Point Group: $\mathrm{C}_{\mathrm{s}}$

# $\mathrm{H}_{3} \mathrm{C}-\mathrm{OH}$ <br> Methanol 



## Point Group: $\mathbf{C}_{\mathbf{1}}$



F
Bromochlorofluoromethane

Point Group: $\mathbf{C}_{\mathbf{i}}$


1,2-dichloro-1,2-dibromoethane


1,2-dichloro-1,2-dibromoethane

## Point Group: $\mathrm{C}_{\mathbf{2}}$

$\mathrm{HO}-\mathrm{OH}$
Hydrogen Peroxide


Hydrogen Peroxide


Hydrazine

## Point Group: $\mathrm{C}_{3}$



Triphenylphosphine

## Point Group: $\mathrm{C}_{2}$ v



Acetone


Triphenylphosphine


Cyclopentadiene
$\mathrm{H}^{-}{ }^{-}{ }_{\mathrm{H}}$


## Sulfur Tetrafluoride

Sulfur Tetrafluoride


Cyclohexane (Boat)

## Point Group: C3v



Ammonia


Ammonia


Chloromethane


Chloroform


Phosphoryl Trichloride


Chloromethane


Chloroform



Phosphorous Trichloride


Phosphorous Trichloride


Xenon Hexafluoride

Point Group: C4v


Sulfur Chloride Pentafluoride

Point Group: C5v


Cyclopentadienyl Nitrosyl Nickel

Point Group: $\mathbf{C}_{2 h}$

(E)-Difluorodiazene


1,2-Difluoroethylene


## Point Group: $\mathrm{C}_{3 \mathrm{~h}}$

#  <br> Boric Acid 



Trihydroxybenzene

Point Group: C4h


Tetraazidocopper

Point Group: $\mathbf{C}_{\infty}$ V

$\mathrm{H}-\mathrm{F}$
Hydrogen
Fluoride

O三C
Carbon
Monoxide

$$
\mathrm{H}-\mathrm{C} \equiv \mathrm{~N}
$$

## Hydrogen Cyanide

## Point Group: $\mathbf{D}_{\mathbf{2}}$



Biphenyl

Point Group: $\mathbf{D}_{3}$


Tris(ethylenediamine)cobalt(III)

Point Group: $\mathbf{D}_{\mathbf{2 h}}$


Ethylene


Napthalene


Diborane


Diborane

## Point Group: $\mathbf{D}_{3 h}$



Cyclopropane

Phosphorus Pentafluoride


Ethane (Eclipsed)

Point Group: D4h


F
Cyclobutadiene
Xenon Tetrafluoride

Point Group: Dh $_{5}$


## Cyclopentadienyl

## Point Group: D $_{\text {6 }}$



## Benzene

Point Group: $\mathrm{D}_{2 \mathrm{~d}}$


Allene


Allene

Point Group: D 3 d


Cyclohexane (Chair)
Ethane (Staggered)

Point Group: $\mathrm{D}_{\mathbf{4 d}}$


Octasulfur


Octasulfur

## Point Group: Dad $_{5}$



Ferrocene

## Point Group: $\mathrm{D}_{\text {ch }}$

$$
\mathrm{O}=\mathrm{C}=\mathrm{O}
$$

Carbon Dioxide
$-\mathrm{N}=\mathrm{N}^{+}=\mathrm{N}^{-}$
Azide
$F-F$
Fluorine
$\mathrm{O}=\mathrm{O}$
Oxygen

Point Group: $\mathbf{S}_{\mathbf{4}}$


12-crown-4

Point Group: $\mathbf{S}_{6}$


## Point Group: $\mathbf{T}_{\mathbf{d}}$



Methane


Ammonium


Methane


Ammonium

Point Group: $\mathbf{O}_{\mathrm{h}}$


## Sulfur Hexafluoride

Point Group: $\mathbf{I}_{\mathbf{h}}$


Buckyball

