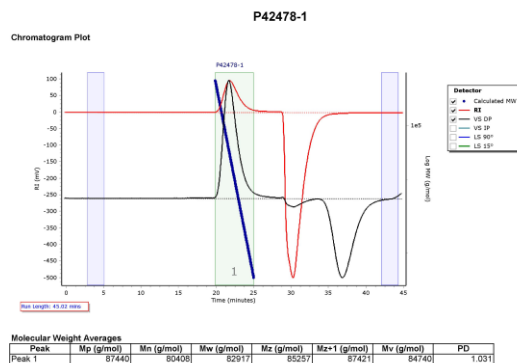
Poly(tert-butylmethacrylate) is soluble in THF, CHCl₃, toluene and dioxane. The polymer precipitates from cold methanol and ethanol.

¹H-NMR spectrum of the polymer:



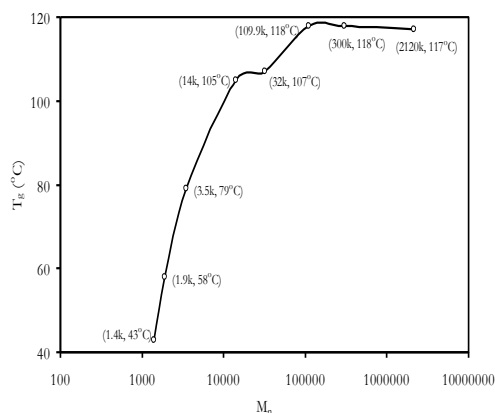
SEC elugram of Homopolymer:

Agilent GPC/SEC Software



DSC thermogram of the Product:

T_g of poly t-butyl methacrylate as function of molecular weight



T_g vs MW for selected poly t-butyl methacrylate:

| M _n × 10 ³ | T _g (°C) | M _n × 10 ³ | T _g (°C) |
|----------------------------------|---------------------|----------------------------------|---------------------|
| 1.4 | 43 | 32 | 107 |
| 1.9 | 58 | 109.9 | 118 |
| 3.5 | 79 | 300 | 118 |
| 14 | 105 | 2120 | 117 |

References for further information:

S. K. Varshney, Z. Gao, Xing Fu Zhong, A. Eisenberg
 “Effect of Lithium Chloride on the “Living” Polymerization of tert-Butylmethacrylate and Polymer Microstructure Using Monofunctional Initiators” *Macromolecules*, 1994, 27, 1076.