

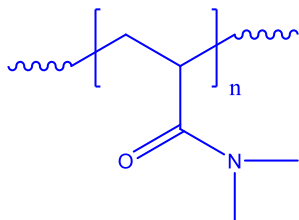
# Product Profile

## Identification

**Product Name:** Poly(N-N-dimethylacrylamide)

**Product Lot Number:** P40530I-R-DMA

**Product Chemical Architecture:**



**Composition:**

|                     |                       |
|---------------------|-----------------------|
| <b>Mn (g/mole)</b>  | <b>228,000</b>        |
| <b>MW (g/mole)</b>  | <b>279,000</b>        |
| <b>Mw/Mn</b>        | <b>1.22</b>           |
| <b>dn/dc (mL/g)</b> | <b>0.165 in water</b> |

## Method of Synthesis

The polymer is synthesized by free-radical polymerization initiated by AIBN. Obtained polymer fractionated using proper solvent/nonsolvent and the obtained polymer was purified by dissolving in acetone and precipitating in ether.

**Solubility in different solvents**

|         |   |                   |   |
|---------|---|-------------------|---|
| THF     | √ | DMF               | √ |
| Alcohol | √ | CHCl <sub>3</sub> | √ |
| Toluene | X | DMSO              | √ |

## Validation of Architecture

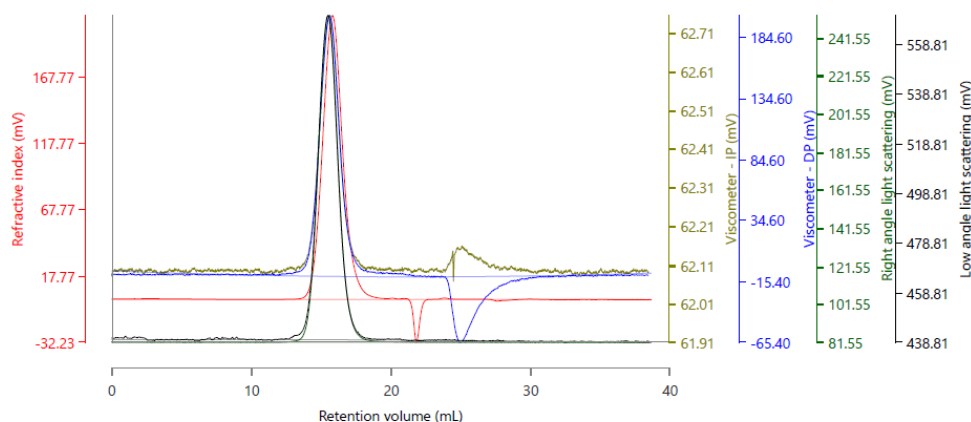
**A. Gel Permeation Chromatography (GPC), SEC- Profile:**

Polymer Source

Malvern Panalytical



Raw Data Chart



Results (Rows)

| Injection Name                        | RV (mL) | Mn (g/mol) | Mw (g/mol) | Mp (g/mol) | Mz (g/mol) | Mw/Mn |
|---------------------------------------|---------|------------|------------|------------|------------|-------|
| P40530I-DMA-202K, Injection 1, Peak 1 | 15.82   | 228,098    | 278,872    | 251,742    | 344,295    | 1.223 |

**B. NMR (HNMR) OF PDMA general**



**C. Dependence of glass transition temperature (T<sub>g</sub>) of PDMA from its molecular weight:**

