**Effect of precipitation route on the properties of antimony trioxide**

ABSTRACT

Antimony trioxide was prepared, using antimony potassium tartarate as starting material, via forward and reverse precipitation technique. The characteristics of the resulting antimony oxides were determined by BET surface area method, differential thermogravimetry analysis (DTG), X-ray diffraction (XRD), Fourier-transform infrared spectroscopy (FT-IR) and SEM. The DTG curves for all uncalcined samples showed only a single endothermic peak which indicated that the sample is antimony trioxide. Unlike forward precipitation technique which resulted in a single antimony trioxide phase which is senarmontite, reverse precipitation technique produced antimony trioxide with both senarmontite and valentinite phase. Upon calcinations at 723 K, a small amount of Sb2O4 with cervantite phase was formed at the expense of Sb2O3 senarmontite phase as detected from the XRD pattern and infrared spectrum of RSb. The effect of preparation route on the properties of the antimony trioxide produced was clearly demonstrated.

**Keyword:** Antimony trioxide, Precipitation, Senarmontite, Valentinite