HIMPROM
himprom-group.ru

CATALOGUE OF REAGENTS

FOR WELL DRILLING

+7 342 225 02 06 / info@himprom-group.ru

ABOUT THE HIMPROM COMPANY

Himprom, LLC was established in 2003. The company develops and provides innovative chemical reagents and technology solutions for various industries and productions. Himprom faces modern challenges and transforms ambient to create new chemical products for sustainable development and stable growth.

Business activities

- Oil and gas chemicals
- Mining chemicals
- Building and construction chemicals
- Food and beverage chemicals
- Cabling and Wiring
- Water treatment and purification chemicals

Himprom Research and Development Center

Himprom research and development center comprises laboratories fitted with leading brands modern equipment to perform researches on a high scientific and technical level, develop and customize solutions.

Himprom chemicals perform high quality properties and fit severe safety standards. Using high quality chemicals stands for sustaining, accident free and efficient operation.

Himprom R&D Laboratory Facilities

- Perm Research and Development Laboratory
- Perm Drilling Fluids Laboratory
- Perm Oilfield Chemicals Laboratory
- Perm HFT Laboratory
- Perm Quality Control Laboratory
- Perm Building and Construction Chemicals Laboratory
- Izhevsk Special Chemicals Laboratory

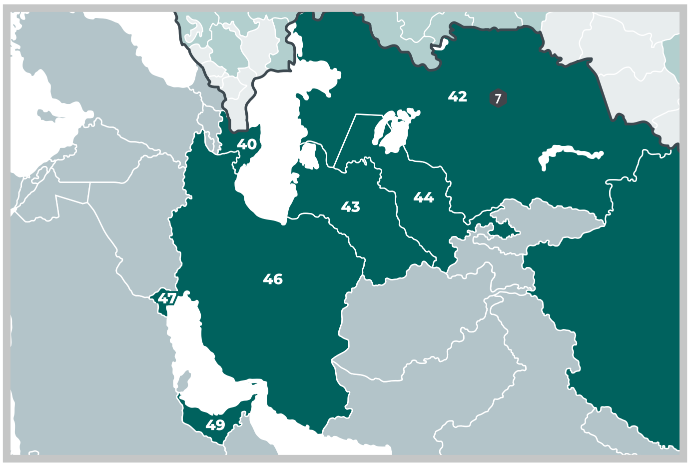
Contact Us

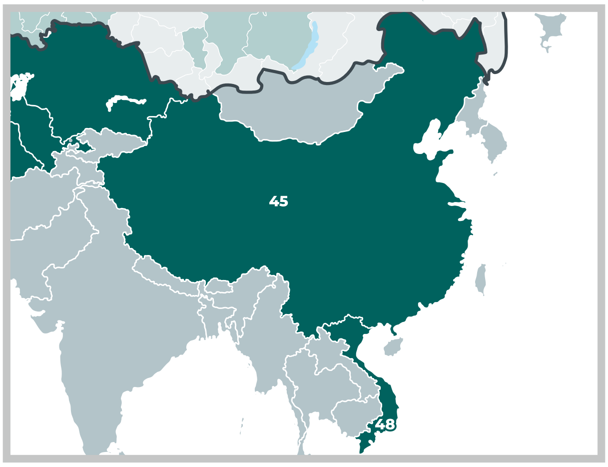
+7 (342) 225 02 06
info@himprom-group.ru
www.himprom-group.ru/en/

HIMPROM

HIMPROM, LLC WORLDWIDE

1 The Arkhangelsk Region
2 The Astrakhan Region
3 The Belgorod Region
4 The Vladimir Region
5 The Volgograd Region
6 The Vologda Region
7 The Voronezh Region
8 The Irkutsk Region
9 The Kemerovo Region
10 The Kirov Region
11 The Kostroma Region
12 The Krasnodar Region
13 The Krasnoyarsk Region
14 The Kurgan Region
15 The Leningrad Region
16 The Moscow Region
17 The Nenets Autonomous District
18 The Nizhny Novgorod Region
19 The Orenburg Region
20 The Perm Region
21 The Republicof Bashkortostan
22 The Komi Republic
23 The Republic of Marij El
24 The Republic of Sakha Yakutia
25 The Republic of Tatarstan
26 The Udmurt Republic
27 The Rostov Region
28 The Samara Region
29 The Saratov Region
30 The Sakhalin Region
31 The Sverdlovsk Region
32 The Stavropol Region
33 The Tyumen Region
34 The Ulyanovsk Region
35 The Khanty-Mansijsk Autonomous District (Yugra)
36 The Chelyabinsk Region
37 The Chuvash Republic
38 The Yamalo-Nenets Autonomous District
39 Republic of Crimea
40 The Republic of Azerbaijan
41 The Republic of Belarus
42 The Republic of Kazakhstan
43 Turkmenistan
44 The Republic of Uzbekistan
45 China
46 Iran
47 Kuwait
48 Vietnam
49 UAE





Branch Offices:

1 Moscow
2 Saint Petersburg
3 Kazan
4 Ufa
5 Krasnodar
6 Izhevsk
7 Kazakhstan (Atyrau)

! **Head office** – Perm

EVGENII MELESHKO

E-mail:
e.meleshko@himprom-group.ru

Mobile:
+7 982 46 26 645

Office:
+7 (342) 225 02 06, int. 1102

www.himprom-group.ru/en/

Dear colleagues,

Let me introduce myself. I am Evgenii Meleshko, Head of the Chemials for well drilling department at Himprom company.

The department has been operating since 2003. In this period over 100 high-impact new products and unique drilling solutions have been developed and introduced to the oil and gas services market to provide sustainable drilling operations.

The Himprom developed chemicals are successfully used at every stage of drilling process to perform efficient and accident free well production.

We are ready to meet new challenges. Call us, we will find an appropriate solution under your specification and minimum expenses.

If you have any question on our chemicals or partnership, please, do not hesitate to call me. I'm open to dialogue!

Best regards,
Evgenii Meleshko

CONTENT

CONTENT

VISCOSIFIERS

GLAMIN. MODIFIED XANTHAN POLYMER

No VOCC
No QAC

Technical Specification
(TU) 2458-001-14023401-2008

Description

Glamin is a high-purity water-soluble xanthan biopolymer with high molecular mass. It is designed to be used as a structure-forming agent for water based drilling fluids of any mineralization.

Physical and chemical properties

Property		Standard
Appearance		Powder of white to light cream color
Moisture content, %, max		13
Viscosity at rotational viscometer, 300 rpm, cP, min		11.0
Viscosity at rotational viscometer, 6 rpm, cP, min		180.0
Viscosity at rotational viscometer, 3 rpm, cP, min		320.0
Viscosity at Brookfild, 1.5 rpm, cP, min		1,950.0
Starch, guar, or their derivatives*		Absent
Sieve residue*, %, max	425 µm	5.0
	75 µm	50.0

**Property is measured on the Customer's demand*

Purpose

Glamin regulates rheology of drilling fluids, providing their exclusive cutting and carrying capacity.
The Glamin additive impacts unique pseudo-plastic properties to drilling mud, namely, the capacity to thin down at high shear rates and form a gel at low speeds of flow. Glamin is biodegradable.
It is recommended for drilling of deviated and horizontal sections, as well as reservoir penetration.

Recommendations for use

Glamin is evenly dosed into drilling fluid via funnel with speed of 20 to 30 minutes per bag. Recommended concentration is from 1.0 to 5.0 kg/m^3, depending on the required viscosity. To perform the drilling fluid technological characteristics under long-term use and storage, it is recommended to be treated with the Biocidol biocide.

Packaging

Glamin is delivered in the multi-layer paper or polypropylene 25 kg bags on 1,000 kg palettes.

FLUID LOSS REDUCERS

REAMIL. MODIFIED STARCH

No VOCC No QAC

Technical Specification
(TU) 2458-026-14023401-2012

Description

Reamil is a modified swelling starch. It is used to stabilize drilling mud of various mineralization and reduce it filtration rate.

Physical and chemical properties

Property	Standard
Appearance	Homogeneous white powder with specific smell, yellowish or pinkish color is acceptable.
Moisture content, %, max	12
pH value of 1% water solution, units	5.0-10.0
Viscosimeter reading at 600 rpm in salt solution (40 g/l), max	18
Viscosimeter reading at 600 rpm in saturated salt solution, max	20
Filtrate volume in salt solution (40 g/l), cm^3 max	10
Filtrate volume in saturated salt solution, cm^3 max	10
Sieve residue 2,000 µm	No residue

Purpose

Reamil is used in oil and gas industry as an additive to drilling fluids in order to regulate the filtration of clay and clay-free water-based drilling fluids with varying degrees of mineralization.

Recommendations for use

Reamil can be used in both in fresh and in mineralized systems. In order to select the optimal concentration, it is recommended to contact Himprom representatives.

Packaging

The delivery form of Reamil is chosen by agreement with the customer.

HIMCMC. DRILLING FLUID ADDITIVE

No VOCC No QAC

Technical Specification
(TU) 2458-127-14023401-2016

Description

HimCMC drilling fluid additive is a carboxymethyl cellulose sodium salt.

Physical and chemical properties

Property		Standard	
		HimCMC LV	HimCMC HV
Appearance		Powder of white to light brown color	
Starch or starch derivatives presence		no	
Viscometer dial reading at 600 r/min	in deionized water	max 90.0	min 30.0
	in 40 g/l salt solution	-	min 30.0
	in saturated salt water	-	min 30.0
Filtrate volume, ml, max		10.0	
Moisture content, %, max		12.0	

Purpose

HimCMC carboxymethyl cellulose sodium salt is used in oil and gas wells drilling servicing and workover processes as a common additive for the most of water based drilling fluids.
Two grades of the additive are manufactured:
HimCMC LV – low viscosity carboxymethyl cellulose – reduces effectively drilling fluid filtration rate;
HimCMC HV – high viscosity carboxymethyl cellulose – controls filtration and rheology properties of drilling fluid.

Recommendations for use

HimCMC recommended concentration in drilling fluid is 5 to 20 kg/m^3. In order to choose the optimal concentration, it is recommended to contact Himprom representatives.

Packaging

HimCMC drilling fluid additive is delivered in 25 kg bags.

HIMPAC LV. POLYANIONIC CELLULOSE

No VOCC No QAC

Technical Specification
(TU) 2458-005-14023401-2011

Description

HimPAC LV is purified polianionic low-viscosity cellulose, designed to reduce the filtration rates of water-base drilling muds.

Physical and chemical properties

Property	Standard
Appearance	Powder-like, fine-grained substance, containing fibers, from the white to cream color
Moisture content, %, max	10.0
Presence of starch or starch derivatives	Absent
pH value of 0.5% water solution, units	6.0-11.0
Filtrate volume, ml, max	16.0
Apparent viscosity, cP, max	40.0

Purpose

HimPAC LV low viscosity polyanionic cellulose is used to reduce the water loss of drilling fluid of various mineralization. It contributes to the formation of thin, dense, hardly permeable filter cake. It has no significant effect on rheological properties.

Recommendations for use

HimPAC LV is evenly dosed into circulating drilling mud via funnel with speed of 10 to 20 minutes per one bag. HimPAC LV recommended concentration in drilling fluid is up to 7 kg/m^3.

Packaging

HimPAC LV low viscosity polyanionic cellulose is delivered in 25 kg bags.

HIMPAC HV. POLYANIONIC CELLULOSE

No VOCC
No QAC

Technical Specification
(TU) 2458-005-14023401-2011

Description

HimPAC HV purified high viscosity polyanionic cellulose is designed to regulate rheological and filtration properties of water-based drilling fluids.

Physical and chemical properties

Property	Standard
Appearance	Powder-like, fine-grained substance, containing fibers, from white to cream color
Moisture content, %, max	10.0
Starch presence	Absent
pH value of 0.5% water solution, units	6.0-11.0
Filtrate volume, ml, max	23.0
Apparent viscosity, cP, min	50.0

Purpose

HimPAC HV purified high viscosity polyanionic cellulose is used to reduce water loss of drilling fluids of various mineralization. It contributes to the formation of thin, dense, hardly permeable filter cake.

Recommendations for use

HimPAC HV is evenly dosed into circulating drilling fluid via funnel, with speed of 10 to 20 minutes per bag. HimPAC HV recommended concentration in drilling fluid is up to 5 kg/m^3.

Packaging

HimPAC HV purified high viscosity polyanionic cellulose is delivered in 25 kg bags.

POLY-MUD FL. SODIUM POLYACRYLATE

No VOCC No QAC

Technical Specification

(TU) 2458-010-14023401-2012

Description

Poly-Mud FL sodium polyacrylate is a low-molecular acrylic polymer with high degree ionic charge.

Physical and chemical properties

Property	Standard
Appearance	Powder of white to yellow color, lumps are acceptable
Bulk density, g/cm^3	0.500-1.000
pH value of 10% water solution	4.0-11.0
Filtration rate, cm^3, max	15.0
Moisture content, %, max	10.0

Purpose

Low-molecular acrylic polymer Poly-Mud FL is designed to stabilize and reduce filtration rate of clay mud, encapsulate drill cuttings, consolidate borehole walls. It contributes to thin, dense, low-permeable filter cake formation. It is efficient both in dispersed mud systems with high solids content, and in non-dispersed mud with low solids content.

Recommendations for use

Recommended concentration of Poly-Mud FL in drilling mud is 0.3 to 1.5%.

Packaging

Poly-Mud FL sodium polyacrylate is delivered in bags of 25 kg.

