



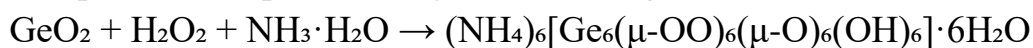
Ammonium peroxogermanate and ammonium peroxotellurates structure

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Ammonium peroxogermanate $[(\text{NH}_4)_6[\text{Ge}_6(\mu\text{-OO})_6(\mu\text{-O})_6(\text{OH})_6]\cdot 6\text{H}_2\text{O}]$ and ammonium peroxotellurate are modern as rare chemical compounds chemistry and materials in engineering wide is used. Due to their complex structures, high stability and versatility, these compounds are important in catalysis, semiconductors and other technological fields. This document describes the structure, synthesis methods, and characteristics of these compounds and application possibilities wide will be lit.

Ammonium peroxogermanate and There are a number of chemical methods for the synthesis of ammonium peroxotellurate. These processes are usually peroxide and ammonia compounds mutually to the reaction introduction demand does [1].

For example, in the synthesis of ammonium peroxogermanate, the reaction of germanium(IV) oxide and hydrogen peroxide in ammonium hydroxide medium is used. This process is represented by the following reactions:



Ammonium peroxogermanate and to determine the physicochemical properties of ammonium peroxotellurate one row analytical methods is used [2]. These include:

- X-ray structural analysis (XRD);
- Infrared spectroscopy (IR);
- Thermogravimetric analysis (TGA);

This compounds different used in different fields. Below are the main areas of application:

- Semiconductors : Germanium compounds used in the production of high-quality semiconductor materials.
- Catalysis : Ammonium peroxogermanate and ammonium peroxotellurate oxidant catalyst as is used.

Ammonium 3D view of peroxogermanate $[(\text{NH}_4)_6[\text{Ge}_6(\mu\text{-OO})_6(\mu\text{-O})_6(\text{OH})_6]\cdot 6\text{H}_2\text{O}]$ molecule in the model of substance geometry, $\mu\text{-OO}$ and $\mu\text{-O}$ bridges, as well as surrounding ammonium ions reflection achieved (Fig. 1).

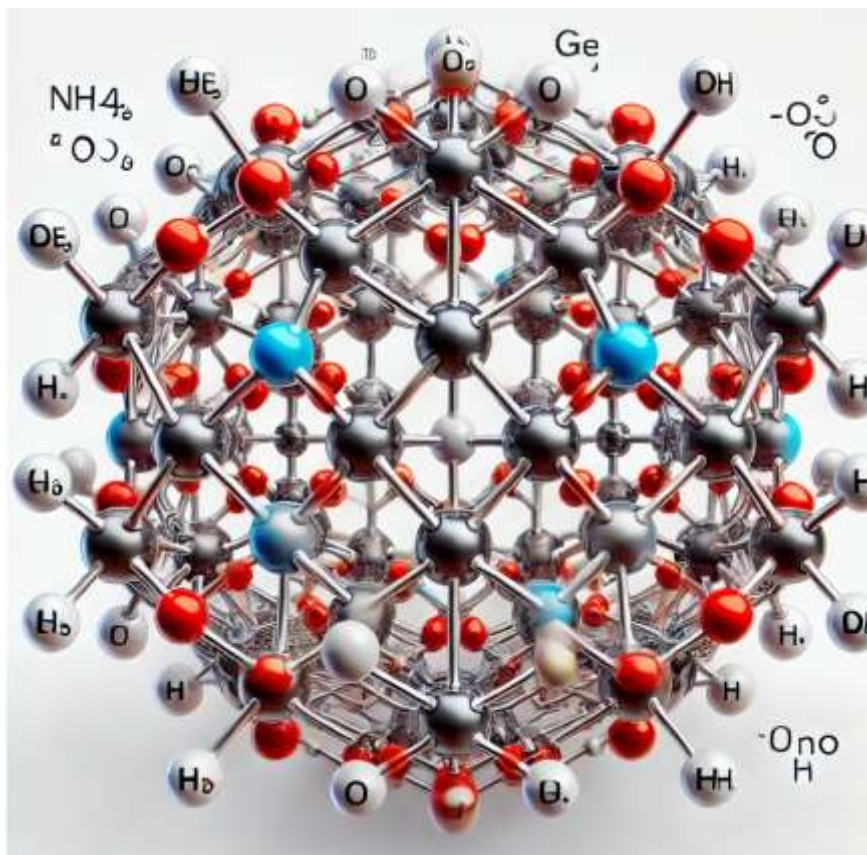


Figure 1. Ammonium 3D view of the peroxogermanate $[(\text{NH}_4)_6[\text{Ge}_6(\mu\text{-OO})_6(\mu\text{-O})_6(\text{OH})_6] \cdot 6\text{H}_2\text{O}]$ molecule

Ammonium peroxogermanate and Ammonium peroxotellurate is a very important material for modern science and industry. Due to their high stability and environmental safety, these compounds are new technologies in development main role-plays.

Used literature list

1. Sladkevich S., Gun J., Prikhodchenko PV, Gutkin V., Mikhaylov AA, et. al. Peroxide induced tin oxide coating of graphene oxide at room temperature and its application for lithium ion batteries // *Nanotechnology*. 2012. V. 23. P. 485601-485609.

2. Sladkevich S., Gun J., Prikhodchenko PV, Gutkin V., Mikhaylov AA, et. al. The formation of a peroxoantimonate thin film coating on graphene oxide (GO) and the influence of the GO on its transformation to antimony oxides and elemental antimony // *Carbon*. 2012. V. 50. P. 5463-5471.