

<p style="text-align: center;"><b>SUBSTITUTION</b></p> <p><i>An atom / group of atoms is replaced by another atom / group of atoms.</i></p> <p>Alkanes with halogens: Alkane → Haloalkane (limited to monosubstitution)</p> <p>Alcohols with hydrogen halides, PCl<sub>3</sub>, PCl<sub>5</sub>, SOCl<sub>2</sub>: Alcohol → Haloalkane</p> <p>Haloalkanes with NH<sub>3</sub>(alc): Haloalkane → Amine</p> <p>Haloalkanes with KOH(aq): Haloalkane → Alcohol</p>	<p style="text-align: center;"><b>ADDITION</b></p> <p><i>Reactions in which atoms or group of atoms are added to a molecule, across a C=C bond, forming a C-C bond. (* major/minor products if applicable)</i></p> <p>Alkenes with H<sub>2</sub>/Pt: Alkene → Alkane</p> <p>Alkenes with Cl<sub>2</sub>, Br<sub>2</sub>: Alkene → Haloalkane</p> <p>Alkenes with hydrogen halides: Alkene → Haloalkane</p> <p>Alkenes with H<sub>2</sub>O/H<sup>+</sup> (conc. H<sub>2</sub>SO<sub>4</sub>/H<sub>2</sub>O): Alkene → Alcohol</p> <p>Polymerisation of alkenes: Alkene → Polymer</p>	
<p style="text-align: center;"><b>ELIMINATION</b></p> <p><i>A C=C bond is formed in a molecule by the removal of atoms / groups of atoms from adjacent carbon atoms. (* major/minor products if applicable)</i></p> <p>Alcohols with conc. H<sub>2</sub>SO<sub>4</sub>: Alcohols → alkenes</p> <p>Haloalkanes with KOH(alc): Haloalkanes → alkenes</p>	<p style="font-size: 1.2em; margin: 0;"><b>TYPES OF REACTION</b></p>	<p style="text-align: center;"><b>ACID-BASE</b></p> <p><i>Reaction of a carboxylic acid with a base such as NaOH or Na<sub>2</sub>CO<sub>3</sub> - a salt is formed</i></p> <p><i>Reaction of an amine with an acid such as HCl - a salt is formed</i></p>
<p style="text-align: center;"><b>OXIDATION</b></p> <p><i>Any combustion reaction</i></p> <p><i>A reaction involving an oxidising agent such as MnO<sub>4</sub><sup>-</sup>/H<sup>+</sup> or Cr<sub>2</sub>O<sub>7</sub><sup>2-</sup>(aq)</i></p> <p>Alkene with MnO<sub>4</sub><sup>-</sup> : Alkene → diol</p> <p>1° Alcohol with oxidising agent: Primary Alcohol → carboxylic acid</p>		