

Disposing of metalworking fluids

IN METALWORKING
& MACHINERY

OVERVIEW

HOW BIOMICROGELS WORK:

Biomicrogels catch any mineral synthetic, semi-synthetic oils, and petroleum products in water effectively, based on sweep- coagulation process.

After separation of oil-water mixture both treated water and removed petroleum products can be returned to the process cycle and re-used. Our flocculants are well compatible with almost all flocculants based on inorganic salts of polyvalent metals cleaning water from suspended particles.



Sustainable

100% biodegradable, made of recycled waste, decreases GHG emissions



Proved efficiency

Proven effectiveness in field trials (table on the right)



Cost-effectiveness

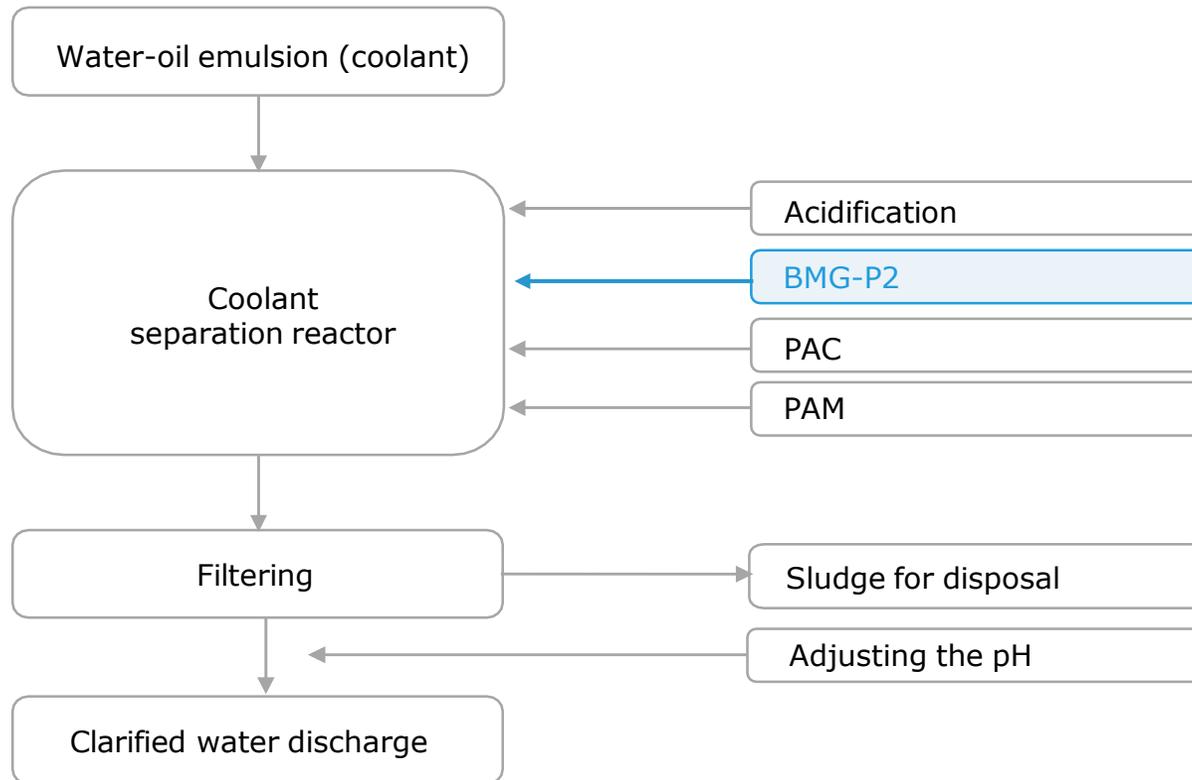
Halving metalworking fluids disposal costs

TABLE OF COMPARATIVE INDICATORS FOR INDUSTRIAL WASTEWATER (BEFORE AND AFTER)

Indicator	Initial values	After implementation of solutions
Petroleum products	1000-5000 mg/l	0.05-10 mg/l
pH	7.0-9.0	7.5-8.5

