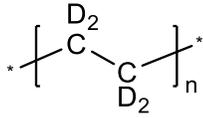


Sample Name: **Deuterated Polyethylene-d<sub>4</sub>**

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-d<sub>4</sub> was obtained by polymerization of ethylene-d<sub>4</sub> 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.

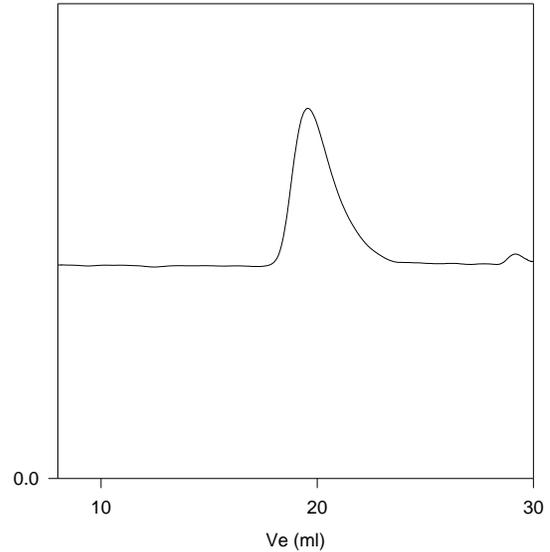
Thermal analysis was performed on TA Instruments Q100 differential scanning calorimeter (DSC) under a nitrogen atmosphere at a scan rate 10 °C/min.

Solubility:

Polyethylene-d<sub>4</sub> is soluble in hot toluene, xylene, and chlorobenzene.

**SEC chromatogram of polyethylene-d<sub>4</sub>:**

**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:**

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

Sample: P9549\_dPE  
Size: 6.9000 mg

File: P9549\_dPE.001

