

Optimasi sintesis nitrogliserin sebagai bahan baku peledak dan amunisi

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Abstrak

The need for nitroglycerin in Indonesia, which is around 657,89 tons per year; is obtained. From abroad although it is only a small amount, nitroglycerin is a very strategic material, therefore it is necessary for BPPIT of the department of defense to start thinking for producing it in the country.

Nitroglycerin can be made by nitration of glycerin with a mixture of nitric acid and sulphuric acid and those three materials, are available in Indonesia. It's hoped that nitroglycerin can be produced Indonesia, so that we don't always depend to other countries.

The maximum result of glycerin. Was obtained when glycerin was mixed with a mixture of HNO₃ and H₂SO₄ (4:6). The other factors that determine the end product are temperature in reactor and the flow of glycerin addition. The optimum temperature was 25 - 30 °C and the flow of glycerin addition was 0,45 mL/minute.

The testing result of physical and chemical properties of nitroglycerin such as the nitrogen content, density, refractor index, the drop test, IR absorption, evaporation test, burning test, showed that the nitroglycerin we produced in our laboratory met the requirement as an explosive material.

The conclusion of this research is that the local materials can be used to produce nitroglycerin.

