

Alkane → Bromo or chloro alkane	Alkene → Bromoalkane	Alkene → alkane
Haloalkane → alcohol	1° alcohol → aldehyde	1° alcohol → carboxylic acid
2° alcohol → ketone	Alcohol → alkene	
Alcohol → haloalkane	Alkene → Dibromoalkane	Alkene → Alcohol

<p><b>Reagents:</b> hydrogen <b>Conditions:</b> Ni catalyst</p>	<p><b>Reagents:</b> HBr <b><u>Mechanism:</u></b> Electrophilic addition</p>	<p><b>Reagents:</b> Bromine or chlorine <b>Conditions:</b> UV light <b><u>Mechanism:</u></b> Free radical substitution</p>
<p><b>Reagents:</b> <math>K_2Cr_2O_{7(aq)}</math>, <math>H_2SO_{4(aq)}</math> <b>Conditions:</b> heat, reflux <b>Reaction type:</b> Oxidation</p>	<p><b>Reagents:</b> <math>K_2Cr_2O_{7(aq)}</math>, <math>H_2SO_{4(aq)}</math> <b>Conditions:</b> heat, distillation <b>Reaction type:</b> Oxidation</p>	<p><b>Reagents:</b> NaOH(aq) <b><u>Mechanism:</u></b> Nucleophilic substitution  (OR <math>H_2O</math>/ethanol and <math>AgNO_3</math> to give ppt of AgX and enable C-X bond strength to be studied)</p>
	<p><b>Conditions:</b> heat AND acid catalyst (e.g. conc. <math>H_2SO_4</math> / <math>H_3PO_4</math>) <b>Reaction type:</b> elimination (dehydration)</p>	<p><b>Reagents:</b> <math>K_2Cr_2O_{7(aq)}</math>, <math>H_2SO_{4(aq)}</math> <b>Conditions:</b> reflux <b>Reaction type:</b> Oxidation</p>
<p><b>Reagents:</b> steam <b>Conditions:</b> <math>H_3PO_4</math> catalyst <b><u>Mechanism:</u></b> Electrophilic addition</p>	<p><b>Reagents:</b> <math>Br_2</math> <b><u>Mechanism:</u></b> Electrophilic addition</p>	<p><b>Reagents:</b> NaX (e.g. NaBr) <b>Conditions:</b> <math>H_2SO_4</math></p>