

Preparation, characterisation and thermal properties of hydrazinium derivatives. Part III

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Abstract. Hydrazinium acetate, metavanadate, sulfite, sulphamate and thiocyanate have been prepared by the reaction of corresponding ammonium salts with hydrazine hydrate. The compounds were characterised by chemical analysis and infrared spectra. Thermal behaviour of these hydrazinium derivatives have been investigated using thermogravimetry and differential thermal analysis.

Keywords. Hydrazinium salts ; thermal analysis.

1. Introduction

Recently we reported the preparation and characterisation of a number of hydrazinium derivatives by the reaction of solid ammonium salts with hydrazine hydrate (Patil *et al* 1978, 1979a). Differential thermal analysis of a number of hydrazinium derivatives have also been discussed (Patil *et al* 1979b). In continuation of our studies on hydrazinium salts we have now prepared some more compounds and studied their thermal behaviour using thermogravimetry and differential thermal analysis.

2. Experimental

All the ammonium salts used were of analytical grade. Hydrazine hydrate (99-100 %) was a BDH product. Stoichiometric quantities of an ammonium salt and hydrazine hydrate were mixed when homogeneous solution was obtained with the evolution of ammonia indicating that the reaction was instantaneous. The resulting solution was allowed to crystallise in a vacuum desiccator over phosphorous pentoxide. In all the cases the conversion of ammonium salt to hydrazinium salt was quantitative.

The hydrazine content in the hydrazinium salts was estimated volumetrically using potassium iodate solution (0.05 M) under Andrews conditions (Vogel 1951). In hydrazinium thiocyanate and hydrazinium metavanadate it was not possible