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# THE PROOF OF FORMATION S-SODIUM SALT OF 6-METHYL-2-THIOURACIL

*Keywords: 6-methyl-2-thiouracil, infrared and proton magnetic resonance spectroscopy*

*The formation of S-sodium salt of 6-methyl-2-thiouracil was proof by the methods of infrared and proton magnetic resonance spectroscopy.*

*Ключевые слова: 6-метил-2-тиоурацил, инфракрасная и протонная магнитно-резонансная спектроскопии.*

*Формирование S-натриевой соли 6-метил-2-тиоурацила доказывалось с помощью методов инфракрасной и протонной магнитно-резонансной спектроскопий*

## Aims and backgrounds

The synthesis of S -monoderivatives of 6-methyl-2-thiouracil by the reaction of the nucleophilic substitution in halogenated hydrocarbons proceeds through the phase of the formation of the sodium salt of S-6-methyl-2-thiouracil. It was interesting to prove the formation of the sodium salt [1-8].

## Methodology

The molecule of 6-methyl-2-thiouracil exists in two tautomeric forms: oxo-thio and hydroxo- mercapto. The keto form of 2-thiouracils is the most stable.

For the dissolving of 6-methyl-2-thiouracil it is necessary to convert it from the oxo-thione form into the oxo-mercapto form. We used the equimolar relations of 6-methyl-2-thiouracil and sodium hydroxide. Where in the tautomeric transformations occurred with the participation of the sulfur atom of thiouracil only.

## Resultats of the investigation

Under the action of an aqueous solution of sodium hydroxide on 6-methyl-2-thiouracil (fig.1) the formation of the water-soluble S- sodium salt takes place.

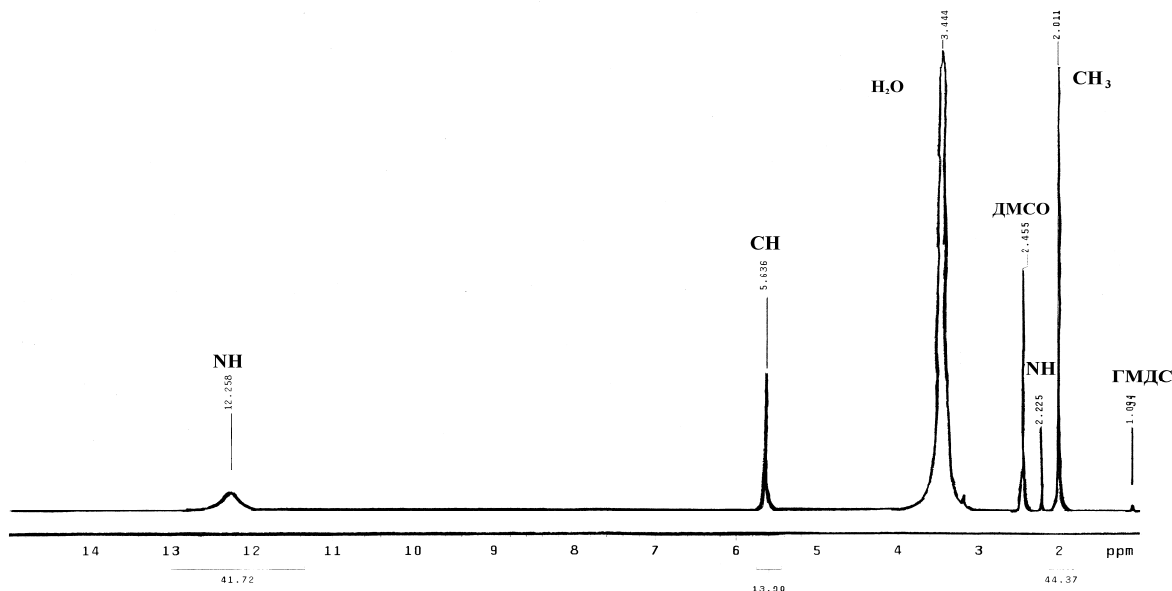


Fig. 1 - PMR-range of 6-methyl-2-thiouracil

The structure and composition of the S-sodium salt of 2-thiol-6-methylpyrimidin-4 (3H)-on was proved by the IR, PMR-spectroscopy (fig.2-3) and by the facts of the elementary nitrogen analysis.

There is no signal in the PMR spectrum of the salt in the 2.3 m.d. which is characterized for the NH-group, located in the position of the 1 heterocycle of 6-methyl-2-thiouracil.

