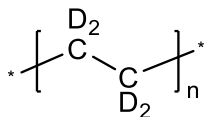


Sample Name: **Deuterated Polyethylene-d₄**

Sample #: **P9549-dPE**

Structure:



Composition:

| | |
|---------------------------|-----------|
| $M_n \times 10^3$ (g/mol) | M_w/M_n |
| 212.0 | 1.7 |

Thermal properties:

| | |
|----------------------|---------------------------------|
| Melting point, T_m | Crystallization point, T_{cr} |
| 128 °C | 112 °C |

Synthesis procedure:

The polyethylene-d₄ was obtained by polymerization of ethylene-d₄ using Ziegler and metallocene-based catalysts.

Characterization:

The molecular weight and polydispersity index were obtained by size exclusion chromatography (SEC) of using trichlorobenzene as an eluent at 150°C.

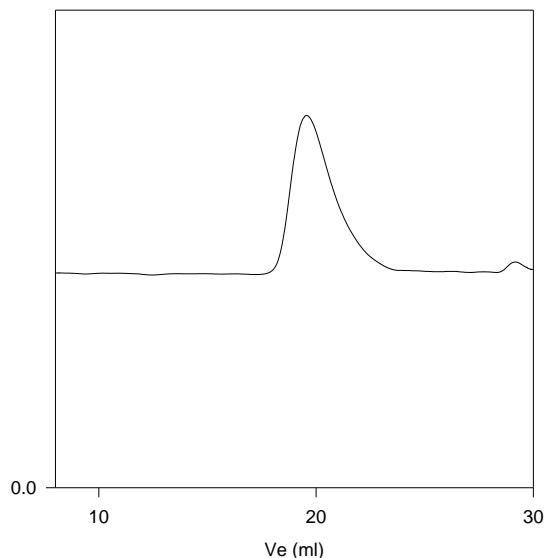
Thermal analysis was performed on TA Instruments Q100 differential scanning calorimeter (DSC) under a nitrogen atmosphere at a scan rate 10 °C/min.

Solubility:

Polyethylene-d₄ is soluble in hot toluene, xylene, and chlorobenzene.

SEC chromatogram of polyethylene-d₄:

P9549-dPE



— deuterated poly ethylene run in
Trichlorobenzene at 150 oC $M_n=212,000$, $M_w=361,000$, $PI=1.7$
Calibration with Poly ethylene standards

DSC thermograms of the dPE product:

1st cooling (upper) and 2nd heating (lower) scans, both performed at a rate 10 °C/min.:

