

Arrange the mechanism steps in order:

Addition of bromine to an alkene

| Steps | Mechanism |
|--------|---|
| Step 1 | As a bromine molecule approaches an alkene, the electron density of the alkene π bond repels electron density in the closer bromine, polarising the bromine molecule and making the closer bromine atom electrophilic. The alkene donates a pair of electrons to the closer bromine, causing displacement of the distant bromine atom, due to its size and polarizability, donates an electron pair to the carbon that would otherwise be a carbocation, thereby stabilizing the positive charge by delocalization. The result is a bridged bromonium ion intermediate. |
| Step 2 | A bromide anion attacks at the back side of one carbon of the bromonium ion in an S_N2 reaction, causing the ring to open and resulting in the formation of a <i>vic</i> -dibromide. |

Addition of a hydrogen halide to an alkene

| Steps | Mechanism |
|--------|---|
| Step 1 | The π electrons of the alkene form a bond with a proton from HX to form a carbocation and a halide ion. |
| Step 2 | The halide ion reacts with the carbocation by donating an electron pair; the result is an alkyl halide. |