POLY-MUD FL 1. HYDROLYZED POLYACRYLONITRILE

No VOCC No QAC

Technical Specification
(TU) 2458-009-14023401-2011

Description

Poly-Mud FL 1 is a powder-like polyacrylonitrile obtained by acrylic fiber hydrolysis.

Physical and chemical properties

Property	Standard
Appearance	Powder of light yellow to brown color
pH value of 10% aqueous solution, units of pH	7.5-14.0
Moisture content, %, max	12.0
Fluid loss, ml, in 30 minutes, max	7.5

Purpose

Poly-Mud FL 1 is used in water-based drilling mud to reduce fluid loss. It does not affect the viscosity of drilling mud. It stabilizes effectively clay drilling mud; it reduces the intensity of solid phase development in the process of drilling. It is freeze resistant and is not subject to enzymatic degradation (decay) at high temperatures.

Recommendations for use

Poly-Mud FL 1 is used in drilling mud at concentrations of up to 1.5%.

Packaging

Poly-Mud FL1 is delivered in 25 kg or 22.7 kg bags.

RHEOLOGY MODIFIERS

FCLS. DRILLING AGENT

Technical Specification
(TU) 20.59.59-178-14023401-2018

Description

FCLS drilling agent is a product of interaction of lignosulfonates with salts of chromium and iron.

Physical and chemical properties

Property	Standard
Appearance	Powder of light brown to brown color
Solubility, %, min	90
Moisture content, %, max	10
pH value of 1% water solution, min	4.0
Dilution characteristic, %, min	40
Foaming capacity, cm^3, max	30

Purpose

FCLS is used as a component of process fluids to reduce viscosity and regulate structural and mechanical properties of drilling fluids.
The reagent added improves thermal resistance of drilling mud.

Recommendations for use

FCLS is added to drilling mud at dosage of 0.5 to 4.0%. In order to select the optimal concentration, it is recommended to contact Himprom representatives.

Packaging

FCLS drilling agent is delivered in 25 kg bags.

CSWL. DRILLING AGENT

No VOCC No QAC

Technical Specification

(TU) 20.59.59-177-14023401-2018

Description

CSWL drilling agent is a technical lignosulfonate condenced in an acid medium.

Physical and chemical properties

Property	Standard
Appearance	Powder of light brown to brown color
Solubility, %, min	90
Moisture content, %, max	10
PH value of 1% water solution	6.0-9.0

Purpose

CSWL is used as a component of process fluids to thin down filtration rate of drilling mud (fresh water and mineralized) and to regulate rheological properties under high temperatures. The use of the agent makes it possible to minimize the adhesiveness of filter cake and reduce sludge balling.

Recommendations for use

Concentration of CSWL in drilling mud is 1 to 3%, and depends on mud mineralization and downhole temperature. In order to select the optimal concentration, it is recommended to contact Himprom representatives.

Packaging

CSWL drilling agent is delivered in 25 kg bags.

POLY-MUD S. MODIFIED LIGNOSULFONATE

No VOCC No QAC

Technical Specification
(TU) 2458-073-14023401-2014

Description

Poly-Mud S is a modified lignosulfonate-acrylic agent.

Physical and chemical properties

Property	Standard
Appearance	Fine powder of yellow to brown color
Moisture content, %, max	10
pH value of 1% water solution	3-5
Dilution characteristic, %, min	40

Purpose

Poly-Mud S is designed to regulate properties of drilling fluids in broad range of temperatures from 0 to 180 °C. Poly-Mud S contributes to thinning of thickened clay mud, simultaneously reducing the filtration rate by 30 to 50%. It provides an inhibiting effect on argillaceous rocks of reservoir, preventing accumulation of colloidal clay fraction in drilling mud.
Poly-Mud S is compatible with all drilling agents, and is efficient in broad range of pH values, from 8 to 12. It causes no foaming and does not require any use of defoaming agents.

Recommendations for use

Recommended concentration of Poly-Mud S in drilling fluid is 0.2 to 2.0%. In order to select the optimal concentration, it is recommended to contact Himprom representatives.

Packaging

Poly-Mud S modified lignosulfonate is delivered in double-layer polypropelene bags of 25 or 30 kg.

POLY-MUD FL LIQUID. SYNTHETIC DEFLOCCULANT

No VOCC No QAC

Technical Specification

(TU) 20.59.59-158-14023401-2017

Description

Poly-Mud FL Liquid synthetic deflocculant is a water solution of partially neutralized polyacrylic acid.

Physical and chemical properties

Property	Standard
Appearance	Transparent liquid of light yellow to brown color.
Density, gr/m^3	1.20 – 1.35
pH value, units of pH	6.5 – 9.0
Dilution rate of fresh water solution, %, min	80
Fluid loss for 30 min, ml, max	14

Purpose

Poly-Mud FL Liquid synthetic deflocculant is used in oil and gas wells drilling processes to regulate structural and rheological properties of drilling fluids. It is a highly efficient thinner regardless of drilling mud type, including the conditions of well drilling under temperatures above 200 °C.

Recommendations for use

Poly-Mud FL Liquid synthetic deflocculant is broadly used for upper intervals drilling to dilute solutions with high content of active solids. Poly-Mud FL Liquid synthetic deflocculant recommended concentration is 0.3 to 6.0 kg/m^3 . The fluid recommended pH value is 9 to 12. In order to select the optimal concentration, it is recommended to contact Himprom representatives.

Packaging

Poly-Mud FL Liquid synthetic deflocculant is delivered in 30 kg containers. The form of delivery may be changed on agreement with the Customer.

POLY-MUD THIN. DRILLING MUDS' THINNER

No VOCC No QAC

Technical Specification

(TU) 20.59.59-278-14023401-2020

Description

Poly-Mud Thin drilling muds' thinner is a deflocculating agent based on modified tannins.

Physical and chemical properties

Property	Standard
Appearance	Powder of light brown to brown color
Moisture content, %, max	12.0
pH of 1% aqueous solution, min	4.0
Dilution rate, %, min	40.0
Foaming capacity, cm^3, max	30.0

Purpose

Poly-Mud Thin drilling fluids' tannin based thinner is a highly efficient rheology controller for water based fluids.

Advantages:

- Much more efficient than conventional lignosulfonate based additives;
- Poly-Mud Thin is environmentally friendly agent: chromeless composition makes it possible to be used at locations with high environmental restrictions;
- Poly-Mud Thin can be used with conventional lignosulfonate based additives to enhance their properties.

Recommendations for use

To optimize the structural and rheological properties of the solution, it is usually enough to use from 3 to 10 kg of Poly-Mud Thin per 1 m^3 of the solution. Exceeding the recommended concentration can lead to a sharp decrease in viscosity at a low shear rate. To determine the required concentration and effectiveness of the liquifier, it is recommended to conduct preliminary tests in a model solution. The recommended ratio for improving the properties of reagents based on lignosulfonates is 1:4 (Poly–Mud Thin to lignosulfonates).