SOLUTION 1

DIAGRAM OF COOLANT SEPARATION



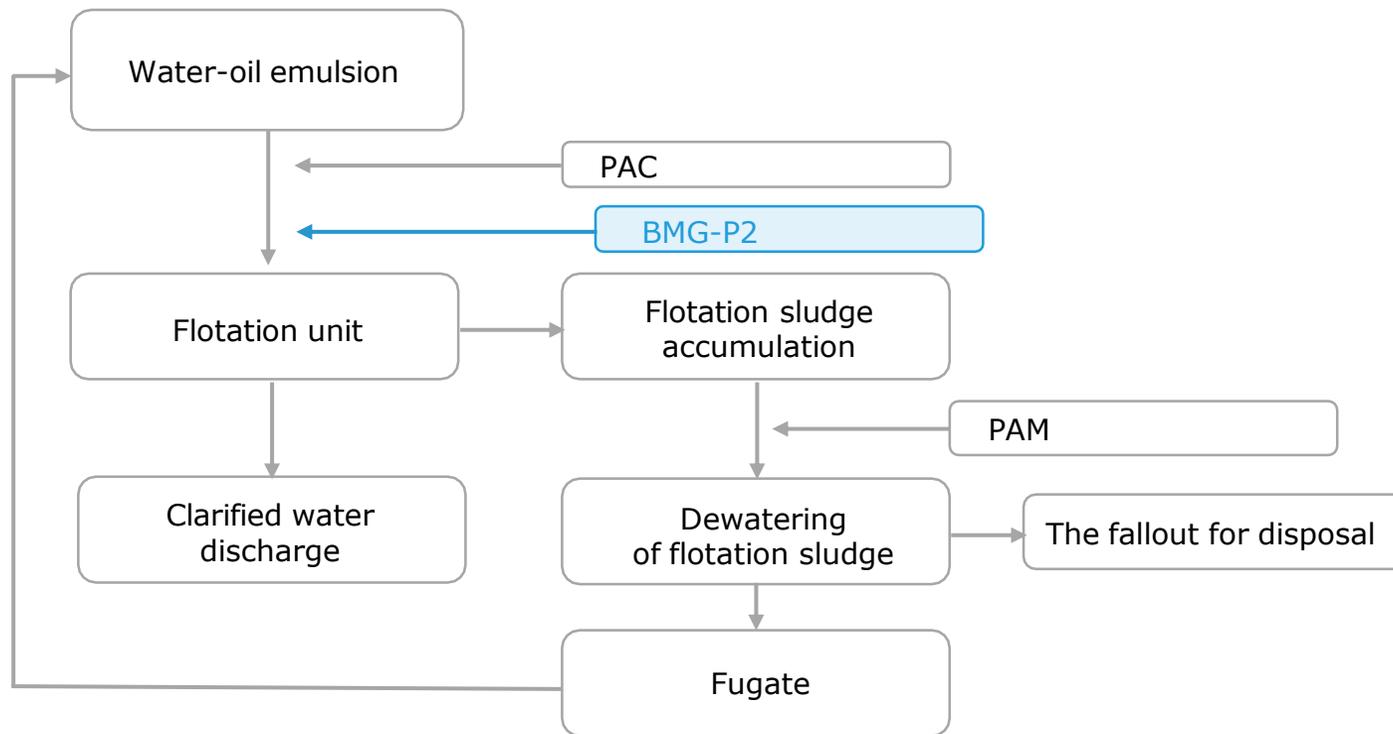
PRODUCTS USED IN THIS SOLUTION:

- Coagulant [Biomicrogel® BMG-P2](#)
- PAC (Poly Aluminum Chloride)
- PAM (Poly Acryl Amide) for dewatering

SOLUTION 2

LUBRICANT-COOLANT SEPARATION SCHEME

SCHEME OF INDUSTRIAL AND STORM WATER TREATMENT USING A FLOTATION UNIT



PRODUCTS USED IN THIS SOLUTION:

- Coagulant **Biomicrogel® BMG-P2**
- PAC (Poly Aluminum Chloride)
- PAM (Poly Acryl Amide) for dewatering

TECHNICAL AND ENGINEERING SUPPORT AT ALL STAGES

- ✓ Chemical laboratories, production of reagents, and a professional team to support customers comprehensively
- ✓ Offices in Oxford and Poland allow to develop activities in the EU

