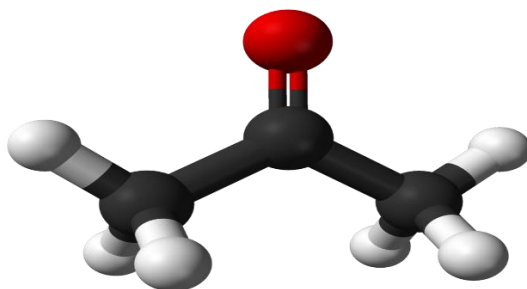


Acetone:

Acetone is an important and well-known chemical compound that is the simplest and smallest member of the ketone family. This substance is a colorless liquid, also known as propanone.

One of the most important characteristics of acetone is its high solubility in water and many organic solvents. This feature makes acetone commonly used as a solvent in laboratories and chemical industries.

Structure:



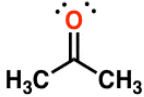
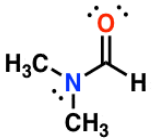
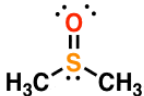
Specifications:

Parameter	Spec.	UNIT
IUPAC name	Acetone	---
CAS No.	67-64-1	---
Molar mass	58.080	$\text{g}\cdot\text{mol}^{-1}$
Description	Colorless liquid	Visual
Density @ 15 °C	0.7845	g/cm^3
Boiling Point	56.08	°C
Solubility in water	Miscible	%

Applications:



Comparison of dielectric constant and dipole moment of Acetone with a number of solvents:

Polar Aprotic Solvents		Dielectric constant	Dipole Moment
	Acetone	21	2.88 D
	<i>N,N</i> -Dimethylformamide (DMF)	38	3.82 D
$\text{H}_3\text{C}-\text{C}\equiv\text{N}:$	Acetonitrile (MeCN)	37	3.92 D
	Dimethyl sulfoxide (DMSO)	47	3.96 D

Common applications of these solvents:

Acetone, DMF, Acetonitrile, DMSO: As solvents in $\text{S}_{\text{N}}2$ reactions

