5 g of metallic mercury is added to 35 ml of concentrated nitric acid (d=1.42 g/ml) in a 100-ml Erlenmeyer flask, and the mixture is allowed to stand without shaking until the mercury has gone into solution. The acid liquid is then poured into 50 ml of 90% alcohol in a 500-ml beaker in the hood. The temperature of the mixture rises, a vigorous reaction commences, white fumes come off, and crystals of merury(II) fulminate soon begin to precipitate. Red fumes appear and the precipitation of the fulminate becomes more rapid, then white fumes again as the reaction moderates. After about 20 minutes the reaction is over; water is added, and the crystals are washed with water repeatedly by decantation until the washings are no longer acid to litmus. The product consists of grayish-yellow crystals. Mercury(II) fulminate may be obtained white and entirely pure by dissolving in strong ammonia water, filtering, and reprecipitating by the addition of 30% acetic acid. The pure mercury(II) fulminate is filtered off, washed several times with cold water, and stored under water, or, if a very small amount is desired for experimental purposes, it is dried in a desiccator.

Chemistry of Powder and Explosives, by T. L. Davis, 406-407, 1941

Besides Justus von Liebig and Joseph Louis Gay-Lussac many famous chemists were engaged in the chemistry of mercury and silver fulminate: Friedrich Wöhler, Jöns Jakob Berzelius, August Kekule´, Louis-Jacques Thenard, Claude-Louis Berthollet, Pierre Berthelot, Heinrich Wieland, Linus Pauling, Rolf Huisgen. Berthelot reported a very exact analysis of Hg(CNO)2 and studied its explosive properties (Hg(CNO)2 = Hg + 2CO + N2).

Wieland offered after his own important contributions to the chemistry of fulminic acid a widely accepted interpretation for Howard’s formation of mercury fulminate from mercury, nitric acid and ethanol. Mercury fulminate was widely used as primary explosive for nearly a hundred years. In the beginning of the 20th century the annual production of mercury fulminate only in Germany was about 100 000 kg per year. A. Nobel used this energetic compound as a component in his recent developed metal blasting cap detonator to initiate dynamite. The wide application of dynamite was only possible when the use of Hg(CNO)2 as primary explosive guaranteed a safe ignition. For this purpose it is now replaced by lead azide which is more stable on storage.

Hg(CNO)2 was synthesized by dissolving 1 g of mercury in 12 g of nitric acid (ρ = 1.4 g / cm3) and adding 11 g of ethanol to this solution in two portions. It is important to add the first half of ethanol before the red brown gases have disappeared. Caution: Mercury fulminate is sensitive to impact and friction and is easily detonated by sparks and flames. Before use it should be stored under water and with exclusion of light.