

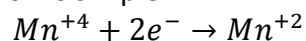
Answer on the question #62287, Chemistry / General Chemistry

Question:

How does Mn (IV) become Mn (II) in reaction?

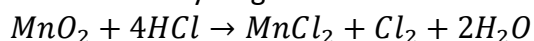
Answer:

The half-reaction of Mn(IV) reduction is simple:



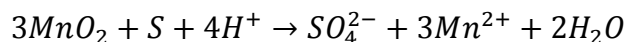
Then, different reactants can be used to reduce Mn(IV) to Mn(II). Firstly, one should note that Mn(IV) exists in nature manually in the form of Mn(IV) dioxide MnO₂.

For example, the MnO₂ can react with hydrogen chloride:



There, Mn(IV) becomes Mn(II).

One more example:



The reaction above is catalyzed by bacteria *D. desulfuricans*. This activity is not only of significance for the marine manganese cycle but also presents an important mechanism by which sulfate can be regenerated from reduced forms of sulfur anaerobically in the dark in marine sulfur cycle .

Materials:

1. Geomicrobiology, Fifth Edition. Henry Lutz Ehrlich, Dianne K. Newman 2009, Taylor & Francis group.

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