

Oxidation Numbers Quiz PDF

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What is the oxidation number of an element in its elemental form?

- +1
- 0
- 1
- +2

Which elements can have multiple oxidation states? (Select all that apply)

- Iron
- Oxygen
- Copper
- Sodium

Which of the following elements always has an oxidation number of +1 in compounds?

- Oxygen
- Hydrogen
- Sodium
- Chlorine

Which of the following statements about oxidation numbers is true? (Select all that apply)

- The sum of oxidation numbers in a neutral compound is zero.
- The oxidation number of hydrogen is always +1.
- The oxidation number of a monatomic ion is equal to its charge.
- Oxygen always has an oxidation number of -2.

What is the typical oxidation number of oxygen in most compounds?

- +1
- 0

- 1
- 2

What is the oxidation number of sulfur in SO_4^{2-} ?

- +2
- +4
- +6
- 2

Which of the following compounds contains oxygen with an oxidation number of -1?

- H_2O
- CO_2
- Na_2O_2
- O_2

In the compound KMnO_4 , what is the oxidation number of manganese (Mn)?

- +2
- +4
- +7
- +5

What is the oxidation number of chlorine in Cl_2 ?

- +1
- 0
- 1
- +2

Which of the following elements typically have a fixed oxidation number in compounds? (Select all that apply)

- Sodium
- Oxygen
- Chlorine
- Potassium

In which of the following compounds does oxygen have an oxidation number different from -2?
(Select all that apply)

- H_2O
 H_2O_2
 Na_2O_2
 CO_2

In which compound does hydrogen have an oxidation number of -1?

- H_2O
 HCl
 NaH
 NH_3

Explain why the oxidation number of oxygen is typically -2 in compounds, but -1 in peroxides.

Describe the process of determining the oxidation number of an element in a compound.

How do oxidation numbers help in balancing redox reactions? Provide an example.

Why do transition metals often have multiple oxidation states? Give an example of a transition metal and its oxidation states.

Discuss the significance of oxidation numbers in identifying oxidizing and reducing agents in a chemical reaction.

Explain how the oxidation number of an element in a polyatomic ion is determined, using sulfate (SO_4^{2-}) as an example.

Which of the following compounds contain hydrogen with an oxidation number of +1? (Select all that apply)

- H₂O
- CH₄
- NaH
- HCl

In which of the following ions is the sum of oxidation numbers equal to the charge of the ion? (Select all that apply)

- NH₄⁺
- SO₄²⁻
- NO₃⁻
- ClO₄⁻