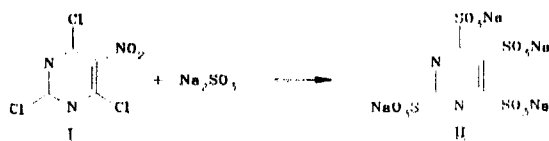


PYRIMIDINETETRASULFONIC ACID

Yu. L. Yagupol'skii, M. T. Kolycheva,
and V. M. Cherkasov

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By reacting 2,4,6-trichloro-5-nitropyrimidine (I) with sodium sulfite, a derivative of pyrimidine was obtained for the first time, in which the sulfo groups are attached to all the carbon atoms of the heterocyclic ring, i.e., a sodium salt of pyrimidinetetrasulfonic acid (II).



A solution of 4.6 mmoles of pyrimidine I in 10 ml of dioxane was added to a solution of 23 mmoles of freshly prepared Na_2SO_3 in 12 ml of water, and the mixture was stirred for 8 h. The precipitate was filtered, and reprecipitated from water by alcohol. The yield of sodium salt of tetrasulfopyrimidine II was 16%. Found: C 8.7; H 0.9; N 5.5; Na 17.7%. $\text{C}_4\text{N}_2\text{Na}_4\text{O}_{12}\text{S}_4 \cdot 2.5\text{H}_2\text{O}$. Calculated: C 9.0; H 0.9; N 5.3; Na 17.3%

We could not increase the yield of salt II, since increase in the temperature or the reaction time leads to precipitation of a mixture of products of hydrolysis of the sulfo groups. After separation of compound II, a similar mixture precipitated from the mother liquor on standing.

Sodium salt II is a white crystalline substance, which does not melt on heating to 300°C and is unstable in aqueous solutions. When AgNO_3 is added, the exchange reaction proceeds slowly, and a silver salt of pyrimidinetetrasulfonic acid is formed in an overall yield of not more than 19%.

In the IR spectra of the sodium and silver salts of the sulfopyrimidine, very intense vibrational bands appear at 1250 ($\nu_{\text{as}} \text{SO}_2$) and 1065 ($\nu_{\text{as}} \text{SO}_2$) cm^{-1} . Several other weak bands are also observed at 1645 , 1515 , 1465 cm^{-1} that probably belong to stretching vibrations of the pyrimidine ring.

Institute of Organic Chemistry, Academy of Sciences of the Ukrainian SSR, Kiev. Translated from *Khimiya Geterotsiklicheskikh Soedinenii*, No. 5, pp. 710-711, May, 1986. Original article submitted September 23, 1985.