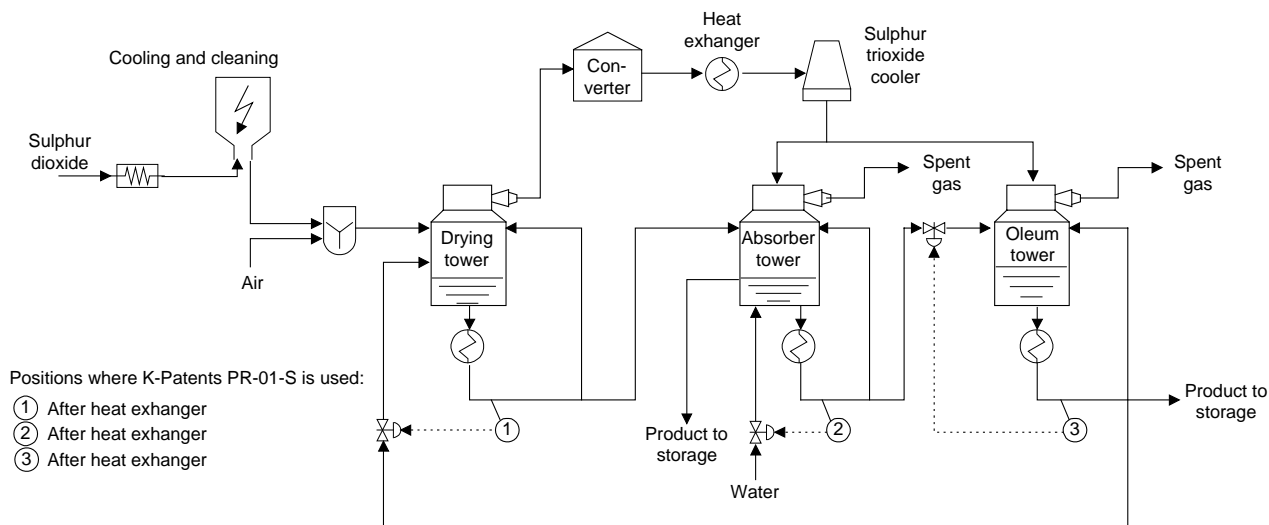


Sulphuric Acid



Sulphuric Acid (H₂SO₄)

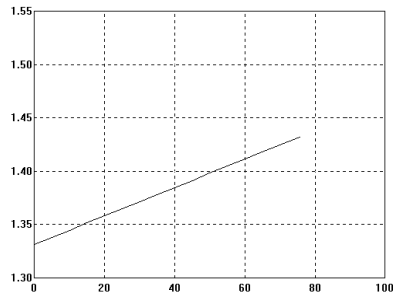
Soluble in water

Typical end products/users

Fertilizer, metallurgical, fibres and explosives industry, ammonium sulphate, sodium sulphate, titanium dioxide, alcohols, ethers

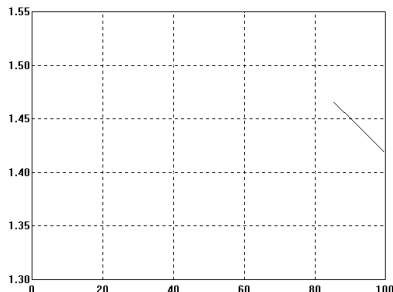
Chemical curve: R.I. per Conc% b.w.

0-80%



R.I. Ref. temp. 20°C

94-100%



R.I. Ref. temp. 20°C

See also

Oleum 4.09.06

Introduction

Sulphuric acid is a dense, colourless liquid at room temperature. It is a very active chemical and widely used in the preparation of a large number of chemicals. This strong inorganic acid is also inexpensive to manufacture.

The H₂SO₄ solution may be economically concentrated to about 93% by weight of H₂SO₄. Stronger acids may be made by dissolving sulphur trioxide in 98 to 99% acid. Sulphuric acid is widely sold in the form of various solutions of H₂SO₄ in water, or of SO₃ in H₂SO₄. The latter are called oleums and are marketed on the basis of the percentage of SO₃ present.

Application

Two processes are used commercially to produce sulphuric acid: the contact process, where the important sulphur dioxide to sulphur trioxide step is accomplished heterogeneously over a solid catalyst with air, and the chamber process where this

transfer of oxygen from air to sulphur dioxide is accomplished with a gaseous catalyst.

Of the two, the contact process is used to produce more than 95% of the supply of sulphuric acid at present, both in Europe and in North America.

Installation

K-Patents Process Refractometer, PR-01-S is used in the absorber tower to keep the concentration of H₂SO₄ constant at 93, 98 or 104% by weight.

The final product is viscous with a temperature of 80°C (180°F) containing small air bubbles, which cause errors in density meters. These errors can be avoided by using digital refractometer that supplies accurate and reliable concentration measurement.

Standard sensor material SS316 is usually used in the high acid concentrations (over 90%) at ambient temperature, although other materials like Hastelloy C are also available.