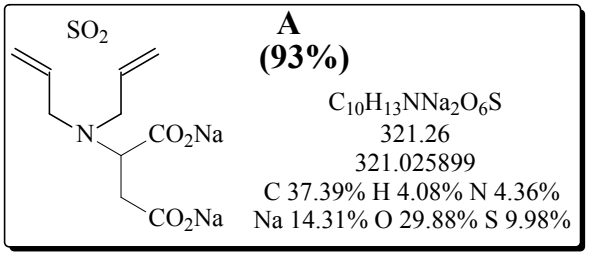
Electronic Supplementary Material (ESI) for RSC Advances.

Synthesis of a unique cross-linked polyzwitterion/anion having aspartic acid residue and its use for Pb^{2+} removal from aqueous solution

Zakariyah A. Jamiu, Tawfik A. Saleh, Shaikh A. Ali

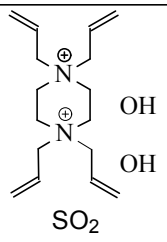
Department of Chemistry, King Fahd University of Petroleum & Minerals, Dhahran, Saudi Arabia

S1. Calculations based on monomer feed ratios



A
(93%)

$C_{10}H_{13}NNa_2O_6S$
321.26
321.025899
C 37.39% H 4.08% N 4.36%
Na 14.31% O 29.88% S 9.98%



B: 7%

$C_{16}H_{30}N_2O_4S$
346.49
346.192629
C 55.46% H 8.73%
N 8.09% O 18.47% S 9.25%

The two repeat units **A** and **B** above have their respective calculated elemental analysis given in the box.

Now, for 93% **A** and 7% **B**, the calculated value for instance of C = 37.39×0.93 + 55.46×0.07 = 38.65. Note that 37.39 is the value of C for 100% A, while 55.46 is the value of C for 100% B. 0.93 and 0.07 are the corresponding factor for 93% and 7%, respectively. So:

C = 37.39×0.93 + 55.46×0.07 = 38.65.

H = 4.08×0.93 + 8.73×0.07 = 4.41.

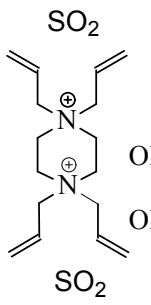
N = 4.36×0.93 + 8.09×0.07 = 4.62.

S = 9.98×0.93 + 9.25×0.07 = 9.93.

It is an approximate set of values since; there may be a maximum of **2 SO_2** units as in **C,** in which case the calculation will be slightly different to obtain:

C, 38.05; H, 4.31; N, 4.53; S, 10.37%.

C



$C_{16}H_{30}N_2O_6S_2$
410.54
410.154531
C 46.81% H 7.37% N 6.82%
O 23.38% S 15.62%