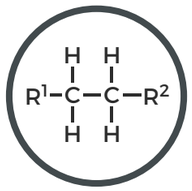
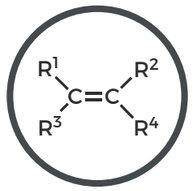
FUNCTIONAL GROUPS IN ORGANIC CHEMISTRY

Functional groups are the characteristic groups in organic molecules that give them their reactivity. In the formulae below, R represents the rest of the molecule and X represents any halogen atom.

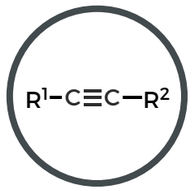
Hydrocarbons | Halogen-containing groups | Oxygen-containing groups | Nitrogen-containing groups | Sulfur-containing groups | Phosphorus-containing groups



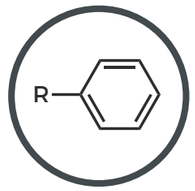
ALKANE
Naming: -ane
e.g. ethane



ALKENE
Naming: -ene
e.g. ethene

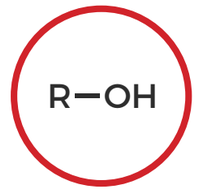


ALKYNE
Naming: -yne
e.g. ethyne

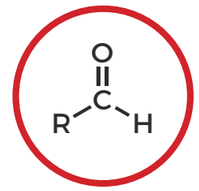


ARENE
Naming: -yl benzene
e.g. ethyl benzene

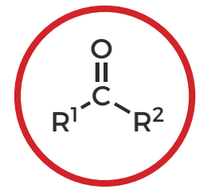
HALOALKANE
Naming: halo-
e.g. chloroethane



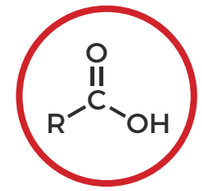
ALCOHOL
Naming: -ol
e.g. ethanol



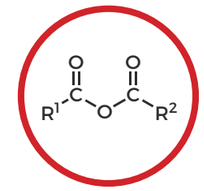
ALDEHYDE
Naming: -al
e.g. ethanal



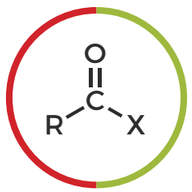
KETONE
Naming: -one
e.g. propanone



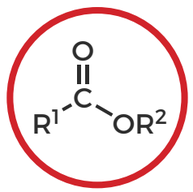
CARBOXYLIC ACID
Naming: -oic acid
e.g. ethanoic acid



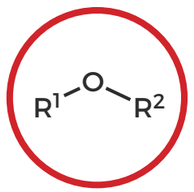
ACID ANHYDRIDE
Naming: -oic anhydride
e.g. ethanoic anhydride



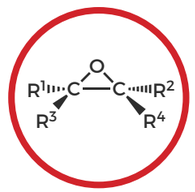
ACYL HALIDE
Naming: -oyl halide
e.g. ethanoyl chloride



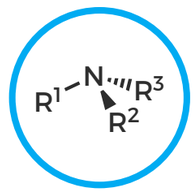
ESTER
Naming: -yl -oate
e.g. ethyl ethanoate



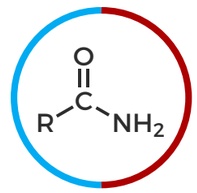
ETHER
Naming: -oxy -ane
e.g. methoxyethane



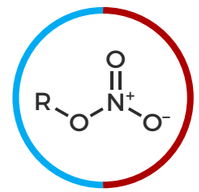
EPOXIDE
Naming: -ene oxide
e.g. ethene oxide



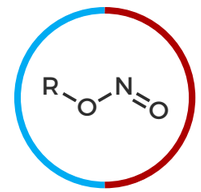
AMINE
Naming: -amine
e.g. ethanamine



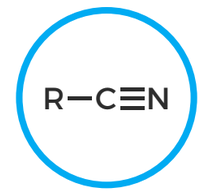
AMIDE
Naming: -amide
e.g. ethanamide



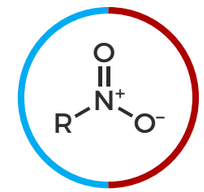
NITRATE
Naming: -yl nitrate
e.g. ethyl nitrate