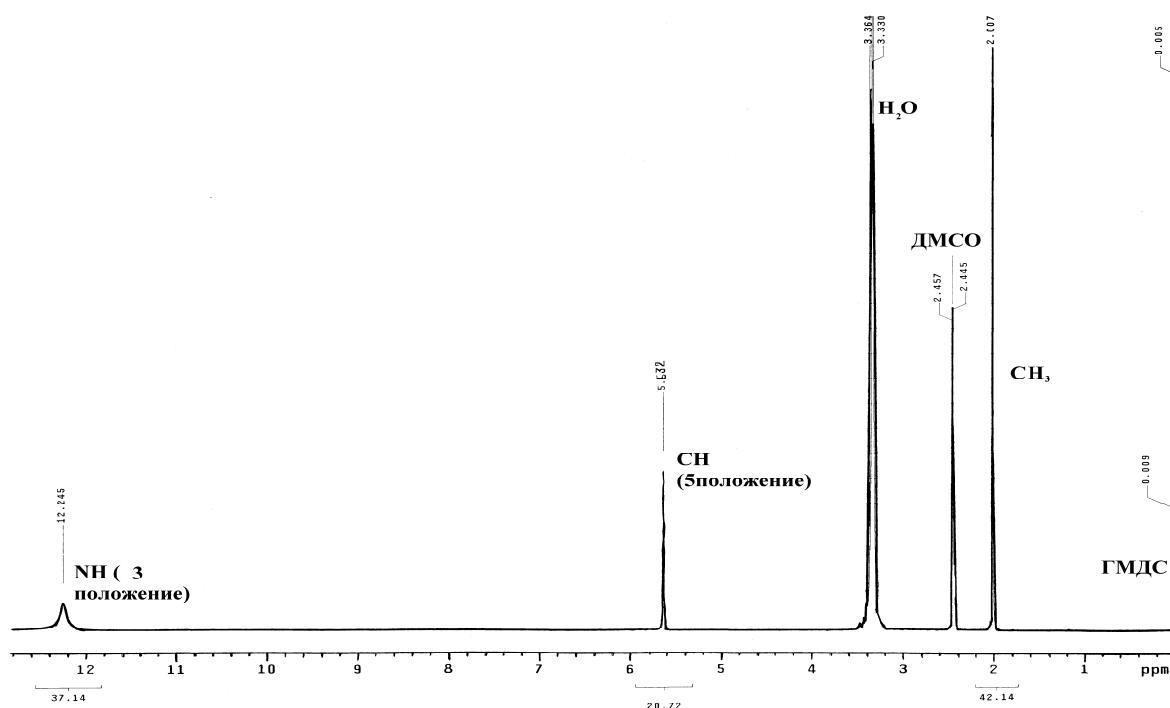


Fig. 2 - PMR-range of S-sodium salt of 2-thiol-6-methylpyrimidin-4 (3H)-on

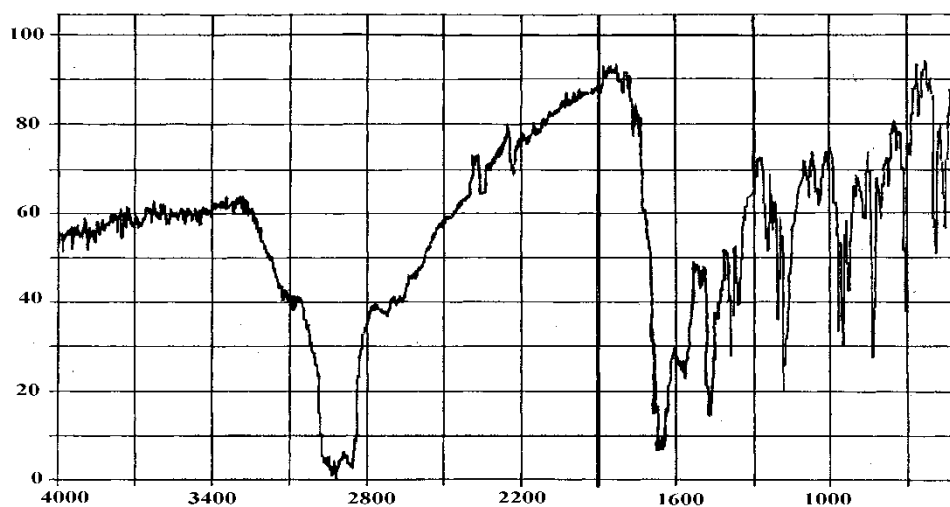


Fig. 3 - IR-range of S-sodium salt of 2-thiol-6-methylpyrimidin-4 (3H)-on

### Conclusion

Thus, during the reaction of 6-methyl-2-thiouracil with the equimolar amount of sodium hydroxide the S-sodium salt is formed. Further the thioanion is generated in the aquatic-dioxane medium [9-12]. The resulting anion reacts with an equimolar amount of the halogeno by the mechanism of the nucleophilic substitution with the formation of S-monoderivatives of 6-methyl-2-thiouracil only.

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