PRZEDSIĘBIORSTWO TECHNICZNO - HANDLOWE

Dr inż. Józef SOŁTYS

44-100 Gliwice, ul. Św. Marka 9/7; POLAND

tel: (+48 32) 757 09 67; • Tel. kom.: +48 606906231

e-mail: biuro@intermark.pl • www.intermark.pl

PROMOTOR EKOLOGII

PRODUCT SPECIFICATION

Product name: Halloysite Dunino F – component of fertilizers and plant protection products

CAS Number: 1332-58-7
Chemical formula: $Al_2Si_2O_5(OH)_4 \cdot 2H_2O$
Formula weight: 294,19 g/mol
Appearance (Color): beige
Appearance (Form) : powder
BHT Surface Area : 65 m^2/g
Bulk density : 650-750 kg/m^3
pH : 6,5-7,5
Composition: mixture of nanotubes and nanoplatelets (s. Fig. 1)

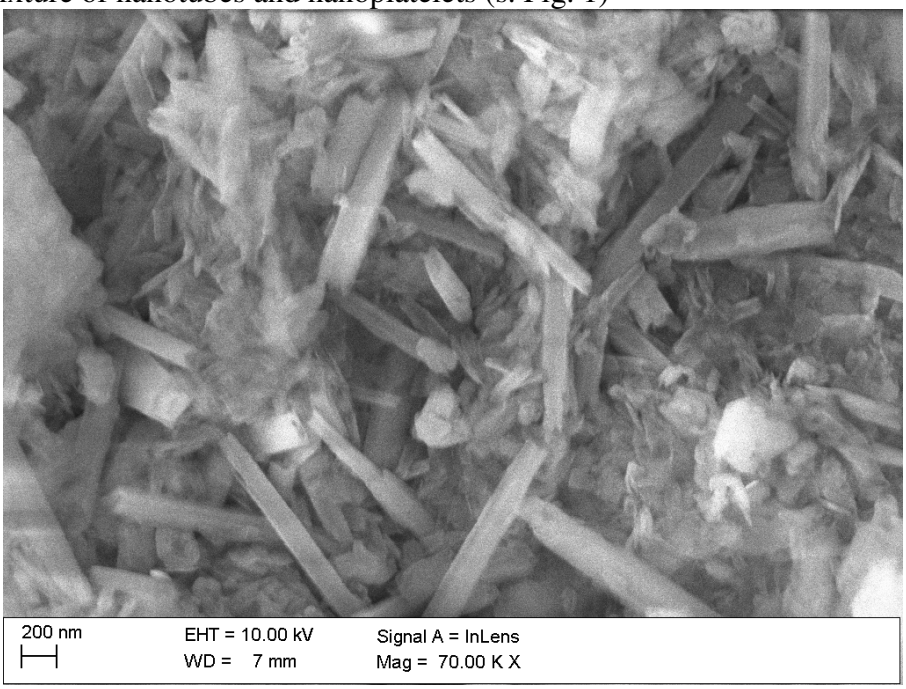

Fig.1 Microscopic SEM view of Halloysite Dunino F

Dimensions of nanoparticles:

nanotubes:

diameter: 30-100 nanometers ; length : 0,5 -2 mikrometers

nanoplatelets:

lenght/ width : 100-300 nanometers; thickness : 1-5 nanometers

Supplier : PTH Intermark , Poland

Chemical composition:

Al_2O_3- 34 +/- 1%;
SiO_2- 37 +/- 1%,
Fe_2O_3- 21 +/- 1%,
TiO_2- 2,5 +/- 1%,
CaO- 0,5% +/-0,1%
K_2O – 0,07+/- 0,01%
Na_2O -0,02%+/- 0,01%
SO_3 – 0,05+/-0,02%
Cl <0,01%
LOI – 14,2%

PTH Intermark warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. For further inquiries, please contact PTH Intermark. Purchaser must determine the suitability of the product for its particular use.

Application:

The product can be used as a component and carrier of active substances of mineral fertilizers and plant protection products.

The innovative, hybrid fertilizer–halloysite-modified artificial fertilizers and plant protection products have following advantages :

- slow release of active substances;
- reducing of the leaching of active substances to groundwater (usually 70-80% of them is lost and pollutes the aquatic ecosystem);
- enhancing of the absorption of fertilizers and plant protection substances by plants,
- conditioning the soil,
- improving of the soil's structure and fertility,
- improving of water retention by the soil,
- boosting of microbial activity,
- reduction of the absorption of heavy metals by plants (eg.cadmium, mercury, lead, nickel) in polluted areas.

Fertilizers and plant protection products can be applied in the form of water suspension or granulated. Suspension density depends on the type of active substance and the spraying device. The granules may contain up to 50% of active substance. The granulation process is similar to the production of granular fertilizers. The application of halloysite as a carrier allows to reduce the dosis of active substances by 30 to 50%. In horticulture, use of the product with halloysite also reduces the frequency of spraying.