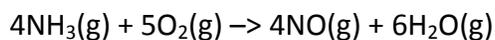


Question #57815, Chemistry / Inorganic Chemistry

Explain the preparation of nitric acid by Ostwald's process.

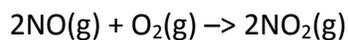
Answer:

Ostwald process consists from few stages through which nitric acid is produced from ammonia. As a first step, NH_3 and oxygen catalytically react to form nitrogen monoxide NO:



Industrial process occurs at 250 °C under 5-10 atm pressure on a Pt-Rh catalyst.

In the next step, NO is further oxidized with oxygen to nitrogen dioxide NO_2 . No catalyst is required for this reaction, as it will occur even in air at room temperature:



On the last stage NO_2 is absorbed with water to give nitric acid (HNO_3) and NO. The nitric acid is separated by distillation, and NO is again recycled to NO_2 .

