

Reduction Potential

Activity 1: Ranking Tasks – Oxidizing Agents

Question Group 1

Question 1

Use the Reduction Potential Table to rank the following substances according to their strength as an oxidizing agent.



Question 2

Use the Reduction Potential Table to rank the following substances according to their strength as an oxidizing agent.



Question 3

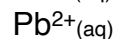
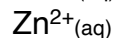
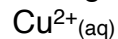
Use the Reduction Potential Table to rank the following substances according to their strength as an oxidizing agent.



Question Group 2

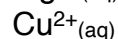
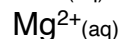
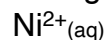
Question 4

Use the Reduction Potential Table to rank the following substances according to their strength as an oxidizing agent.



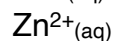
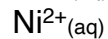
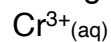
Question 5

Use the Reduction Potential Table to rank the following substances according to their strength as an oxidizing agent.

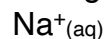


Question 6

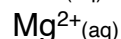
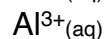
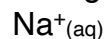
Use the Reduction Potential Table to rank the following substances according to their strength as an oxidizing agent.

**Question Group 2****Question 7**

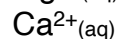
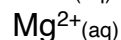
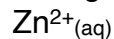
Use the Reduction Potential Table to rank the following substances according to their strength as an oxidizing agent.

**Question 8**

Use the Reduction Potential Table to rank the following substances according to their strength as an oxidizing agent.

**Question 9**

Use the Reduction Potential Table to rank the following substances according to their strength as an oxidizing agent.

**Activity 2: Ranking Tasks – Reducing Agents****Question Group 4****Question 10**

Use the Reduction Potential Table to rank the following substances according to their strength as a reducing agent.

$K_{(s)}$
 $Li_{(s)}$
 $Na_{(s)}$

Question 11

Use the Reduction Potential Table to rank the following substances according to their strength as an oxidizing agent.

$Mg_{(s)}$
 $Al_{(s)}$
 $Ca_{(s)}$

Question 12

Use the Reduction Potential Table to rank the following substances according to their strength as an oxidizing agent.

$Ca_{(s)}$
 $Zn_{(s)}$
 $Na_{(s)}$

Question Group 5

Question 13

Use the Reduction Potential Table to rank the following substances according to their strength as a reducing agent.

$Zn_{(s)}$
 $Cd_{(s)}$
 $Sn_{(s)}$

Question 14

Use the Reduction Potential Table to rank the following substances according to their strength as an oxidizing agent.

$Pb_{(s)}$
 $Cr_{(s)}$
 $Ni_{(s)}$

Question 15

Use the Reduction Potential Table to rank the following substances according to their strength as an oxidizing agent.

$Zn_{(s)}$
 $Cu_{(s)}$
 $Pb_{(s)}$

Question Group 6

Question 16

Use the Reduction Potential Table to rank the following substances according to their strength as a reducing agent.

Ag_(s)

Cu_(s)

Li_(s)

Question 17

Use the Reduction Potential Table to rank the following substances according to their strength as an oxidizing agent.

Mg_(s)

Ag_(s)

Pb_(s)

Question 18

Use the Reduction Potential Table to rank the following substances according to their strength as an oxidizing agent.

Sn_(s)

Na_(s)

Cr_(s)

Activity 3: Agents for Hire

Question Group 7

Question 19

Use the Reduction Potential Table to determine which of the listed reducing agents would be capable of reducing Cr³⁺_(aq) to Cr_(s). Select all that apply.

Ni_(s)

Li_(s)

Pb_(s)

Question 20

Use the Reduction Potential Table to determine which of the listed reducing agents would be capable of reducing Zn²⁺_(aq) to Zn_(s). Select all that apply.

Fe_(s)

K_(s)

$\text{Al}_{(\text{s})}$

Question 21

Use the Reduction Potential Table to determine which of the listed reducing agents would be capable of reducing $\text{Ni}^{2+}_{(\text{aq})}$ to $\text{Ni}_{(\text{s})}$. Select all that apply.

$\text{H}_{2(\text{g})}$

$\text{Cr}_{(\text{s})}$

$\text{Ca}_{(\text{s})}$

Question Group 8

Question 22

Use the Reduction Potential Table to determine which of the listed reducing agents would be capable of reducing $\text{Al}^{3+}_{(\text{aq})}$ to $\text{Al}_{(\text{s})}$. Select all that apply.

$\text{Mg}_{(\text{s})}$

$\text{Pb}_{(\text{s})}$

$\text{Cd}_{(\text{s})}$

Question 23

Use the Reduction Potential Table to determine which of the listed reducing agents would be capable of reducing $\text{Cr}^{3+}_{(\text{aq})}$ to $\text{Cr}_{(\text{s})}$. Select all that apply.

