SYNTHESIS AND CLASSIFICATION of 2,7-DIMETHYL-2,7-DICIANIDE-3,6-DIAZAOKTANE AND ITS DERIVATIVES

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Annotation: The article presents scientific views on the classification of goods, especially chemical compounds, on the nomenclature of goods for foreign economic activity, as well as on the classification of new synthesized derivatives of α-aminonitriles.

Keywords: α-aminoniriles, acetic acid anhydride, acylation reactions, yield of reaction products, commodity, classification, commodity nomenclature, commodity code, commodity chemistry.

СИНТЕЗ И КЛАССИФИКАЦИЯ 2,7-ДИМЕТИЛ-2,7-ДИЦИАНИД-3,6-ДИАЗАОКТАНА И ЕГО ПРОИЗВОДНЫХ

Аннотация: В данной работе были изучены реакции ацилирования α-аминонитрилов и факторы, влияющие на протекание реакции. Реакции ацилирования проводили в нескольких растворителях (гексане, тетрагидрофуране и диоксане). В работе также представлены научные взгляды на классификацию товаров, особенно химических соединений, по номенклатуре товаров внешнеэкономической деятельности, а также на классификацию вновь синтезированных α-аминонитрилов и их производных.

Ключевые слова: α-аминонитрилы, ангидрид уксусной кислоты, реакции ацилирования, выход продуктов реакции, товар, классификация, товарная номенклатура, товарный код, товарная химия.

2,7-ДИМЕТИЛ-2,7-ДИЦИАНИД-3,6-ДИАЗАОКТАН ВА УНИНГ ҲОСИЛАЛАРИ СИНТЕЗИ ҲАМДА ТАСНИФЛАНИШИ

Аннотация: Ушбу мақолада α-аминонитрилларни ациллаш реакциялари ва реакциянинг боришига таъсир этувчи омиллар ўрганилди. Ациллаш реакциялари бир қанча эритувчиларда олиб борилди (гексан, тетрагидрофуран ва диоксан). Шунингдек ушбу мақолада товарларни, айниқса кимёвий бирикмаларни ташқи иқтисодий фаолият товарлар номенклатураси бўйича таснифлаш, ҳамда янги

синтез қилинган α-аминонитриллар ва уларнинг ҳосилаларини таснифлаш тўғрисида илмий фикрлар билдирилади.

Калит сўзлар: α-аминонитриллар, сирка кислота ангидриди, ациллаш реакциялари, реакция маҳсулоти унуми, товар, таснифлаш, товарлар номенклатураси, товар коди, товарлар кимёси фани.

We all know that the widespread use of chemical preservatives in agriculture is one of the main ways to obtain high yields of agricultural crops, especially industrial crops. The use of plant protection chemicals and chemical compounds that grow plants increases the resistance of plants to various diseases, ensures early ripening of the crop, as well as increases yields and ensures a high quality product.

The α-amino acid derivatives have been found to exhibit a variety of biological activities [1-3].

In addition, the presence of many reaction centers in their molecules (nitrile group, amino and activated methylene group and b-carbon atoms), as well as their various chemical changes, make these substances interesting from the point of view of organic synthesis. They are well biologically active, since they have hydrophilic (NH, CN, CH_3) and hydrophobic (CH_3) functional groups in the molecule [4-6].

Methods of research of commodity chemistry protect the interests of the consumer and the manufacturer by assigning correct and accurate commodity codes to the commodity nomenclature of goods of domestic economic activity (in the following lines of CN DEA). In particular, during the customs inspection of goods imported into the country, the corresponding customs duties are levied on them by re-checking and identifying the proposed international commodity codes in accordance with CN DEA.

One of the main tasks assigned to the customs authorities of the Republic of Uzbekistan is the maintenance of the nomenclature of goods in foreign economic activity for the classification and coding of goods in foreign economic activity, which is an integral part of the customs business. The correct calculation and collection of customs duties on goods depends on the correct classification of goods in accordance with NT VED. Therefore, when organizing the work of customs at the level of demand, customs officers need a thorough knowledge of the theoretical rules for the classification of goods and the correct application of these rules in practice.

It has been found that the acylation reactions of the a-aminonitrile reaction product are carried out in the presence of tertiary ethylamine and at room temperature to form the reaction product in high yields.

When the reagents α-aminonitriles and acid anhydrides were used in a 1: 1 molar ratio of acid chlorides, a monoacyl product was formed and the reaction proceeded mainly with the formation of a free amino group.

When we took the reagents in a ratio of 1: 2 mol, it was found that bis-acyl products were formed as a reaction product.

Table 1.

Results of the reactions of acylation of N, N'-bis- (a-cyanisopropyl) ethylenediamine with acetic anhydride (molar ratio 1: 1)

№	Reactive aminonitrile (3 g (0.02 mol))	The amount of acetic anhydride	Tertiary ethylamine (mcg)	Reaction product productivity (%)
In hexane solvent				
1	N, N'-bis- (a-cyano-isopropyl) ethylenediamine	1.0 g (0.9 ml)	-	64
2	N, N'-bis- (a-cyano-isopropyl) ethylenediamine	1.0 g (0.9 ml)	1000	76
3	N, N'-bis- (a-cyano-isopropyl) ethylenediamine	1.0 g (0.9 ml)	10 000	84
4	N, N'-bis- (a-cyano-isopropyl) ethylenediamine	1.0 g (0.9 ml)	100 000	90
In tetrahydrofuran solvent				
1	N, N'-bis- (a-cyano-isopropyl) ethylenediamine	1.0 g (0.9 ml)	-	66
2	N, N'-bis- (a-cyano-isopropyl) ethylenediamine	1.0 g (0.9 ml)	1000	78
3	N, N'-bis- (a-cyano-isopropyl) ethylenediamine	1.0 g (0.9 ml)	10 000	86
4	N, N'-bis- (a-cyano-isopropyl) ethylenediamine	1.0 g (0.9 ml)	100 000	89
In dioxane solvent				
1	N, N'-bis- (a-cyano-isopropyl) ethylenediamine	1.0 g (0.9 ml)	-	68
2	N, N'-bis- (a-cyano-isopropyl) ethylenediamine	1.0 g (0.9 ml)	1000	74
3	N, N'-bis- (a-cyano-isopropyl) ethylenediamine	1.0 g (0.9 ml)	10 000	82
4	N, N'-bis- (a-cyano-isopropyl) ethylenediamine	1.0 g (0.9 ml)	100 000	88

From the results obtained, it can be concluded that the structure of the compound formed as a result of the reactions of N, N'-bis- (a-cyanisopropyl) ethylenediamine with acid anhydrides depends on the molar ratio of the reacting compounds. It has been observed that the N-monoacyl product is formed as a reaction product when the reactive reagents are used in a 1: 1 molar ratio and a bis-acyl product is formed when the reaction is carried out in a 2: 1 molar ratio. When studying the reactions of N, N'-bis- (a-cyanisopropyl) ethylenediamine with acid anhydrides, we used acetic anhydride as the anhydride.

Based on the results obtained and the studies carried out, it can be concluded that research on the synthesis of α-aminonitriles and their derivatives and their scientific classification on NT VED and research on their basis can be formed as one of the most appropriate. effective directions.

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