Packaging

Poly-Mud Thin drilling muds' thinner is delivered in multilayer laminated paper bags of 25 kg.

INCAPSULATORS

POLY-MUD H. ACRYLIC POLYMER

No VOCC No QAC

Technical Specification
(TU) 2458-011-14023401-2012

Description

Poly-Mud H acrylic polymer is a partially hydrolyzed polyacrylamide with high molecular mass and average anionic activity, obtained by salt polymerization of acrylamide and sodium acrylate. It improves rheological properties of drilling fluids, which contributes to efficient drill cuttings outflow from the borehole.

Physical and chemical properties

Property	Standard
Appearance	White or light-yellow fine powder
Moisture content*, %, max	10.0
Bulk density, kg/m^3	600-1000
pH value of 1% water solution*	6.0-8.0
Dynamic viscosity by Brookfield mPa*c of 0.5% solution in 10% solution of NaCl, min	70

**Property is measured on the Customer's demand*

Purpose

Poly-Mud H is designed to flocculate, encapsulate drill cuttings in water-based drilling mud. It is also used to increase the viscosity of drilling mud and to consolidate borehole walls.
It forms a thin, solid filter cake on borehole walls, preventing the hydration of clays and clogging of pore throats.

Recommendations for use

Poly-Mud H is used in drilling fluids in concentrations up to 0.3%.

Packaging

Poly-Mud H acrylic polymer is delivered in 25 kg bags.

POLY-MUD LIQUID. ACRYLIC EMULSION

No VOCC No QAC

Technical Specification

(TU) 2458-012-14023401-2012

Description

Poly-Mud Liquid acrylic emulsion is an emulsion of copolymer of acrylamide and sodium acrylate with high molecular mass and average anionic activity. Poly-Mud Liquid improves the rheological properties of drilling fluids, contributing to efficient outflow of drill cuttings from borehole.

Physical and chemical properties

Property	Standard
Appearance	Liquid of white color
Density, g/cm^3	1.0-1.1
Dynamic viscosity on Brookfield of 1% water solution (sp №1, 0.3 rpm), mPa*c, min	1,500
pH value of 1% water solution	7-9

Purpose

Poly-Mud Liquid acrylic emulsion is used in water-base drilling fluids to increase their viscosity, consolidate borehole walls, encapsulate drill cuttings. It prevents swelling of active clays and drill cutting balling up on tools and drill pipes. The commodity form of the product provides its quick preparation in cold water even.

Recommendations for use

Poly-Mud Liquid acrylic emulsion is used in drilling fluid in concentrations up to 0.5%.

Packaging

Poly-Mud Liquid acrylic emulsion is delivered in cans of 30 liters.

WETTING AGENTS

GCL-11NA. HYDROFOBICIZING ORGANIC-SILICON LIQUID

No VOCC No QAC

Technical Specification

(TU) 2458-006-14023401-2011

Description

GCL-11Na hydrofobicizing organic-silicon liquid is a concentrated water solution of sodium methylsiliconate.

Physical and chemical properties

Property	Standard
Appearance	Transparent or slightly cloudy liquid, of colorless state to light brown color. Fine-dispersed deposit is acceptable.
pH value of 1% aqueous solution, min	9.0
Density at 20 °C, g/m	1.15-1.35

Purpose

GCL-11Na is designed to be used as a modifier of water-based drilling mud to impart hydrophobic properties to clay and borehole walls surfaces.

Recommendations for use

GCL-11Na is used in concentration of 0.5 to 3.0 kg/m^3, depending on the drilling mud type.

Packaging

GCL-11Na hydrofobicizing organic-silicon liquid is delivered in metal barrels of 240 kg.

INGIDOL SIL. HYDROFOBICIZING ORGANIC-SILICON LIQUID

No VOCC No QAC

Technical Specification

(TU) 2458-025-14023401-2012

Description

Ingidol Sil hydrofobicizing organic-silicon liquid is a composition on the basis of organic-silicon compounds. It is used in drilling fluids to hydrobiocize the clay surface of drill cuttings and borehole walls.

Physical and chemical properties

Property	Standard
Appearance	Transparent or slightly cloudy liquid, of colorless state to light brown color. Fine-dispersed deposit is acceptable.
Density at 20 °C, g/cm^3	1.15-1.35
pH value, units of pH	9.0

Purpose

The hydrophobic organosilicon liquid Ingidol Sil contains sodium and potassium organosilicon compounds, as a result it has a number of advantages:

- it prevents dispersion of sludge, and stabilizes unstable rocks prone to sloughing and slides;
- it stabilizes rheological and filtration parameters of drilling fluid, including the conditions of salt action, and helps to restore the parameters of drilling mud after its increased salinity or as a result of drilling into active sticky clays.

Recommendations for use

Recommended concentration of Ingidol Sil in drilling fluid varies from 0.5 to 3 kg/m^3, depending on the drilling mud type.

Packaging

Ingidol Sil hydrofobicizing organic-silicon liquid is delivered in 240 kg metal barrels.

CLAY INHIBITORS

No VOCC No QAC

INGIDOL A. INHIBITING COMPOSITION FOR DRILLING FLUID

Technical Specification
(TU) 2458-018-14023401-2010

Description

Ingidol A is a concentrate of aliphatic series amides with low cationic properties. The use of Ingidol A prevents dispersion of interstitial clay and caving of borehole walls composed of claystones and siltstones (so called chocolate clays).

Physical and chemical properties

Property	Standard
Appearance	Viscous liquid, of dark brown to black color
pH value, units of pH, min	6.0

Purpose

Ingidol A is an organic inhibitor of clay swelling, cementing the claystone-like and silty deposits. It is used in mineralized or salt-saturated water-based drilling muds.
Ingidol A can be applied as secondary inhibitor in clayless biopolymer potassium chloride mud solutions, for example, for slant and horizontal sidetracks drilling. As for reservoir penetration, Ingidol A can be used if shale content of terrigenious reservoir exceeds 15 to 20%, while permeability is not above 50 mD. In this case, beside non-organic inhibitor (potassium chloride) it is advisable to add Ingidol A into drilling fluid, to prevent colmatation of low permeable reseroivoir as a result of swelling reservoir clay.

Recommendations for use

Recommended concentration of the Ingidol A composition in drilling fluid is 1.5 to 5.0%. In order to select the optimal concentration, it is recommended to contact Himprom representatives.

Packaging

Ingidol A inhibiting composition for drilling fluid is delivered in 250 kg metal barrels.

INGIDOL B. INHIBITING COMPOSITION

No VOCC No QAC

Technical Specification

(TU) 2458-018-14023401-2010

Description

Ingidol B inhibiting composition is a highly efficient composition of natural amides and polyethers with modifying additives.