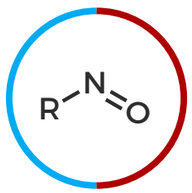
NITRITE
Naming: -yl nitrite
e.g. ethyl nitrite



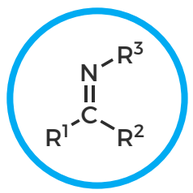
NITRILE
Naming: -nitrile
e.g. ethanenitrile



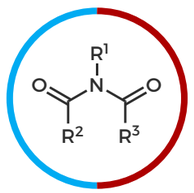
NITRO
Naming: nitro-
e.g. nitromethane



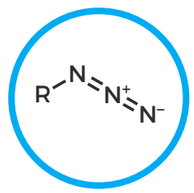
NITROSO
Naming: nitroso-
e.g. nitrosoethane



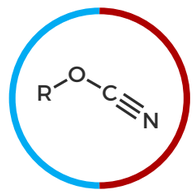
IMINE
Naming: -imine
e.g. ethanimine



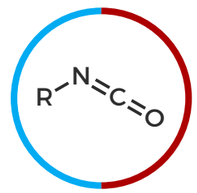
IMIDE
Naming: -imide
e.g. succinimide



AZIDE
Naming: -yl azide
e.g. phenylazide



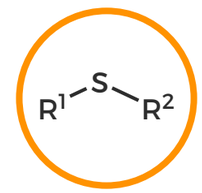
CYANATE
Naming: -yl cyanate
e.g. methyl cyanate



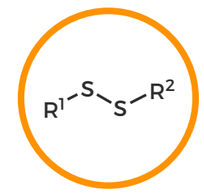
ISOCYANATE
Naming: -yl isocyanate
e.g. methyl isocyanate

AZO COMPOUND
Naming: azo-
e.g. azoethane

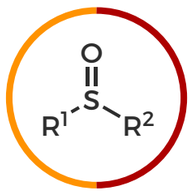
THIOL
Naming: -thiol
e.g. methanethiol



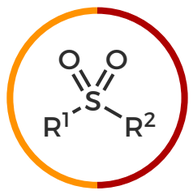
SULFIDE
Naming: sulfide
e.g. dimethyl sulfide



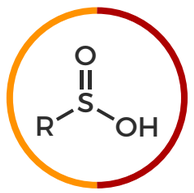
DISULFIDE
Naming: disulfide
e.g. dimethyl disulfide



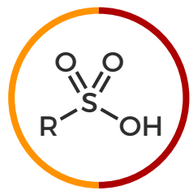
SULFOXIDE
Naming: sulfoxide
e.g. dimethyl sulfoxide



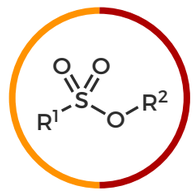
SULFONE
Naming: sulfone
e.g. dimethyl sulfone



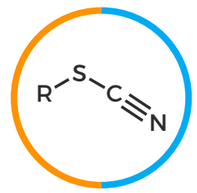
SULFINIC ACID
Naming: -sulfinic acid
e.g. benzenesulfinic acid



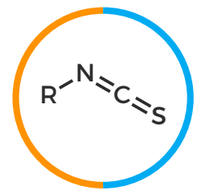
SULFONIC ACID
Naming: -sulfonic acid
e.g. benzenesulfonic acid



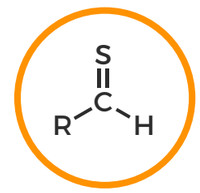
SULFONATE ESTER
Naming: -yl sulfonate
e.g. methylmethanesulfonate



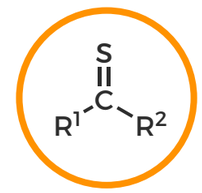
THIOCYANATE
Naming: thiocyanate
e.g. ethyl thiocyanate



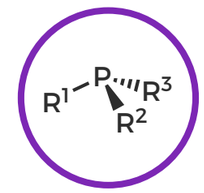
ISOTHIOCYANATE
Naming: isothiocyanate
e.g. ethyl isothiocyanate



THIAL
Naming: -thial
e.g. ethanethial



THIOKETONE
Naming: -thione
e.g. propanethione



PHOSPHINE
Naming: phosphane
e.g. methylphosphane