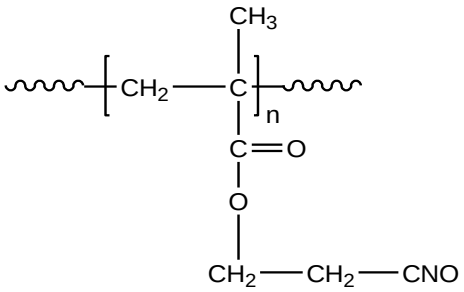
Sample Name:
Poly(isocynatoethyl methacrylate)

Sample #: **P8752-CNOEMA**

Structure:

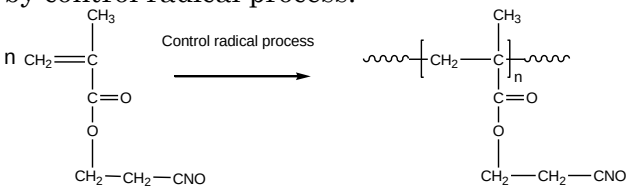


Composition:

Mn × 10^3	PDI
2.2	1.4
T_g (°C)	25

Synthesis Procedure:

Poly(isocynatoethyl methacrylate) is obtained by control radical process.



Characterization:

The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple detectors from Viscotek Co. ^{1}H NMR analysis was carried out on Varian instrument at 500MHz.

Solubility and its sensibility towards atmospheric moisture and the moisture present in solvents:

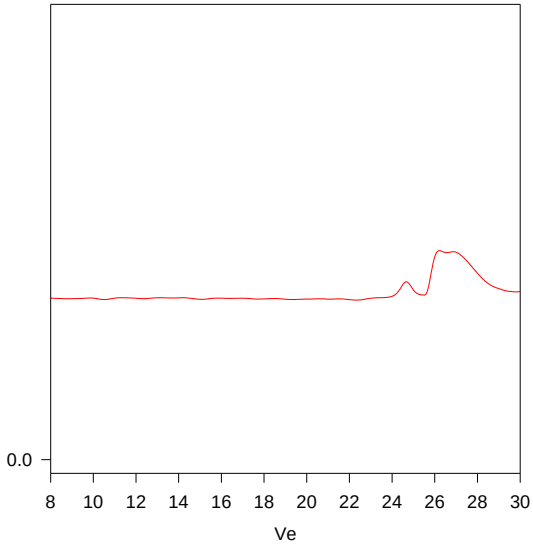
Polymer obtained can be stored under vacuum but it is preferable to dissolve the polymer after the polymerization in dried oxygen free solvent to avoid crosslinking due to the presence of free isocynato groups.

THF or $CHCL_3$ was dried over CaH_2 by reflux for 24h and distilled under argon atmosphere.

The Polymer after the polymerization (the unreacted monomer was removed under vacuum at 100 °C). The polymer might contain traces amount of un reacted monomer. The dried solvent was added and the polymer immediately solubilizes and a clear solution was obtained. If this solution was exposed for few hours to atmospheric conditions than thickening of solution was observed and finally a gel like solution was obtained. Care should be taken to use the polymer immediately after opening the vial.

Polymer solution was transfer to a glass vial and seal under vacuum.

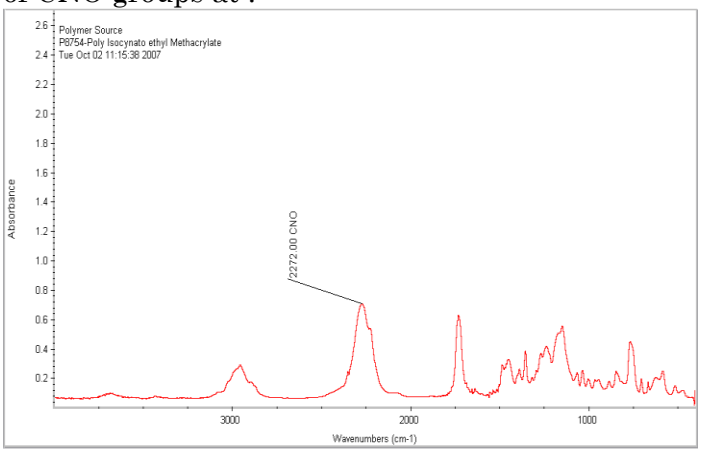
P8752-CNOEMA



Size Exclusion Chromatography of Poly(isocynato ethyl methacrylate):

M_w= 2200, M_n=3000, M_w/M_n=1.4

FTIR of the Polymer indicating the presence of CNO groups at :



DSC thermogram for the polymer: