

# PLANT LLC

TIN 5036065917, IEC 503601001, PSRN 1055014723510, ARCEO 75292641

S/a 40702810700012904109 in Promsberbank CJSC, Podolsk.

C/a No. 3010181070000000151, RCBIC 044695151

Legal and mail address: 59 Fevral'skaya Ulitsa, Podolsk, Moscow Region, 142100 RF.

Mail address: P.O. 5, Znamya Oktyabrya PA, Podolsk District, Moscow Region, 142134 RF

Tel.: +7(495) 5056867 (secretary); +7(495) 9200516. E-mail: [Plant-Flora@mail.ru](mailto:Plant-Flora@mail.ru)

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Our ref. No. \_\_\_\_\_ dated \_\_\_\_\_ 2008.

## MAIN PHYSICAL & TECHNICAL SPECIFICATIONS OF THE PREPARATION

1. Name of the agricultural chemical – Bioplant Flora humic acid based fertilizer with microelements (hereinafter – Bioplant Flora, BF)

2. Manufacturer: PLANT LLC, 59 Fevral'skaya Ulitsa, Podolsk, Moscow Region 142100, tel./fax: (495) 505-68-67, 920-05-16.

3. BF chemical group, area of application and designation:

Fertilizer consisting of humic acids and microelements.

Area of application – preplant treatment of plants, autumn treatment of soil, spring spraying, root fertilization, application in drip irrigation systems. Applicable in agricultural manufacture, gardens and farms, decorative gardening and urban greening.

Designation of the agricultural chemical – plant nutrition with humates and microelements associated with microhumates.

4. Recommended procedure of use:

- intended agricultural crops: cereals, grain legumes, tilled crops, root crops, vegetable crops, fruits and berries, fruit trees and bushes, stone fruits, decorative plants, flowers and lawn grasses.

- terms of application: whole period of vegetation.

- rates (dosage) and frequency of application: depending on crops – from one to three litres per hectare, one-three times; for seed treatment – from 0.1 l/ton to 1 l/ton of seed material.

- application technology and safety precautions: spraying with aqueous solution from 1:100 to 1:500, seed treatment by soaking and irrigation with aqueous solution from 1:50 to 1:100, preplant seed treatment by dressing with aqueous solution from 1:20 to 1:50. No special safety precautions are required, Bioplant Flora is classified as a marginally hazardous substance (class of hazard IV). In case of eye or skin contact – rinse with water.

5. Quality and safety certificates: safety data sheet, test certificates.

Agricultural chemical safety data sheet.

Test certificate No. 35y dated October 09, 2008 (Independent Expertise and Certification Institute. Test laboratory centre).

Test certificate No. 56 dated October 01, 2007 (Independent Expertise and Certification Institute. Test laboratory centre).

Test certificate No. 17 dated April 10, 2001 (Foodstuffs, Alimentary Raw Materials, Feeds, Soils, Grounds, Agricultural Chemicals and Water Test Centre of Moskovskiy State Agrochemical Service Center).

Expert report No. 15506 dated 03.06.2005 (Federal State Healthcare Institution – Moscow Centre of Hygiene and Epidemiology).

Sanitary-epidemiological conclusion No. 77.01.03.989.T.16799.06.5 dated 14.06.2005 (Federal Service for Supervision over Consumer Rights Protection and Human Welfare, Moscow Agency)

6. Registration abroad – absent.

7. Technical documentation TY 9899-007-75292641-2005.

Notice No. 1 of amendment of TY 9899-009-75292641-2008.

Regulations for manufacturing processes

### General information

1. Qualitative and quantitative composition of the agricultural chemical (basic and auxiliary constituents):

Basic constituent – humic acids,

Content of basic constituents in raw feedstock (organic substrate).

Name of parameter	Units of measurement	Regulations applicable to test procedures	Test results
Organic substance	mg/l	ГОСТ 27980-88*	2520.0
Humic acids	mg/l	ГОСТ 26213-91	2100.0
Fulvic acids	mg/l	ГОСТ 26213-91	280.0
Carbohydrate of humic acids	мг/л	ГОСТ 26213-91, extraction of humic acids by M.M. Kononova and N. P. Belchikova	1180,0
Carbohydrate of fulvic acids	mg/l		120.0
Total of humic and fulvic acids	mg/l		2380.0

Auxiliary constituents – microelements Fe, Zn, Mg, Mn, Mo, Co, B and spores of beneficent soil microflora contained in biohumus.

2. Content of toxic and hazardous substances:

- heavy metals and arsenic (mg/l): lead – 0.01 (MPC 32.0); mercury – 0.003 (MPC 2.1); cadmium – 0.0021 (MPC 3.0), arsenic – less than 0.0023 (MPC 3.0).

- organic compounds (mg/kg) – not found

- natural and technogenic radionuclides:

Radium-226 < 10 Bq/l; Thorium-232  $11 \pm 5$  Bq/l; Potassium-40  $220 \pm 50$  Bq/l; Cesium-137 < 3 Bq/l; Strontium-90 < 5 Bq/l; Aeff. 52 Bq/kg (MPC 370 Bq/kg)

3. Pathogenic flora, including Salmonella (index) – not found

4. Viable helminth larvae and eggs (U/kg) – not found

5. Cysts of pathogenic intestinal protozoans (U/100 g) – not found

6. Larvae and cystalids of synanthropic flies (U/kg) – not found

7. Methods of steilization (for dung, droppings, sewage sludge, etc.) – fermentation at not less than 70 °C within at least three hours.

