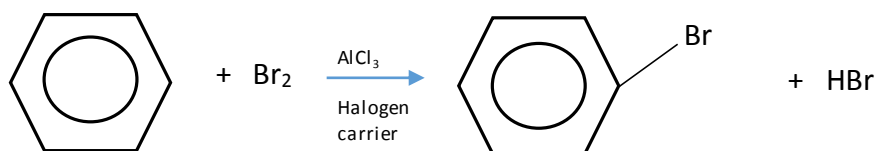
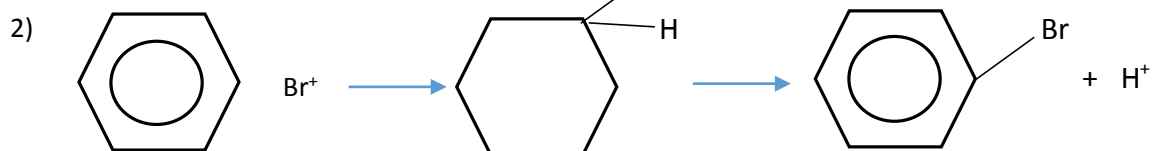
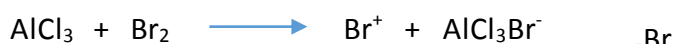


Overall equation:



Mechanism:

1) Generation of electrophile



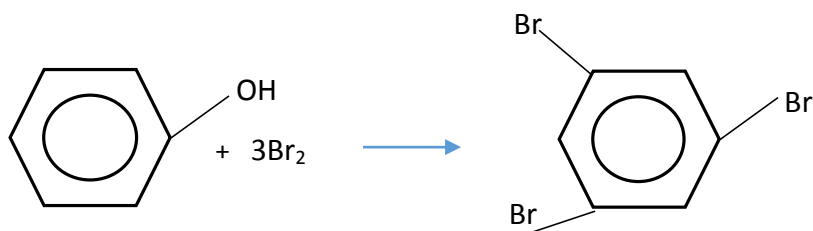
3) Regenerate catalyst

Phenols

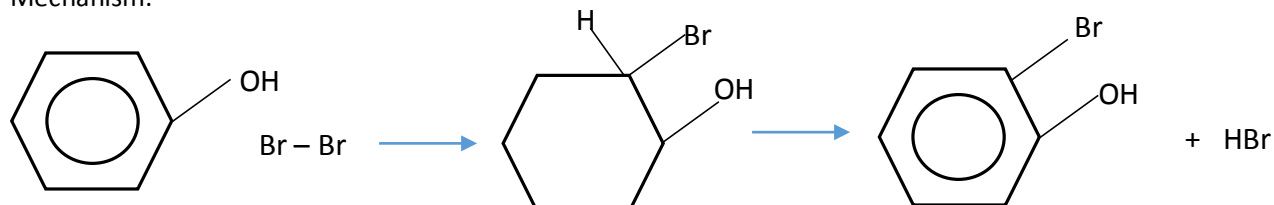
	Na	NaOH	Na ₂ CO ₃
R-COOH	♥	♥	♥
Phenol	♥	♥	⊘
R-OH	♥	⊘	⊘

Phenol will react with Br₂ via electrophilic substitution:

Overall equation:



Mechanism:



Amines

1°



2°



3°

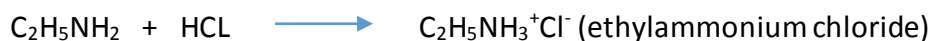


Amines are soluble in water:



Hydrogen bonds form via H of the amine and a lone pair on the oxygen in the water. If there is H directly next to N, O or F within a molecule, H bonding will take place between molecules.

Amines are bases:



“proton acceptor” – Proton accepted via lone pair on nitrogen to form a dative covalent bond.



Amino acids:

α amino acids – amine and carboxylic acid attached to same carbon.

Zwitterion: An internal salt with no overall charge

Isoelectric point:

The pH at which the zwitterion forms; the isoelectric point is determined by the R-side chain therefore different amino acids have different isoelectric points.