

Nitro-compounds of the Fatty Series. Nitroethane. By V. MEYER and O. STÜBER (*Deut. Chem. Ges. Ber.*, v, 399—406).

INSTEAD of yielding amine bases with nascent hydrogen, the nitrous ethers split up into alcohol and ammonia. From this it follows that the constitution of ethyl nitrite is expressed by the formula, C_2H_5-O-NO , and not by $C_2H_5.NO_2$, the formula of the real nitro-compound. The authors have already pointed out (*Deut. Chem. Ges. Ber.*, v, 203) that the reaction of silver nitrite with the iodides of the alcohol-radicals supplies us with a method of forming the nitro-compounds of the fatty series.

Ethyl iodide at once acts upon silver nitrite, and the resulting nitroethane can easily be obtained quite pure by distillation and rectification in an oil-bath. Nitroethane is a highly refractive liquid, entirely devoid of colour, and possessing an agreeable and peculiar ethereal odour. It does not mix with water. Its specific gravity is 1·0582, and its boiling point is 111° — 113° (nitrous ether boils at 16°). Its vapour has a density of 36·9 ($H = 1$), the calculated number for $C_2H_5.NO_2$ being 37·5. The vapour is inflammable, and burns with a pale-yellow flame, but does not detonate when heated, even much above the boiling point. The nitro-compound in the amyl series has also been obtained, but not quite pure.

In the preparation of nitroethane some nitrous ether is always formed, and about one-fifth of the ethyl iodide always escapes decomposition, even when it is heated for a long time in a sealed tube with excess of silver nitrite.

Nitroethane is converted into amidoethane (ethylamine) by the action of iron and acetic acid. The reaction requires to be started by the application of heat, but then becomes violent, and if it be desired to obtain the ethylamine pure, the action must be so moderated by immersing the flask in cold water that the liquid never boils. On distilling the product with caustic potash, and receiving the vapours in dilute hydrochloric acid, ethylamine hydrochloride is at once obtained quite pure. This salt can be obtained in this way in prismatic crystals of great beauty, which are very deliquescent.

Nitroethane dissolves in a solution of potash with evolution of heat, and the solution can be boiled without the nitroethane being given off, but it is set free on supersaturating the solution with dilute sulphuric acid. It also dissolves in ammonia-water, but is then gradually decomposed. It appears, therefore, to possess weak acid properties. It does not dissolve in baryta-water. On heating it with sodium, gas is evolved, and a dazzling white powder is obtained; this, when gently

heated, explodes violently, and is, perhaps, analogous to fulminating silver, fulminic acid being nitro-acetonitrile [in this respect it is like the sodium and other metallic salts of trinitrophenol].

Kept for some hours in a sealed tube at 100° , with a concentrated solution of caustic potash, it is decomposed, much ammonia being liberated, and potassium nitrite and an oily body smelling like peppermint being also produced; whether alcohol is produced could not be ascertained, because of this oily body.

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