

MANUAL

№ /2021
on the use of
Coagulants Biomicrogel® BMG-P2
Brands BMG-P2-01, BMG-P2-03



Yekaterinburg, 2021

The manual was developed in "SPC BioMicroGel", LLC on the basis of TU 2020.59.59-008-20629059-2018 "Coagulant Biomicrogel®. Technical specifications".

1. General information

1.1 Coagulant Biomicrogel® BMG-P2 (hereinafter – the coagulant) is produced according to TU 20.59.59-008-20629059-2018. It is a dark brown powder. The brands of Coagulants are shown in Table 1.

Table 1. Brands of coagulants

Brands	Ion charge	State of charge	Molecular weight	pH area
BMG-P2-01	Neutral	Low	Midrange	Neutral
BMG-P2-03	Cationic	High	Midrange	Acidic

1.2 The coagulant is used to purify water from grease, oils, petroleum products and separate oil-water emulsions. It improves organoleptic and chemical quality indexes in the treatment of natural and waste waters of industrial plants.

1.3 The coagulant hydrogen index (pH) is 3.0-5.0 (for a 2% aqueous solution).

1.4 By the degree of exposure to the human body, the coagulant is a low-hazard product that belongs to substances of hazard class IV in accordance with GOST 12.1.007.

1.5 The coagulant is harmless to a human body if properly stored and used.

1.6 The coagulant does not have allergic and cumulative properties. It is non-toxic.

1.7 In case of ignition of a polymer container, finely-pulverized water, chemical or air-mechanical foam, sand, and all types of fire extinguishers should be used to stop fire spreading.

1.8 In case of emergency situations, personal protective equipment should be used: small-size industrial gas mask PFM-1 with a multipurpose protective canister PZU, butyl rubber gloves, special protective clothing, and shoes.

1.9 The coagulant is ecofriendly

1.10 Use a sealed container to collect wastes or a contaminated product and then dispose of them as Class5 Hazardous Wastes. Dispose of non-returnable or ineligible containers as household wastes.

2. Method of application

2.1 The coagulant is used as an aqueous solution in combination with an Activator. Industrial coagulants based on 3-valent iron or aluminum are used as Activators (for example, coagulant Aqua – Aurat 30).

2.2 To obtain an aqueous solution, the coagulant is dissolved in demineralized water (the recommended hardness index is <0.13 mg-eq./l) by stirring until a concentration of 2% (two mass percent) is reached. The recommended dissolution temperature is $+20$ ° C, the stirring rate should not exceed 150 rpm. The prepared coagulant should be used within 7 days.

2.3 According to the manual, the coagulant and activator are dosed into purified water once (without correction).

2.3.1 The coagulant aqueous solution (prepared according to 2.2) is dosed into purified water with stirring. The amount of coagulant is selected individually depending on the quality of the wastewater.

2.3.2 After adding the coagulant into the purified water, the aqueous solution of the activator is dosed with intensive stirring (~ 400 rpm) for $100 \div 120$ seconds. Then the stirring rate is recommended to reduce to $50 \div 60$ rpm and continue stirring for $18 \div 20$ min. The amount of the activator is selected individually depending on the quality of wastewater.

When stirring is complete, a Coagulant sediment is formed. It contains a contaminant which settles to the bottom or floats up depending on the type of contamination.

2.4 After the end of mixing, a coagulant precipitate is formed with a pollutant that, depending on the type of pollution, settles to the bottom or floats.

2.5 Subsequently, the formed sediment must be separated (extracted) from the treated water.

3. Safe handling measures

3.1 In case of contact with the eyes or skin, rinse thoroughly with plenty of water; in case of contact with the stomach (by oral route), give plenty of liquid to drink, activated charcoal, and salt laxative.

3.2 Use work wear, safety glasses, rubber gloves when working with the Coagulant. If the work wear is dirty, it must be washed with a laundry detergent.

4. Manufacturer's warranty

4.1 The manufacturer guarantees the quality of the product in compliance with the requirements of operation, storage and transportation.

4.2 The guaranteed shelf life of the packaged product is 36 months as from the date of production.

5. Transportation and storage

5.1 The coagulant is transported in its original package by rail, road, sea, river, and air transport in accordance with the requirements applicable to this type of transport.

5.2 The coagulant is not classified as a hazardous cargo according to GOST 19433.

5.3 The coagulant is stored in the manufacturer's package in sheltered storage facilities protected from direct sunlight at a relative humidity of no more than 75% in conditions that exclude precipitation and dust penetration.

5.4 Storage near open flame is not allowed. All protective packaging should be retained.

