Research Report № 138-b of the "17" in December 2014

Determination of volatile organic compounds (VOCs) content.

Customer: SMT-Product

The object of study: polymer composition "Rizopoks-4101" (TU 2257-012-43548961-2003)

Objective: Determination of the mass fraction of volatile organic compounds (VOCs) in the samples "Rizopoks-4101" by the method of ASTM D2369.

Equipment: Balance analytical LP-210A, test certificate number 062897 from 16.12.2013, electric SNOL 30/1100, of "Umega", Lithuania, certificate №170 from 03.10.2013, in accordance with GOST 25336-82 desiccator with a desiccant (calcium chloride technical calcined according to GOST 450-77).

Research methods: ASTM D2369 (GOST 17537-72)

Test procedure:

1. Preparation of samples

Sample "Rizopoks-4101" was prepared by mixing the components A and B in a glass flask with a ground cover. The components are mixed by weight in the proportion of A: B = 5.7: 1. Were prepared two portions of each sample named "Rizopoks 4101-01" and "Rizopoks 4101-02."

Aluminum foil dishes were prepared, three for each of the samples. Aluminum foil dishes predried to constant weight. Then weighed and the tare weight recorded.

3 ml of solvent was added to each container, weighed and recorded values. 1 ml of sample was added in each container. The sample was added drop wise, after shaking the container to disperse the sample in a solvent.

2. Determination of the mass fraction of volatile organic compounds (VOCs).

Determination of the mass fraction of VOC performed immediately after mixing the components.

The sample was left in air for 1.5 hours.

The aluminum foil dishes contained the dispersed specimens were placed in an oven with exhaust system. Oven temperature of 110 ± 5 ° C, the heating time is 60 minutes. Then the container from the oven was placed in a desiccator, cooled to ambient temperature and weighed to within 1 mg.

The values of the mass fraction of VOCs determined by the formula: $W_m = (W_1 - W_2) / W_3$, where:

W_1 - tare and sample before heating, g;

W2 - tare and sample after heating, g;

W3 - sample weight before heating.

Table 1. Results of measurement after heating.

Samples name	Mass fraction of VOC in the container №1	Mass fraction of VOC in the container №2	Mass fraction of VOC in the container №3	The average value of the mass fraction of VOC in the sample
Rizopoks 4101-01	0.046	0.043	0.049	0.046
Rizopoks 4101-02	0.045	0.049	0.050	0.048

VOC per unit volume of material is determined by the formula: $W_v = m \cdot W_m / V$, where:

W_m - mass fraction of VOC in the material;
m - mass of sample, g;
V - volume of sample, n.

Results of analysis:

Sample	The content of VOC in the sample, g / l
«Rizopoks 4101»	68