# List of reagents on cleavage of carbon oxygen bond in ether

- Water
- Halogen acids
- Sulphuric acids
- · Phosphorus pentachloride

## Expression for reaction of cleavage of carbon oxygen bond in ether by water

$$R-O-R^{\dagger}+HO-H->ROH+R^{\dagger}OH$$

### Reactants for reaction of cleavage of carbon oxygen bond in ether by water

- Ether
- Water

#### Products for reaction of cleavage of carbon oxygen bond in ether by water

- Alkyl alcohol
- · Alkyl 2 alcohol

#### Condition for reaction of cleavage of carbon oxygen bond in ether by water

Boiling water

#### List of conditions for reaction of ethers with halo acids

- Cold
- Higher temperature / Excess acid

#### List of reactivity of order of halo acids in reaction of ether

$$HI>HBr>HCl$$

Expression for reaction of cleavage of carbon oxygen bond in ether by halo acid in cold

$$R-O-R+HX \longrightarrow ROH+RX$$

Reactants for reaction of cleavage of carbon oxygen bond in ether by in cold

- Ether
- · Halo acid

Products for reaction of cleavage of carbon oxygen bond in ether by haloacid in cold

- Alcohol
- Haloalkane

Size of alkyl group taken by haloalkane on unsymmetrical ether of primary or secondary alkyl groups in cleavage of carbon oxygen bond in ether by haloacid in cold

Smaller

Haloalkane formed is from the small sized alkyl group

Branching of alkyl group taken by haloalkane on tertiary alkyl group groups in cleavage of carbon oxygen bond in ether by haloacid in cold

Tertiary halide

Haloalkane formed is tertiary halide

Expression for reaction of cleavage of carbon oxygen bond in ether by halo acid in high temperature

$$R-O-R+HX \longrightarrow RX+H_2O$$

Reactants for reaction of cleavage of carbon oxygen bond in ether by halo acid in high temperature

- Ether
- · Excess Halo acid

Products for reaction of cleavage of carbon oxygen bond in ether by halo acid in high temperature

- Haloalkane
- Water

List of steps involved at cleavage of carbon oxygen bond in ether by halo acid

- · Protonation of ether by hydrogen from acid
- · Nucleophilic attack by halide ion

Type of reaction mechanism exhibited by cleavage of carbon oxygen bond in ether by halo acid on primary or secondary alkyl groups

SN2

Type of reaction mechanism exhibited by cleavage of carbon oxygen bond in ether by halo acid on tertiary alkyl groups

SN1

Effect of cold conc sulphuric acid on carbon oxygen bond of ether

Null

Expression for reaction of cleavage of carbon oxygen bond in ether by sulphuric acid

$$R-O-R + H_2SO_4 \xrightarrow{\triangle} ROH + RSO_4$$

Reactants for reaction of cleavage of carbon oxygen bond in ether by sulphuric acid

- Ether
- · Conc Sylphuric acid

Products for reaction of cleavage of carbon oxygen bond in ether by sulphuric acid

- Alkanol
- Alkyl hydrogen sulphate

Condition for reaction of cleavage of carbon oxygen bond in ether by sulphuric acid

Heat

Expression for reaction of cleavage of carbon oxygen bond in ether by phosphorus penta chloride

$$R-O-R+PCl_5 \xrightarrow{\triangle} RCl+POCl_3$$

Reactants for reaction of cleavage of carbon oxygen bond in ether by phosphorus penta chloride

- Ether
- · Phosphorus penta chloride

Products for reaction of cleavage of carbon oxygen bond in ether by phosphorus penta chloride

- · Alkyl Halide
- · Phosphoryl chloride

Molecular formula of phosphoryl chloride

POCl<sub>3</sub>

Condition for reaction of cleavage of carbon oxygen bond in ether by phosphorus penta chloride

Heat