



NITROGLYCERINE, $\text{CH}_2(\text{ONO}_2)\text{-CH}_2(\text{ONO}_2)\text{-CH}_2(\text{ONO}_2)$

Typical end products

Explosives (dynamite and propellants), medicines

Application

Nitroglycerine is an oily liquid, which is prepared by treating glycerine with a mixture of nitric acid and sulfuric acids. The pure nitroglycerine is a colorless, odorless and insoluble in water. It is a very powerful and dangerous explosive, and is never to be used alone due to its sensitivity.

Application

Nitroglycerine is manufactured by nitration of natural or synthetic glycerine. Nitration is effected by slowly adding high purity glycol and glycerol to the mixture, having the approximate composition of 59.5% H_2SO_4 , 40% HNO_3 and 0.5% H_2O . After nitration the

mixture of nitroglycerin and nitroglycol, with acid in the solution (phase 1) is sent to neutralization. The waste acid and a small amount of nitroglycerine and nitroglycol (phase 3) go to waste acid treatment.

Installation

Sometimes phase two (2) becomes thick and results in an inversion phase. This is extremely dangerous, as the probability for an explosive reaction in the waste acid treatment is very high.

The K-Patents Process Refractometer PR-23-GP is used for safety control by continuously monitoring the nitroglycerine and nitroglycol concentration in the waste.

Typical measurement range for nitroglycerine is 1,43-1,45 R.I. and the process temperature is about 20-30°C (68-86°F). Appropriate equipment with hazardous and intrinsic safety approvals are available when required.

Instrumentation



Description

K-Patents Process Refractometer PR-23-GP is an industrial refractometer for large pipe sizes and tanks, cookers, crystallizers and kettles. Installation through a flange or clamp connection.

Area classification:

Intrinsic safety and hazardous area approvals available.

Measurement range:

Refractive Index (nD) 1.3200 – 1.5300, corresponding to 0-100 % by weight.

