

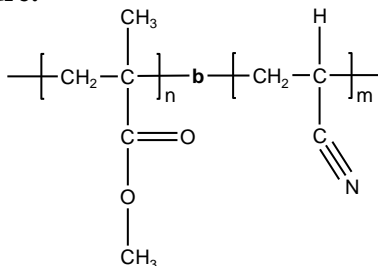
Sample Name:

**Poly (Methylmethacrylate-b-Acrylonitrile)**

Sample #: **P41205-MMAACN**

*PMMA block rich in Syndiotactic fraction*

**Structure:**



**Composition:**

$M_n \times 10^3$ MMA-b-ACN	Mw/Mn (PDI)
18.0-b-23.5	1.4

Color of the Product: Orange color

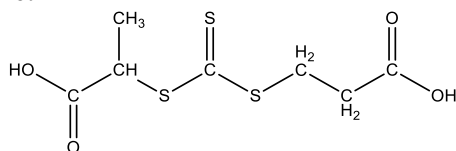
**Synthesis Procedure:**

The polymer is prepared by RAFT controlled radical polymerization process.

PACN-RAFT macroinitiator prepared by ethylene carbonate as solvent.

Following RAFT catalyst used:

**Structure:**



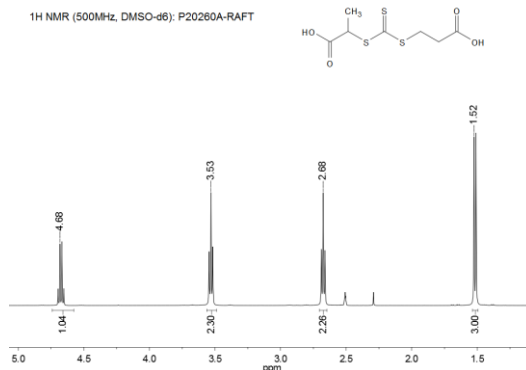
Chemical Formula:  $C_7H_5NO_4S_3$   
Molecular Weight: 254.3

Purity:	> 95 %
Storage temperature:	2–8°C

**Characterization:**

The chemical structure of the product was confirmed by FT-IR and  $^1H$  NMR.

**$^1H$  NMR (500 MHz, DMSO- $d_6$ ):**

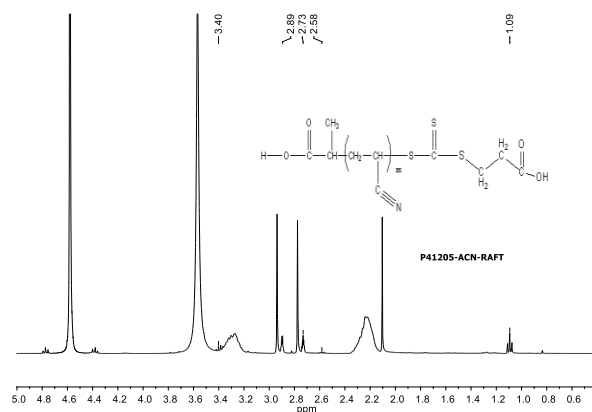


**Characterization:**

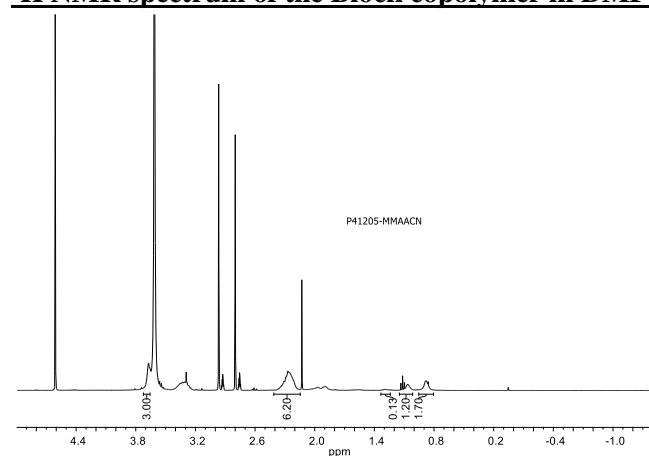
The polymer was characterized by  $^1H$  NMR and size exclusion chromatography (SEC) in DMF.

Composition determined by HNMR and Distribution by GPC runs in DMF.

**$^1H$  NMR spectrum of the PACN-RAFT Macroinitiator in DMF:**



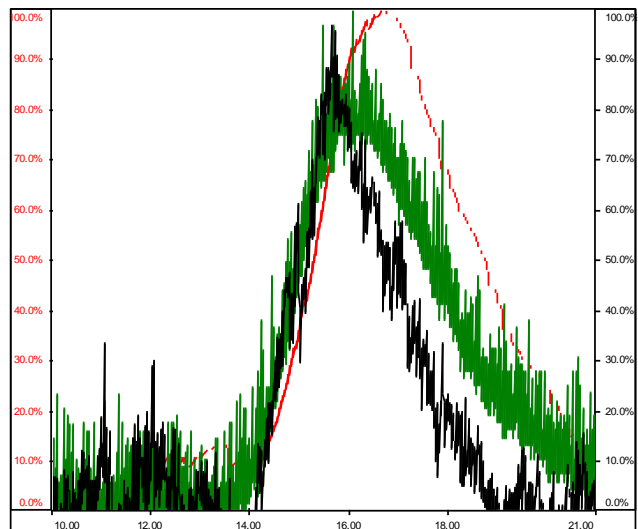
**$^1H$  NMR spectrum of the Block copolymer in DMF:**



### SEC elugram of the PACN-RAFT macroinitiator:

#### **P41205-ACN-RAFT**

Conc	1.8015
dn/dc	0.0920
Solvent	DMF w 0.023M LiBr
Flow Rate	0.7000
Method	PS99k_2018-05-30-0000.vcm

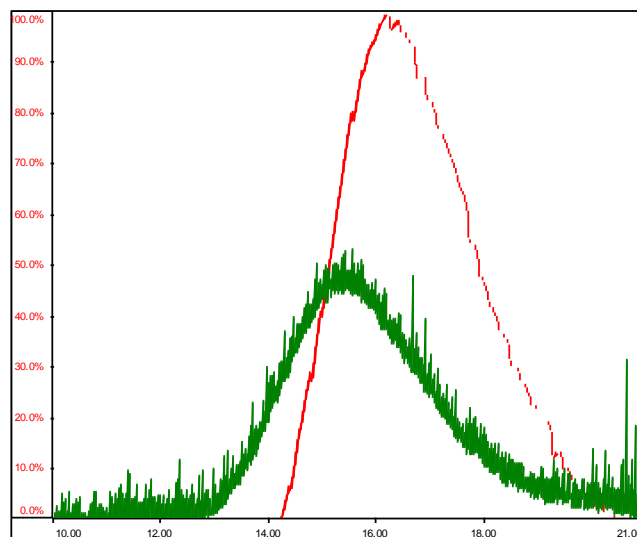


Sample	Mn	Mw	Mp	Mw/Mn	IV
P41205-ACN-RAFT_01.vdt	23,560	25,417	22,918	1.079	1.0845

### SEC elugram of the diblock copolymer:

#### **P41205-ACN-MMA**

Conc	1.3941
dn/dc	0.0800
Solvent	DMF w 0.023M LiBr
Flow Rate	0.7000
Method	PS99k_2018-05-30-0000.vcm



Sample	Mn	Mw	Mp	Mw/Mn	IV
P41205-2_01.vdt	41,229	58,756	43,206	1.425	1.2306