UDC 66,667/543.57

FEATURES OF IDENTIFICATION OF PAINT MATERIALS BY THERMAL ANALYSIS

Islamova Saida Turgunovna
doctor of philosophy (PhD) technical sciences
assistant of the deportment of medical chemistry
Andijan state medical institute

Annotation: *This article reveals the feature of identification of paints materials by thermal analysis. The thermal behavior of samples depends on the chemical composition and the amount of added components. Methods of thermo gravimetric analysis were developed in the control mode of metrological characteristics using standard samples of paint materials. Offered for implementation developed methods for the identification and quantification of paint materials by thermal analysis methods provide for the establishment of an optimal solvent system for differential thermal derivatographic control.*

Keywords: *paints materials, identification, thermal analysis, differential-thermal derivatographic control*

Thermal analysis methods - methods for studying physicochemical and chemical processes based on the registration of thermal effects, accompanied by temperature programming. Installation for thermal analysis methods usually includes a furnace, sample holders, thermocouples measuring the temperature in the furnace and samples [1].

When heating or cooling the sample, changes in the temperature of the object with time are recorded. In cases of phase transformations, a platform or kink appears on the heating (cooling) curve. Samples were preliminarily crushed in an agate mortar to a powder state in order to uniformly fill the crucible of the derivatograph

and uniform temperature gradient during heating of the sample in the derivatograph. Then the sample was dried in an oven to remove residual moisture and solvent [2].

Thermal analysis was performed on a Paulik-Paulik-Erdey system derivatograph with a heating rate of 100 ° C / min and 0.1 g sample at a sensitivity of the T-900, TG-200, DTA-1/10, DTG-1/10 galvanometer in an air atmosphere. Weighed samples were in the range of 10-40 mg. The sample was heated in an atmosphere of air in ceramic crucibles in the temperature range from 250C to 7000C. Recording was carried out under atmospheric conditions with a constant removal of the gaseous medium using a water-jet pump.

The holder was a platinum crucible with a diameter of 7 mm without a lid. Alumina was used as an inert carrier. The analysis was carried out according to the DTG, DTA and TG curves, which were obtained by registration on a personal computer having an analog-to-digital converter. From the obtained thermograms, the thermo-oxidative stability and kinetic characteristics of the thermo-oxidative destruction of the samples were determined: the destruction rate, the destruction rate constant, and the activation energy. The results of thermogravimetric analysis of paints are shown in the figures. On the heating curve of the Royal mel sample (Fig. 1.), two endothermic effects were detected, at 120, 185 ° C, which corresponds to aldehydes and alcohols. The exothermic effects at 240, 303, 430,450, 485, 518, 570 and 705 ° C correspond to the thermal effects of polyacrylamide, o-xylene, cyclopentane, octane, undecane, cyclohexane, cyclodecane, pentadecane.

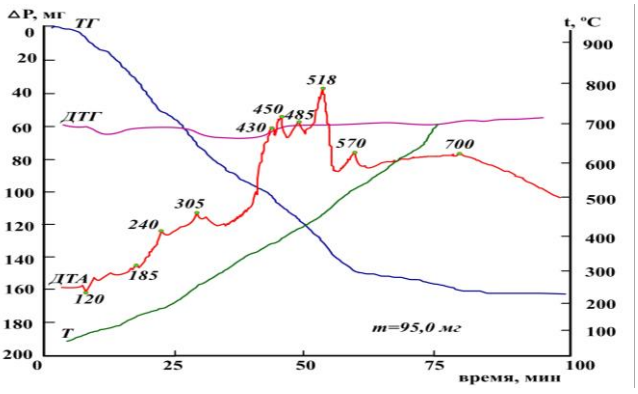

Figure 1. The result of differential thermal analysis of Royal mel.

Conclusions: The thermal behavior of the samples depends on the chemical

composition and the amount of added components. Classification and coding of goods are important components of customs. The correct determination of the code of goods according to the HS is one of the urgent tasks.

References

1. Islamova ST, Khamrakulov G., Bakhtiyorova L., Khamrakulov M. Identification and classification of goods 32 groups of the commodity nomenclature of foreign economic activity of the Republic of Uzbekistan // «Austrian Journal of Technical and Natural Sciences». -№7-8. –Vienna. -2015. - P. 46-52.

2. Islomova S.T., G. Xamrakulov, U. Kodirov. Increasing the effectiveness of customs control on the basis of improving mechanizm klassifikation paint materials. // Problems and prospects of classification and certification of goods on the basis of chemical composition Proceedings of the VI International Scientific-Practical Conference. - Andijan. - 2015. - p. 61-64.