Physical and chemical properties

Property	Standard
Appearance	Viscous liquid, of dark brown to black color
pH value, units of pH, min	6.0

Purpose

Ingidol B inhibiting composition provides solution to wide range of well drilling tasks, the most important of which are:

- inhibiting of swelling clay minerals, providing the maintainance of stability of borehole walls, composed of unstable hygroscopic clay rocks;
- reduction of clay buildup in drilling mud due to increased cutting-carrying capacity as a result of prevented dispersion of mud laden fluid.

Recommendations for use

An optimal way of Ingidol B composition adding to the drilling mud is processing of mud into active flow tank through mud hopper. The Ingidol B adding should be carried out strictly in cyclic order. Ingidol B recommended concentration in drilling mud is 0.2 to 0.5%. At first signs of hole sloughing, the concentration of Ingidol B can be brought up to 1 to 2%. The agent can be used in thin clay drilling muds.

Packaging

Ingidol B inhibiting composition is delivered in 250 kg metal barrels.

TERRAHIB. CLAY SHALE HYDRATION INHIBITOR

No VOCC No QAC

Technical Specification
(TU) 20.59.59-211-14023401-2018

Description

Depending on composition, clay shale hydration inhibitor TerraHib is presented in three brands:
- TerraHib AM is a polyamines and polyethers based composition;
- TerraHib SF is a water based organic-mineral composition;
- TerraHib DNA is a glycol ethers and fatty acids ethanolamides composition.

Physical and chemical properties

Property	Standard		
	TerraHib AM	TerraHib SF	TerraHib DNA
Appearance	Liquid of red to brown color	Transparent or slightly cloudy colorless liquid. Sediment is acceptable.	Liquid of dark brown color
pH value of 1% water solution, units	6.0-10.0	9.0-12.0	min 8.0
Density at 20 °C, g/cm^3	1.18-1.28	1.40-1.50	1.00-1.26
Freezing temperature, °C, max	-15	-25	-20

Purpose

TerraHib is used to prevent processes of clay hydration and swelling during oil and gas wells drilling.

Recommendations for use

TerraHib can be used in drilling fluids on the basis of fresh and mineralized (up to full saturation) water.
The optimal concentration of TerraHib AM in drilling mud is from 0.5 to 1.5%.
The optimal concentration of TerraHib DNA in drilling mud is from 1 to 5%.
The working concentration of TerraHib SF is from 5 to 10% and depends on the drilling mud and open borehole residence time.

Packaging

TerraHib is delivered in metal barrels of 200 liters. The form of delivery can be changed according to the customer specification.

POLY-MUD DC CATIONIC POLYMER

No VOCC No QAC

Technical Specification
(TU) 20.59.59-316-14023401-2021

Description

Poly-Mud DC is a PolyDADMAC based water-soluble cationic polymer of various molecular mass.

Physical and chemical properties

Property	Standard
Appearance	Powder of white to yellow color
Dynamic viscosity of 40% solution, mPas	80 – 40.000
pH value 1% aqueous solution, units	3.0 – 8.0
Solid content, %, min	85

Purpose

Poly-Mud DC cationic polymer is used as clay stabilizing additive for drilling muds and well treatment fluids.
The polymer creates stable electrostatic bonds with clay particles resulting in hydrophobic agglomerations formation.

Recommendations for use

Poly-Mud DC dosage is determined by laboratory tests. To find an appropriate solution, please, contact the Himprom specialists.

Packaging

The Poly-Mud DC cationic polymer is delivered in 25 kg bags.

POLY-MUD DC LIQUID. CATIONIC POLYMER

No VOCC No QAC

Technical Specification
(TU) 20.59.59-317-14023401-2021

Description

Poly-Mud DC Liquid is an aqueous solution of a cationic polymer with different molecular weights based on polydiallyldimethylammonium chloride.

Physical and chemical properties

Property	Standard
Appearance	Viscous opalescent liquid from colorless to light yellow color
pH value of 1% aqueous solution, units of pH	3.0 – 8.0
Dynamic viscosity, mPa.s	200 – 40000

Purpose

Poly-Mud DC Liquid cationic polymer acts as an inhibitor of clays in drilling fluids, well completion and treatment fluids. The principle of action of the additive is based on the construction of strong electrostatic bonds with clay molecules, followed by the formation of hydrophobic agglomerations.

Recommendations for use

The dosage of Poly-Mud DC Liquid is determined during preliminary laboratory tests. In order to choose the optimal solution, contact a representative of the Himprom company.

Packaging

Cationic polymer Poly-Mud DC Liquid is delivered in barrels of 200 liters.

No VOCC No QAC

HIMSIL. WATER GLASS IN A DRY FORM

Technical Specification
(TU) 20.59.59-218-14023401-2018

Description

HimSil is a powdered agent made by water glass modification on special drying equipment.
Two grades of the agent are manufactured:

- HimSil N – sodium glass;
- HimSil K – potassium glass.

Physical and chemical properties

Property	Standard	
	Grade N	Grade K
Appearance	Powder of light brown to dark color	Crystal powder of white or grey color
SiO_2 content, % *	40-50	25.0-75.0
Na_2O content, % *	12-20	-
K_2O content, % *	-	23.0-55.0
Losses during calcination (900 °C), %	-	10.00-20.00
Bulk density, gr/cm^3	-	0.3-0.7

* *The parameter is measured at the customer's request*

Purpose

HimSil is used as an efficient clay stabilizing additive for water based drilling mud.
HimSil reduces minerals' capillar swelling. When HimSil interacts with polyad ions (Ca^{2+}, Mg^{2+}), nonsoluble calcium and/or magnesium silicates performs setting in pore spaces and forming nonsoluble silicate layer to hard and consolidate unstable clays. This layer prevents contact of a drilling mud with the formation. Under high temperatures (over 90°C), polycondensation of silicates and minerals performs to enhance borehole stability.

Recommendations for use

In absence of Ca^{2+} soluble silicates remain stable under pH less than 10.5 (pH>10.5). In presence of Ca^{2+} and under pH over 10.5 (pH<10.5) precipitation performs.
When silicates are added to a high-solids mud, pH should be 9 points and over. When preparing technical water based mud, pH should be 11 points and over, calcium and magnesium ions should be set with soda ash. If these actions are not held, alkaline earth ions will remove silicates from the mud.
In order to select the optimal concentration, it is recommended to contact Himprom representatives.

Packaging

HimSil water glass in a dry form is delivered in 25 kg bags.

CONSOLIDATORS

ASFASOL. INHIBITING ADDITIVE FOR DRILLING FLUID

No VOCC No QAC

Technical Specification
(TU) 2458-072-14023401-2013

Description

Asfasol is a powder-like sulfonated asphalt. It is used as inhibitor-consolidator, colmatant of pores and micro-fissures.