$\text{Ni}_{(\text{s})}$

$\text{Mg}_{(\text{s})}$

$\text{Na}_{(\text{s})}$

Question 24

Use the Reduction Potential Table to determine which of the listed reducing agents would be capable of reducing $\text{Pb}^{2+}_{(\text{aq})}$ to $\text{Pb}_{(\text{s})}$. Select all that apply.

$\text{Al}_{(\text{s})}$

$\text{Fe}_{(\text{s})}$

$\text{Cu}_{(\text{s})}$

Question Group 9

Question 25

Use the Reduction Potential Table to determine which of the listed reducing agents would be capable of reducing $\text{Cu}^{2+}_{(\text{aq})}$ to $\text{Cu}^{+}_{(\text{aq})}$. Select all that apply.

$\text{Ag}_{(\text{s})}$

$\text{Al}_{(\text{s})}$
 $\text{Mg}_{(\text{s})}$

Question 26

Use the Reduction Potential Table to determine which of the listed reducing agents would be capable of reducing $\text{Sn}^{4+}_{(\text{aq})}$ to $\text{Sn}^{2+}_{(\text{aq})}$. Select all that apply.

$\text{Hg}_{(\text{s})}$
 $\text{Zn}_{(\text{s})}$
 $\text{Mg}_{(\text{s})}$

Question 27

Use the Reduction Potential Table to determine which of the listed reducing agents would be capable of reducing $\text{H}^{+}_{(\text{aq})}$ to $\text{H}_{2(\text{g})}$. Select all that apply.

$\text{Cu}_{(\text{s})}$
 $\text{Al}_{(\text{s})}$
 $\text{Ag}_{(\text{s})}$

Question Group 10

Question 28

Use the Reduction Potential Table to determine which of the listed oxidizing agents would be capable of oxidizing $\text{Mn}^{2+}_{(\text{aq})}$ to $\text{MnO}_{4(\text{s})}$ (in acidic solution). Select all that apply.

$\text{F}_{2(\text{g})}$
 $\text{Ag}^{+}_{(\text{aq})}$
 $\text{Br}_{2(\text{l})}$

Question 29

Use the Reduction Potential Table to determine which of the listed oxidizing agents would be capable of oxidizing $\text{Cl}^{-}_{(\text{aq})}$ to $\text{Cl}_{2(\text{g})}$. Select all that apply.

$\text{NO}_{3}^{-}_{(\text{aq})}$
 $\text{I}_{2(\text{s})}$
 $\text{Co}^{3+}_{(\text{aq})}$

Question 30

Use the Reduction Potential Table to determine which of the listed oxidizing agents would be capable of oxidizing $\text{Br}^{-}_{(\text{aq})}$ to $\text{Br}_{2(\text{g})}$. Select all that apply.

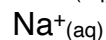
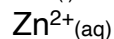
$\text{S}_{2}\text{O}_{8}^{2-}_{(\text{aq})}$
 $\text{Hg}^{2+}_{(\text{aq})}$



Question Group 11

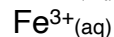
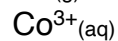
Question 31

Use the Reduction Potential Table to determine which of the listed oxidizing agents would be capable of oxidizing $\text{Ag}_{(\text{s})}$ to $\text{Ag}^{+}_{(\text{aq})}$. Select all that apply.



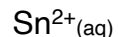
Question 32

Use the Reduction Potential Table to determine which of the listed oxidizing agents would be capable of oxidizing $\text{Hg}_{(\text{l})}$ to $\text{Hg}^{2+}_{(\text{aq})}$. Select all that apply.



Question 33

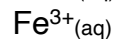
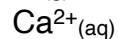
Use the Reduction Potential Table to determine which of the listed oxidizing agents would be capable of oxidizing $\text{Cu}_{(\text{s})}$ to $\text{Cu}^{+}_{(\text{aq})}$. Select all that apply.



Question Group 12

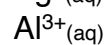
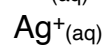
Question 34

Use the Reduction Potential Table to determine which of the listed oxidizing agents would be capable of oxidizing $\text{Sn}_{(\text{s})}$ to $\text{Sn}^{2+}_{(\text{aq})}$. Select all that apply.



Question 35

Use the Reduction Potential Table to determine which of the listed oxidizing agents would be capable of oxidizing $\text{Cr}_{(\text{s})}$ to $\text{Cr}^{3+}_{(\text{aq})}$. Select all that apply.



Question 36

Use the Reduction Potential Table to determine which of the listed oxidizing agents would be capable of oxidizing $\text{Al}(\text{s})$ to $\text{Al}^{3+}(\text{aq})$. Select all that apply.

