

FORMATION OF AMINO ACIDS IN THE SHOCK-WAVE COMPRESSION OF THE AMMONIUM  
SALTS OF UNSATURATED ACIDS

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Under the action of shock waves (SW) the crystalline ammonium salts of unsaturated monobasic and dibasic carboxylic acids may be converted into amino acids (Table 1). The SW compression of samples of the salts was achieved by a cylindrical arrangement [1], the use of which causes the compression of the specimen by a cone-shaped covering SW. The experiments were conducted in storage ampuls which prevented the escape of the substance after the action of the SW. The amino acids formed were analyzed in the form of their N-formyl-butoxy derivatives [2] by GLC on a 50-m capillary column containing a KhE-60 phase. The amino acids synthesized were identified against known samples.

TABLE 1

Acid (ammonium salt)	SW amplitude, GPa	Initial temperature of sample, °K	Amino acid	Yield, %
Acrylic	10	100	$\beta$ -Alanine	3,5
Crotonic	10	100	$\beta$ -Aminobutyric	10,0
Cinnamic	10	100	$\beta$ -Phenylalanine	0,5
Fumaric	10	100	Asparaginic	10,0

LITERATURE CITED

1. G. A. Adadurov and V. I. Gol'danskii, Usp. Khim., 50, 1810 (1981).
2. M. Makita, S. Yamamoto, and Tsudaka Yukiko, Clin. Chim. Acta, 88, 305 (1978).

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