Physical and chemical properties

Property	Standard
Appearance	Powder-like substance of brown to black color.
Moisture content, %, max	25
pH value of 2% water solution, units	7-11

Purpose

Asfasol is designed for the use as inhibitor of swelling clays. It contributes to formation on the borehole walls of thin and solid filter cake. Asfasol is also applied as colmatant of pores and micro-fissures. It enhances the stability of argillaceous rocks and prevents loosening of the structure, softening of the rock and its sloughing. It reduces water yield of drilling mud under conditions of high temperature (HTHP). It reduces dispergation of sludge particles in the process of drilling. It improves the lubricating properties of drilling mud. It is not subjected to bacterial decomposition. The action mechanism of sulfonated asphalt as inhibitor of clays in drilling mud is explained with the fact that electronegative sulfonated macromolecules fasten onto electropositive tips of clay particles. Therefore, a neutralization barrier which suppresses water absorption in clay.

Recommendations for use

The optimal concentration of the chemical product in each case is determined taking into account the drilling conditions and regime. In order to select the proper concentration, it is recommended to contact Himprom representatives.

Packaging

Asfasol is delivered in 25 kg bags.

INGIDOL AK. POLYAMIDE BASE

Technical Specification
(TU) 20.59.59-240-14023401-2019

No VOCC No QAC

Description

Ingidol AK is a composition of polyamide products on the basis of hydrolytic sapropel. Ingidol AK has 100% water solubility. The product has been elaborated to provide high inhibiting and consolidating properties of drilling mud systems.

Physical and chemical properties

Property	Standard
Appearance	Viscous liquid of dark brown color
Density, g/cm^3	1.2-1.4
pH value, units of pH, min	9.0

Purpose

Ingidol AK polyamide base is used to prepare well construction and workover process fluids, to reduce clay hydration.
The inhibiting effect is created due to binding of a most part of water.

Advantages

High inhibiting capacity of Ingidol AK based fluids can be achieved without KCl added.
The solution has high anti-dispersion activity, which prevents formation of shale collars, caving and well narrowing.
Ingidol AK based drilling fluid specific density starts from 1.25-1.3 g/cm^3 even without solids added. Thus the fluid can be used for well killing.
Ingidol AK is a low-hazardous substance by health effect degree.
If it is used in composition with Terra FL fluid loss reducing agent, the minimal filtration rates can be achieved.

Recommendations for use

Working fluid preparing process includes consequent mixing and dissolving raw components.
Ingidol AK polyamide base is added to biopolymer solution in concentration of 20% to 80%, depending on the ready fluid properties.
To obtain the solution, by its inhibiting properties comparable with oil-based mud, it is recommended to enter Ingidol AK polyamide base in 50-70% concentration.
All of the water-soluble components (polymers, salts etc) are to be dissolved in water first, and only then they should be mixed with the drilling mud, because, if they are entered directly into a polyamide solution, they would be very slow to dissolve.

Packaging

Ingidol AK polyamide base is delivered in steel or polypropylene barrels of 250 kg.

INGIDOL GGL. COMPLEX INHIBITOR

No VOCC No QAC

Technical Specification

(TU) 2458-131-14023401-2016

Description

Ingidol GGL complex inhibitor is a composition of bitumen and its derivates, gilsonite and modified fatty acids.

Physical and chemical properties

Property	Standard
Appearance	Homogeneous heavy bodied liquid of brown to black color
Density, g/cm^3	1.05-1.30
Freezing point, °C, max	0

Purpose

Ingidol GGL is added to water base mud to stabilize well bore while drilling water-sensitive micro-fissured unstable clays. The inhibitor is used to prolong the time of stable condition of a problem interval. Ingidol GGL contributes to formation of more solid and elastic low-permeable filter cake, enhancing the lubricating capacity and minimizing packing.

Recommendations for use

IIngidol GGL is easy to use – the dispersible structure of the product makes it possible to add it into mud system promptly, without durative mixing, in strong concentration. In order to select the optimal concentration, it is recommended to contact Himprom representatives.

Packaging

Ingidol GGL complex inhibitor is delivered in 215 kg barrels.

HIMSEAL. LATEX CONSOLIDATOR

No VOCC No QAC

Technical Specification
(TU) 20.59.59-362-14023401-2022

Description

HimSeal is a modified finely dispersed latex.

Physical and chemical properties

Property	Standard
Appearance	Powder from white to grey color
Bulk density, gr/cm^3	0,3-0,7

Purpose

HimSeal is designed to stabilize the wellbore. Elastic and deformable reagent particles make it possible to effectively seal microcracks and pores. The use of HimSeal contributes to the formation of thin, dense, elastic filter cake and prevent the sloughing of unstable clay rocks. HimSeal provides additional control of filtration HTHP, high efficiency in reducing filtration PPT and minimizes the occurrence of differential sticking.

Recommendations for use

For maximum efficiency and the creation of a low-permeable filtration cake, HimSeal is recommended to be used together with a cross-linking agent, for example, chalk. The optimal concentration depends on the formation geology and the presence of additional microcolmatants in the composition of the solution. It is recommended to conduct preliminary test to estimate the effect on the system properties, the preferred starting concentration is from 20 kg /m^3.

Packaging

HimSeal latex consolidator is delivered in bags of 25 kg.

TERRAHIB ALP. ORGANOALUMINIUM COMPLEX

No VOCC No QAC

Technical Specification

(TU) 20.59.59-363-14023401-2022

Dewcription

TerraHib ALP is a product of the interaction of high molecular weight natural organic compounds and their salts with aluminum compounds.

Physical and chemical properties

Property	Standard
Appearance	Black powder
pH value of 2% aqueous solution, units of pH	10.0-12.5

Purpose

Terrahib ALP aluminum-organic complex is used in oil and gas industry to stabilize rocks prone to scree and landslides. The product is reversibly soluble in water depending on the pH of the drilling fluid. When the value of the hydrogen index is in the range of 10.5-11.0 pH units, the complex is in a dissolved state, when the pH of the drilling fluid reduces, TerraHib ALP forms a colloidal precipitate. The formed colloidal phase is deposited in the pore throats and the interplanar space of clay rocks, blocking micro-fissures of clay minerals and increasing the stability of the borehole. Also, TerraHib ALP provides inhibition of clay swelling, regardless of the pH value of the drilling fluid and its changes over time, which allows additional control of the HTHP filtration index without increasing viscosity.

Recommendations for use

The recommended concentration of TerraHib ALP for stabilization of sludge and borehole is 5-20 kg/m^3. To ensure efficiency and to prevent the formation of colloidal sediment when injecteing the reagent into the drilling fluid, it is necessary to maintain the pH of the drilling fluid in the range from 10.5 to 11.0 units. Before adding TerraHib ALP to a seawater system or other high-rigidity system, it is necessary to reduce the overall system rigidity to at least 400 mg/dm^3. To enhance the efficiency and create a low-permeable filtration cake, it is recommended to use TerraHib ALP together with a fine latex consolidator HimSeal.

Packaging

The form of delivery of the TerraHib ALP organo-aluminum complex is chosen by agreement with the customer.

