

# Redox Reactions

## Oxidation

Loss of electron

Gain of oxygen

Loss of hydrogen

Gain in oxidation state

## Reduction

Gain of electron

Gain of hydrogen

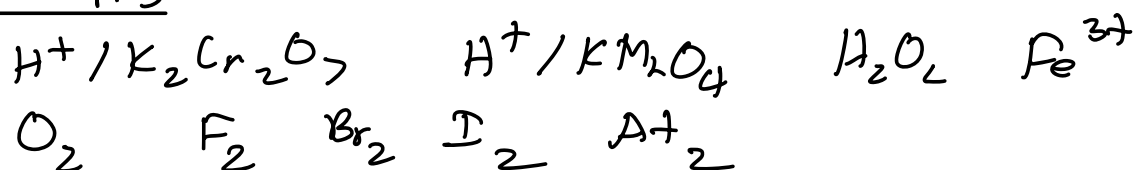
Loss of oxygen

Decrease in oxidation state

## Oxidising agent

- ⊖ Oxidised others and reduced by itself
- ⊖ Oxidising agents represent reduction.

## Examples



Tollen's reagent (Mild oxidising agent)

Fehling's solutions (Mild oxidising agent)

### Reducing Agent

- ⊖ Reduces others and oxidised by itself.
- ⊖ Reducing agents represent oxidation.

### Example

$H_2$

Metals

Halides ( $F^-$ ,  $Cl^-$ ,  $Br^-$ ,  $I^-$ ,  $At^-$ )

Carbon monoxide

Carbon

Hydrogen Peroxide

Alcohol

$NaBH_4$

$LiAlH_4$  (in dry ether)

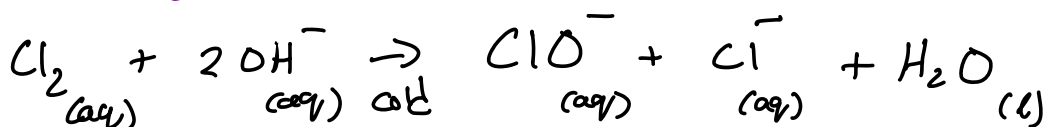
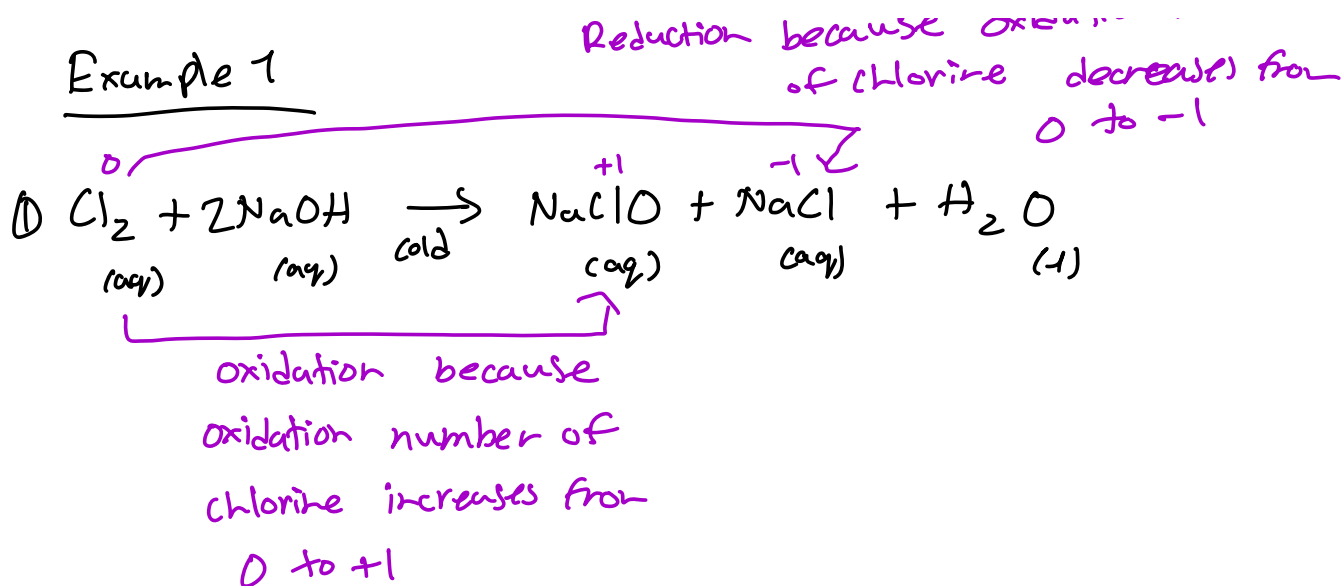
Sulfur dioxide

### Disproportionation

One of the reactants show oxidation and reduction in a chemical reaction.

... oxidation number

### Example 1



### Reaction of chlorine with hot sodium hydroxide solution

