Salts of nitronic acids may be prepared by reaction of bases with nitronic acids. However, they are usually most readily prepared from nitroalkanes, employing a suitable solvent. Unlike most nitroalkanes, nitronic acids are soluble in sodium bicarbonate solution.

Many nitronate salts are shock sensitive explosives, and are particularly hazardous when anhydrous. The alkali metal salts are useful for purifying and isolating nitronic acids and nitroalkanesl. Properties of salts of polynitroalkanes have been reviewed. Several metal cations have been employed in the preparation of nitronate salts. The sodium and potassium salts are the most common; these are prepared by treatment of a nitroalkane with aqueous sodium or potassium hydroxide, or the ethanolic metal ethoxides.

R1R2CHNO2 + KOH = R1R2C=NO2-K+ + H2O

The usually colorless mononitronate salts often precipitate from cold solutions and may be isolated by filtration. Alkali metal salts of 1,1-dinitroalkanes are yellow and often less solqble than mononitronates. The potassium salts are less soluble than sodium salts. Several heavy metal salts are known, the most common being silver, mercury, and copper. These insoluble, largely covalent compounds may be prepared from the alkali salts by metathesis.

R1R2C=NO2-Na+ + AgNO3 = R1R2C=NO2Ag + NaNO3

The silver salts are employed for nitronic ester synthesis. The silver salt of nitroform exists in colorless and yellow modifications suggesting the possibility of CAg and OAg forms. Insoluble mercury methanenitronate decomposes to form mercury fulminate.

2 CH2=NO2-Na+ + HgCl2 = (CH2=NO2)2Hg = Hg(ON≡C)2