DETERGENTS AND SUPPRESSOR ADDITIVES

INGIDOL DT. SUPPRESSOR ADDITIVE

No VOCC
No QAC

Technical Specification
(TU) 2458-018-14023401-2010

Description

Ingidol DT suppressor additive is a multicomponent additive of natural oils and alkyl oxides.

Physical and chemical properties

Property	Standard
Appearance	Viscous liquid of brown to light yellow color
pH value, units of pH, max	6.0

Purpose

Ingidol DT is used in the oil and gas industry, during the construction and repair of wells as an additive to drilling fluids designed to reduce oil seal formation on the bit and BHA. The product forms a stable microemulsion of the solubilization type, the emulsion particles are adhesive active at the metal clay boundary and effectively shield the surface of the tool from the sticking of clay sludge. Ingidol DT increases the removal of sludge as well as the mechanical drilling speed and reduces the friction of the drilling tool on the walls of the well.

Recommendations for use

Ingidol DT is recommended to be injected in the following ways: under the suction of the drilling pump; into the drill string during connection. The optimal concentration of the product in each case is determined taking into account the conditions and drilling mode.

Packaging

The inhibiting composition for drilling fluids Ingidol DT is delivered in cans of 30 kg or in barrels of 200 kg.

INGIDOL DT-1. SUPPRESSOR ADDITIVE

No VOCC No QAC

Technical Specification
(TU) 20.59.59-293-14023401-2020

Description

Ingidol DT-1 suppressor additive is a specially formulated water solution of surfactants and wetting agents.

Physical and chemical properties

Property	Standard
Appearance	Viscous liquid of brown to light yellow color.
pH value, units of pH, min	6.0

Purpose

Ingidol DT-1 is used in the process of drilling to reduce balling on drill bit and BHA, to reduce surface tension and increase the efficiency of drill cuttings transport. Ingidol DT-1 can be used in fresh water base, sea water base, and salt-saturated mud solutions. It contributes to enhancement of the mechanical drilling speed, reducing friction of drilling tools with wellbore walls. It has no effect on characteristics of drilling fluid.

Recommendations for use

The effective concentration of Ingidol DT-1 ranges from 0.5 to 1.5 l/m^3. When drilling into highly viscous clays, it is recommended to bring it to the concentration maximum to 5 l/m^3 to reduce the processes of balling on drill bit and BHA.

Packaging

Ingidol DT-1 is delivered in 30 kg plastic containers or 200 kg metal barrels.

BIKSOL FREE. ANTISTUCK ADDITIVE

No VOCC No QAC

Technical Specification
(TU) 2458-043-14023401-2013

Description

Biksol Free is an oily liquid containing the antioxidant and other additives.

Physical and chemical properties

Property	Standard
Appearance	Oily liquid of yellow to brown color
Density, g/cm^3	0.835-0.855
Water solubility	Not soluble

Purpose

Biksol Free is used in drilling muds to prevent sticking of drilling tools, it also makes it possible to effectively release stuck pipes without any need of fishing jobs. Biksol Free, while penetrating through filter cake, dehydrates it and quickly destroys it, creating channels for fluid to pass them through, which stabilizes the pressure. The product is compatible with all types of water-based drilling muds, and contains no hydrocarbons. Biksol Free is used to release stuck pipes, lubricating drill pipes, which increases the movement of drillstring, and thus, leads to releasing stuck pipes, as a result of chemical reaction and mechanical pressure of drillstring.
The product is compatible with various water-based drilling fluids.

Recommendations for use

Recommended concentration of Biksol Free in drilling mud is 1% (10 kg/m^3). To release stuck pipes it is recommended to bring the concentration of Biksol Free in the fluid of anti-tack agent tanks up to 8 to 10% (80-100 kg/m^3). The optimal concentration of the product in each case is selected taking into account the conditions and drilling mode, it is recommended to contact Himprom representatives to choose the proper concentration.

Packaging

Biksol Free is delivered in 170 kg metal barrels, 30 liter plastic containers.

LUBRICANTS

LUBRICON. LUBRICATING ADDITIVE FOR DRILLING FLUIDS

No VOCC No QAC

Technical Specification
(TU) 2458-023-14023401-2012

Description

Lubricon is an original mixture of fatty acids, products of their interaction with diethanolamine and potassium hydroxide.

Physical and chemical properties

Property	Standard
Appearance	Viscous liquid of black to dark brown color.
pH value, units of pH, max	9.0
Freezing point, °C, max	-8

Purpose

Lubricon is designed for the use in oil and gas industry to reduce friction coefficient of drilling mud, increasing the mechanical speed of drilling and reducing the hazards of stuck equipment. Lubrikon reduces balling of drill cuttings on the components of BHA and the equipment of primary system of cleaning drilling fluid, reducing depreciation of moving elements of mud system, minimizing power imputs due to reduced friction in the hydraulic part of mud pumps. It is possible to manufacture the lubricating additive Lubrikon with characteristics adjusted to the Customer's requirements.

Recommendations for use

Lubrikon is designed for the treatment the fresh water, low-mineralized, salt-saturated and inhibiting drilling muds in the volume of 0.3 to 2% (by mass) depending on the characteristics of the applied lubrication.

Packaging

Lubricating additive for drilling fluids Lubricon is delivered in metal or plastic barrels.

HIMLUBE ECO. LUBRICATING ADDITIVE

No VOCC

No QAC

Technical Specification

(TU) 20.59.59-226-14023401-2019

Description

HimLube Eco lubricating additive for drilling muds is a product based on fatty acid esters of vegetable oils.

Physical and chemical properties

Property	Standard
Appearance	Viscous liquid of dark yellow to black color
Freezing point, °C, max	-8
pH value, units of pH, min	7.0

Purpose

HimLube Eco lubricating additive is designed for application in drilling muds used for well construction and workovers, with the view to reduce friction coefficient, increase drilling rate, and mitigate the risk of stuck drill pipes.
HimLube Eco is compatible with various components of drilling fluids, and forms a stable emulsion in fresh and mineralized solutions. The product contributes to preservation of initial permeability of productive reservoirs and increases the efficiency of low-permeable productive horizons opening . HimLube Eco is suitable for use in areas of high environmental risk: on offshore drilling platforms, in conditions of pitless drilling, etc.

Recommendations for use

Optimal concentration of the HimLube Eco lubricant, to achieve the required antifriction effect, is 0.3-1.0% for fresh drilling muds, and 0.5-2.0% for mineralized and salt-saturated drilling muds, correspondingly.
In the event of significant drags under high inclination angles, concentration of HimLube Eco in drilling mud can exceed 3% of the volume.