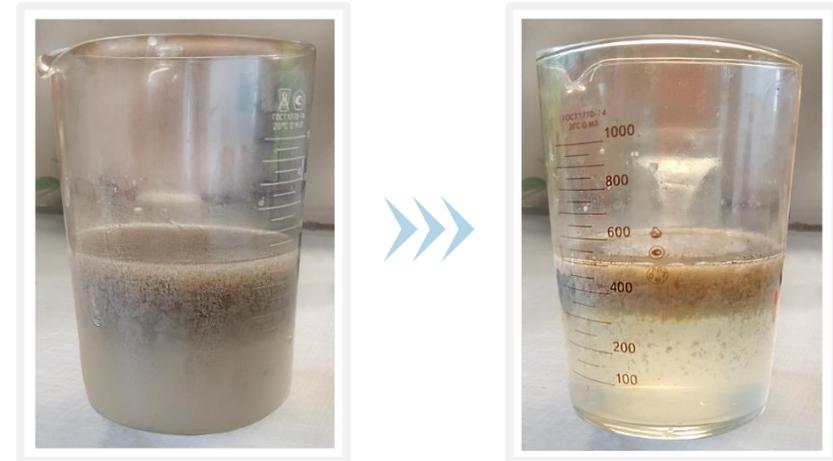


CASE STUDIES: METALWORKING FLUIDS TREATMENT



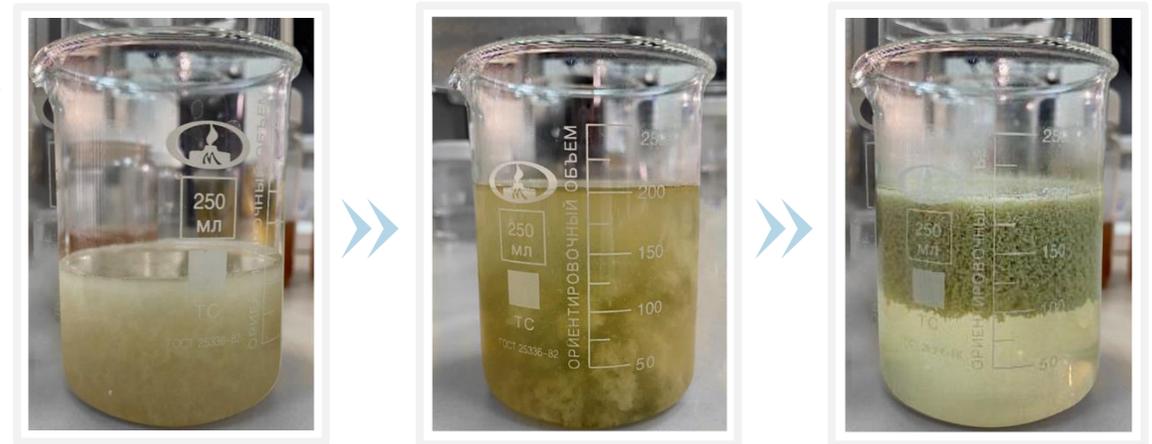
PJSC "SEVERSTAL" (major metalworking company), 2019
Coagulant **Biomicrogel® BMG-P2**

Parameter name	BEFORE	AFTER
pH, units	5.7	7.3 ÷ 7.8
Oil products, ppm	~ 2600	0.80



AO "ChTPZ" (major pipe-rolling plant), 2020
Coagulant **Biomicrogel® BMG-P2**

Parameter name	BEFORE	AFTER
pH, units	11 ÷ 10	6.5 ÷ 8.5
Oil products, ppm	5000	0.04



ABOUT COMPANY

- ✓ 2 manufacturing sites, 18,000 tonnes per year manufacturing capacity
- ✓ 4 chemical laboratories and 2 experimental sites
- ✓ 134 intellectual property items registered in 62 countries
- ✓ World-class R&D capability, 4 PhD-degree specialists, and 17 engineers
- ✓ Offices in Russia, the UK, Poland, SEA



Biomicrogel® products are independently verified by Isle Utilities¹ for the technology performance and product characteristics claims

Awards



Horizon 2020
European Union funding
for Research & Innovation



SLUSH



ALL BMG PRODUCTS

- Coagulant [Biomicrogel® BMG-P2](#)
- Flocculant [Biomicrogel® BMG-C2](#)
- Soil and sand cleaning agent
[Biomicrogel® BMG-C3](#)
- [Biomicrogel® BMG-C4](#) product for
Increasing the vegetable oils extraction
- Solid surface cleaning agent
[Biomicrogel® BMG-C6](#)
- [Spilltex®](#) dip net for petroleum products
collection from water surface
- [Spilltex®](#) filter cloth for laying sumps
- [Spilltex®](#) filter barrier cloth
for shallow rivers
- [Spilltex®](#) universal filter cloth
- [Preparation and Dosing station](#)

ALL BMG SOLUTIONS

- Industrial and storm drains cleanup
from oils, fats and petroleum products
- Coolant processing in metallurgy
and pipe rolling
- Coolant processing in
mechanical engineering
- Performance gains in vegetable
oil extraction
- Oil and petroleum product
spill cleanup
- Clean up of solid surfaces from
oils and petroleum products
- Soil washing from petroleum
products
- Purification of bottom and
produced water

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THANK YOU FOR YOUR ATTENTION!