8. N:P:K percentage ratio (0.0189-0.0031-0.031) (by weight).

### Toxicological characteristics of the agricultural chemical

1. Grade of hazard - IV (marginally hazardous substances)

2. Type of negative impact on human health – not revealed.

3. MPC in working zone area – not ranged.

### Hygienic characteristics of the agricultural chemical

1. Information about chemical behaviour in environmental objects (soil, air, water), including ability to form hazardous derivatives – not found.

\* All-Russian State Standard.

When applied to the soil, Bioplant Flora due to beneficent soil microflora activates natural microbiological processes in application area. Nitrogen-fixing microflora transforms nitrogen compounds into an available form. Phosphor- and calcium-initiating bacteria also transform phosphor and calcium compounds into available forms. Propagating symbiotic microflora contained in biohumus forces out from its habitat phytopathogenic fungi and bacteria. No formation of hazardous derivatives in soil was observed.

2. Impact on quality and nutritive value of foodstuffs, including content of basic nutritive elements of agricultural chemicals and their admixtures (heavy metals, radionuclides, etc.).

According to Central Research Institute of Agriculture Agrochemical Service (CINAO), application of humates and beneficent soil microflora results increase content of vitamins and biologically active substances. Content of heavy metals, radionuclides and pesticides is lower than approved MPC for agricultural soils. Bioplant Flora is environmentally safe (grade of hazard IV – marginally hazardous substances).

3. Information about content of nitrates in agricultural products upon application of nitrogen-containing mineral fertilizers.

Bioplant Flora is not a nitrogen-containing fertilizer. It provides plants with complex balanced nutrition, while decrease of nitrates level is confirmed by improved storability.

4. Reconemtatons on safe storage, transportation and use.

Bioplant Flora is packed in lidded tubes, bottles or canisters made of polymer material as per ГОСТ P 50962-96 of 1.5 ml, 0.25, 0.5, 1, 3, 5, 10 and 20 l. PE canisters, PE buckets, bags, cardboard boxes or shrinkable film are applicable for package. Besides, it is allowed to deliver the preparation in metal or plastic drums or customer's own containers.

BF is shippable by any mean of transport, provided that applicable regulations of transportation are observed.

Packed BF is stored indoors, at 0-35 °C. Non-packed Bioplant Flora is stored in processing tanks of up to 25 m<sup>3</sup>.

BF is compatible with pesticides and other plant protectors. Keep out of reach of children, separately from foodstuffs and drugs. It is recommended to use gloves; in case of eye contact rinse with water. Containers and residuals of BF are disposable as household waste.

5. Fisrt aid on poisoning.

In case of eye or skin contact – rinse eyes or skin with plenty of running water.

In case of inhalation – tough, wash throat and nose with water, administer expectorants and leave outdoors.

In case of swallowing – wash stomach with plenty of water (probably, provoking vomiting), administer several tablets of activated coal and drink milk.

In case of serious exposure – consult corresponding medical specialist: dermatologist, oculist, pulmonologist or toxicologist having about Recommendations on transportation, storage and use of Bioplant Flora organic fertilizer. In such cases, medical assistance shall be provided immediately.

6. Methods of determination of toxic admixtures in agricultural chemical and ermvironmental objects.

Mass concentration of heavy metals (lead, mercury, cadmium, nickel, chrome and arsenic \* - Methodological Instructions on Determination of Heavy Metals in agricultural soils and crop production. Moscow, CINAO, 1992.

Specific activity of natural and technogenic radionuclides (Cs<sub>137</sub> and Sr<sub>90</sub>) \* - Method of determination of gamma-emitting radionuclides using scintillation and solid-state gamma-ray spectrometers by All-Russian Research Institute of

Physicotechnical and Radiotechnical Metrology SP 14.12.1994. Methodological Instructions "Radiochemical determination of Strontium-90 in soils and plants"

Content of pathogenic microflora, viable helminth larvae and eggs\* -

Methodological instructions on helminthological examination. Moscow, Minzdrav, 1976. Methodological instructions on sanitary & microbiological examination of soils. Moscow, 1977.

\*to be determined in raw feedstock by content of specified elements in biohumus TY 9899-007-75292641-2005.

### **Ecotoxicological characteristics of the agricultural chemical**

Bioplant Flora humic acid and microelements based fertilizer is environmentally safe. It is manufactured as per TY 9899-009-75292641-2008.

Weight ratio of nutritive substances at bottom line amounts up to 89%.

Composition: contains microhumates, physiologically active salts of humic and other natural organic acids, microelements Mg, Mn, Mo, Fe, Co, Zn, S, natural biologically active substances and water.

The basic component used for production of BF fertilizer is an organic substrate obtained by bacterial treatment of organic raw materials.

Mineralization of carbon and transformation of nitrogen are running in their natural way.

Bioplant Flora fertilizer is developed and manufactured by PLANT LLC.

B. V. KOBAHIA  
PLANT LLC,  
Director

Responsible person:

Konstantin Petrovich MAYOROV,

PLANT LLC,

1<sup>st</sup> Deputy Director

Tel.: 8-9262465032, 8-9161472421, e-mail: mkp8@ya.ru