

Relative thermal stability of metal soaps of *Ximenia americana* and *Balanites aegyptiaca* seed oils

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Metal soaps of *Ximenia americana* seed oil (XSO) and *Balanites aegyptiaca* seed oil (BSO) were prepared by metathesis in aqueous alcohol solution. The thermal stability of the metal carboxylates (soaps) was studied thermogravimetrically in the temperature range 50 - 500°C under nitrogen. The thermal stability of the carboxylates was assessed in terms of temperatures at which various extent of decomposition were attained and Weight loss at the initial stage of decomposition. The weight loss for all the metal soaps was less than 10% at temperature up to 250°C. The activation energies at the initial stage of decomposition of the metal carboxylates modelled using Broido's equation are in the range 6.93 -14.14 kJmol⁻¹ for XSO while those of BSO rang~ between 15.52 - 28.41 kJmol⁻¹. Based on these results, metal soaps of BSO are thermally stable than those of the corresponding XSO soaps. The results suggest potential application of carboxylates of *X americana* and *B. aegyptiaca* seed oils in some industrial applications.

Key words: Metal soaps, thermal stability, carboxylates, thermogravimetric, decomposition.