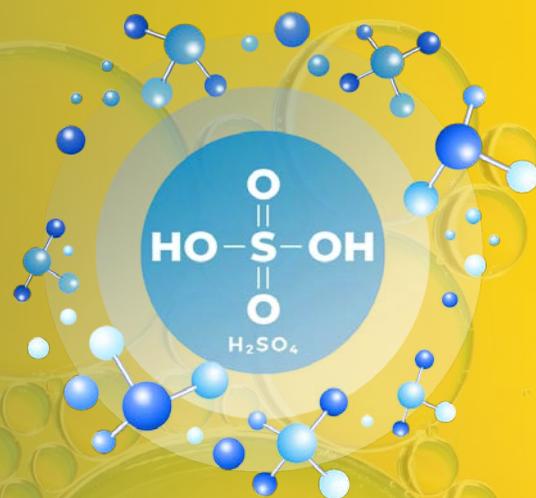


Sulphuric Acid Fact Sheet



An Introduction to Sulphuric Acid

Sometimes referred to as the “King of Chemicals,” sulphuric acid is a strong inorganic acid (H₂SO₄) that is soluble in water at all concentrations and is produced in greater amounts than any other chemical besides water.

Sulphuric acid, the world’s most widely used chemical, is a key intermediate in chemical and manufacturing industries, supporting processes from metals to fertilizers.

Primary uses include: Ore processing (copper, nickel, lithium); phosphate fertilizer manufacturing; nitrogen, potassium, and sulphate fertilizer production; oil refining; wastewater treatment; and chemical synthesis.

Sulphuric acid is preferred over acids like HCl, HNO₃, and HF because it is strong, low-volatility, recyclable, and safer for large-scale use.

Sulphuric acid is often recovered and recycled from the gasoline alkalization process supporting a circular economy.

Sulphuric acid is a preferred acid due to its ready availability, economic advantages, and its superior chemical qualities.

Understanding The Chemical Properties of Sulphuric Acid

Strong Acidity

Sulphuric acid is a very strong acid — it ionizes completely in water to give hydrogen ions (H⁺) and hydrogen sulphate ions (HSO₄⁻).

Reacts with Metals

With active metals (like zinc), dilute sulphuric acid produces hydrogen gas.

Dehydrating Agent

Sulphuric acid removes water (H₂O) from substances. It can dehydrate sugars, paper, and even some gases.

Oxidizing Agent

Concentrated sulphuric acid can act as a powerful oxidizer. It can oxidize metals (like copper) and non-metals (like carbon and sulphur).

Reacts with Bases and Carbonates

Reacts with bases (e.g., sodium hydroxide) to form salt and water (neutralization) and carbonates to form salt, water, and carbon dioxide.



SULPHURIC ACID

Color

Colorless to slightly yellow thick liquid

Odor

Odorless (irritating vapors when hot)

Melting Point

Liquid above 10.4°C (50.7°F)

Boiling Point

337°C (639°F)

Density

1.84 g/cm³ at 20°C (68°F)

Solubility in Water

Highly soluble (exothermic dissolution)

Flammability

Non-flammable

Solubility

Soluble in polar solvents like ethanol

Allotropic Forms

None

Heat Conductivity

Low

Electrical Conductivity

Good (when dissolved in water)

Reactivity

Highly reactive with water, metals, bases

Viscosity

Very viscous (oily liquid)

Oxidation States

+6 for sulphur

SULPHURIC ACID MANUFACTURING PROCESS



For more information

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