LETTERS TO THE EDITOR

ORGANOLITHIUM COMPOUNDS OF PYROMUCIC ACID AND OF FURFURAL ACETALS

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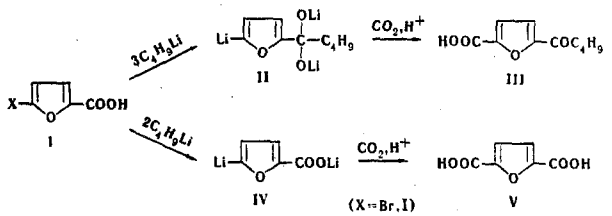
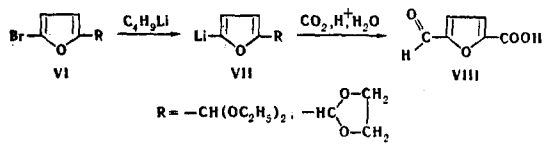
With a view to preparing organolithium derivatives of furan containing reactive groups, a study has been made of the reaction of 5-halogeno-2-furancarboxylic acids (I) and 5-bromofurfural acetals with butyllithium. In ether at 20°–25° C, the former were found to give organolithium compound II.



Reaction of I with butyllithium at −78° C for 30–40 min gave a lithium salt of 5-lithium-2-furancarboxylic acid.

An acetal of 5-bromofurfural reacts more smoothly with butyllithium than does a 5-halogeno-2-furancarboxylic acid.



Unlike the 4, 5-dibromofurfural diethylacetal [1], VI rapidly exchanges bromine for lithium at room temperature.

To prove the structure of II, IV, and VII, they were converted to the corresponding carboxylic acids III, V, and VIII. II had mp 162°–163° C (ex water). The analytical data corresponded to $C_{10}H_{12}O_4$. The IR spectrum of the Na salt of II showed a carbonyl group (1670 cm^{-1}) and an ionized carboxyl group (1597 and 1401 cm^{-1}), mp V (318°–320°C) and VIII (200°–201° C) corresponded to the literature data [2].

REFERENCES

1. L. D. Tarasova and Ya. L. Gol'dfarb, Izv. AN SSSR, ser. khim., 11, 2013, 1965.

2. Dictionary of Organic Compounds [Russian Translation], Moscow, IL, 2, 92, 93, 1949.

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