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TRINITROETHYL ACRYLATE

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1 Claim. (Cl. 260—486)

This invention relates to a new explosive compound, trinitroethyl acrylate.

The new compound of the invention is a liquid at room temperature. It is of particular interest as a polymerizable, high explosive monomer. It has further utility as an intermediate in the preparation of β-trinitroethyl-γ-trinitrobutyrate, a new explosive compound disclosed and claimed in my co-pending application Serial No. 286,601 filed May 7, 1952.

It is an object of the invention to provide a new compound, trinitroethyl acrylate.

The new compound was prepared by reacting acrylyl chloride with trinitroethanol.

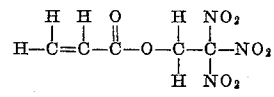
The invention is illustrated by the following example, but is not limited thereto.

Example

1.81 grams of trinitroethanol and a slight excess of acrylyl chloride were heated for 3 hours at 57° C., then

distilled at a low pressure to remove the excess chloride. The crude material, which was probably contaminated with trinitroethanol, had a boiling point range of 70–90° C. at ½ mm. pressure.

The compound has the following formula:

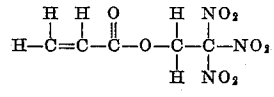


The pure compound has an oxygen balance of —31. It has an impact sensitivity of 45, as determined with the Bureau of Mines impact machine, this figure being the distance in centimeters a 2 kilogram weight was required to fall in order to produce 50% shots.

It is thus seen that there has been provided a new explosive compound having utility as a polymerizable, high explosive monomer and as an intermediate in the preparation of β-trinitroethyl-γ-trinitrobutyrate.

What is claimed is:

Trinitroethyl acrylate having the following structural formula:



No references cited.