

## The Chemistry of Protactinium. II : The Behavior of Pentavalent Protactinium in a Perchloric Acid Solution

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**ABSTRACTS OF PAPERS  
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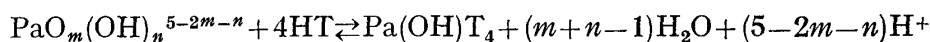
The Chemistry of Protactinium. II  
The Behavior of Pentavalent Protactinium in  
a Perchloric Acid Solution\*

Shin SUZUKI and Yasushi INOUE

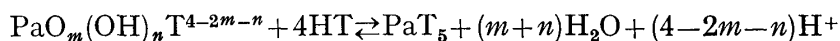
*The Research Institute for Iron, Steel and Other Metals*

**Abstract**

Studies of the chemical behavior of protactinium(V) were carried out with the TTA-benzene extraction method, the ion exchange method and the filtration method. When the protactinium concentration is less than  $10^{-6}\text{M}$  and the perchloric acid concentration is 0.3–2.0N, the reaction of TTA extraction may proceed as:



where  $2m+n$  is 3 and 4, or as:



where  $2m+n$  is 2 and 3.

The cation exchange experiment gives results consistent with this conclusion. On the other hand, when the concentration of protactinium is higher than  $10^{-6}\text{M}$ , the above relation does not hold, even in the 5N perchloric acid solution, because protactinium forms the aggregates to a great extent. This has been confirmed by the filtration experiment.

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\* The 1336th report of the Research Institute for Iron, Steel and Other Metals. Published in the Bulletin of the Chemical Society of Japan, **39** (1966), 1705.