To obtain optimal results, it is recommended to enter the HimLube Eco lubricant in the following number of ways:

- enter it into a fresh drilling mud in concentration of 0.5-1.0%;
- treat circulating drilling mud with the use of a mud hopper, increasing concentration of the HimLube Eco lubricant not more than 0.5-1.0% to the drilling mud volume per 1 cycle;
- enter it into drilling pipes directly while performing drill-pipe connections, as well as into the suction of circulating pump, to obtain the maximum of anti-cake effect.

Packaging

HimLube Eco lubricating additive for drilling muds is delivered in 200 kg steel barrels.

SPHERELUBE. ANTIFRICTION AGENT

No VOCC No QAC

Technical Specification
(TU) 20.59.59-220-14023401-2018

Description

Spherelube antifriction agent is a polymer mechanical lubricating additive for water-based drilling muds.

Physical and chemical properties

Property	Standart	
	Grade A	Grade B
Appearance	Spheres of white to grey color	
Bulk density, g/cm^3	0.5-1.5	
Mass part of 0.425-1.0 mm spheres, %, min	10	70
Mass part of spheres less than 0.425 mm, %, min	70	N/A

Purpose

Spherolub is designed to reduce downhole friction forces when drilling in deep wells and wells with large vertical departure by smoothing the surface roughness between the drill string and the wellbore. The product is not abrasive unlike glass microspheres and does not have a dangerous toxic effect.

Recommendations for use

Recommended concentration of Spherelube antifriction agent is 5 to 20 kg/m^3 to reduce torque and drag. When running casing, recommended concentration is 20-35 kg/m^3.
In order to select the optimal concentration, it is recommended to contact Himprom representatives.

Packaging

Spherelube antifriction agent is delivered in lined multi-layer paper bags of 25 kg.

SPHERELUBE GL. ANTIFRICTION AGENT

No VOCC No QAC

Technical Specification
(TU) 20.59.59-367-14023401-2022

Description

The antifriction agent Spherelube GL is a glass microspheres used to reduce torque and to facilitate slipping during horizontal drilling due to the ball-bearing effect.

Physical and chemical properties

Property		Standard
Appearance		Homogeneous bulk material of white color. Gray, green and blue shades are allowed.
Granulometric composition:	% of mass granules with size of less than 1 mm, min	98.0
	% of mass granules with size of less than 0.85 mm, min	80.0
Bulk density, g/cm^3		1.50-1.70

Purpose

Spherelube GL is used in oil industry when drilling in deep wells and wells with large vertical departure and before running the casing (tail). Thanks to the high density compared to polymer beads, glass beads remain suspended in high density solutions. Spherelube GL has certain advantages: the product is made of high-quality glass, is not prone to destruction during usage. Additionally, the product is chemically inert, resistant to high temperatures and pressures, and can be used in water-based and oil-based drilling fluids.

Recommendations for use

TIn order to avoid settling of microspheres in the preparation tank, it is recommended to inject Spherelube GL immediately before spotting pill on the bottom. Use of microspheres, the particle size of which exceeds the size of the filter holes, will increase the lubricity of the agent and prevent partial clogging of the filters. The recommended concentration for reducing friction and torque is 5-20 kg/m^3. For lowering the casing, the optimal concentration is from 20-35 kg/m^3.

Packaging

Spherelube GL is delivered in multilayer paper bags with a laminated layer of 25 kg.

HIMLUBE RG. POROELASTIC GRAPHITE

Technical Specification
(TU) 20.59.59-371-14023401-2022

No VOCC No QAC

Description

Poroelastic graphite HimLube RG is designed to control filtration and prevent loss of circulation of drilling fluids, including conditions of elevated temperatures and pressures.

Physical and chemical properties

Property		Standard	
		HimLube RG-A	HimLube RG-B
Appearance		Powder of dark-grey to black color	
Moisture content, %, max		1.0	
Granulometric composition:	% of mass granules with size of more than 200 mkm, %, max	10	–
	% of mass granules with size of less than 71 mkm, %, max	10	–
	% of mass granules with size of more than 425 mkm, %, max	–	10
	% of mass granules with size of less than 315 mkm, %, max	–	10

Purpose

HimLube RG is used in oil and gas industry during the construction of wells to control filtration and stabilize the walls of the well. The chemical product is graphite particles that are able to shrink and restore their shape without destruction. When the pressure in the well increases, the particles compress and penetrate into cracks and pores, sealing the rock. The formed block isolates the rock from the tool, which helps to reduce tool wear, transfer the load to the drilling bit, facilitate rotation and provide lowering the casing of high quality. HimLube RG reduces HTHP filtration, is chemically inert and compatible with water-based and oil-based fluids.

Recommendations for use

The recommended concentration of HimLube RG for the initial treatment of drilling fluid: to reduce friction – 5-10 kg/m^3, to reduce filtration losses – 15-50 kg/m^3, combined with HimSeal fine latex consolidator it enhances the effect of the reagent. In areas of intense absorption, compositions with a reagent concentration of up to 200 kg/m^3 are used in combination with other components to eliminate absorption of various volume.

Packaging

Poroelastic graphite HimLube RG is delivered in polyethylene bags of 25 kg.

BIOCIDES

BIOCIDOL. MULTI-FUNCTIONAL BACTERICIDE

No VOCC
No QAC

Technical Specification
(TU) 2458-008-14023401-2012

Description

Biocidol is a broad-spectrum liquid biocide.

Physical and chemical properties

Property	Standard
Appearance	Liquid of the colorless state to light yellow color, without visible mechanical impurities, having characteristic smell.
Density at 20 °C, gr/cm^3	1.0 – 1.1
pH value of 1% water solution	4.0 – 11.0

Purpose

Biocidol is designed to prevent bacterial decomposition of organic components of drilling muds, such as polysaccharides. Biocidol does not have any negative effect on characteristics of drilling mud.

Recommendations for use

Biocidol can be used in the drilling process during both primary and periodic treatment. Working concentrations vary within 0.30-0.50 kg/m^3.

Packaging

Biocidol is delivered in 30 kg plastic containers.

DEFOAMERS

GASPEN-SILICONE. DEFOAMER FOR DRILLING MUD

No VOCC
No QAC

Technical Specification
(TU) 2458-039-14023401-2012

Description

Gaspen-Silicone is defoamer based on polymethylsiloxane.

Physical and chemical properties

Property	Standard
Appearance	Liquid of white to light grey color *
Effective defoaming, %, min	70

* *Stratification, which is eliminated by mixing the product, is allowed. The consumer properties of the product do not change.*

Purpose

Gaspen-Silicone is used in the oil and gas industry in the construction and repair of wells in order to prevent foaming in various water-based drilling fluids. The best effect of defoaming is achieved when using a defoamer in clay-free, biopolymer inhibiting systems of drilling fluids and drilling fluids with high mineralization.
The product has the following advantages:
- it is more effective at doses much lower than its organic analogs on the basis of polyatomic alcohols;
- it is more stable in broad range of temperatures;
- it is chemically inert.

Recommendations for use

Gaspen-Silicone is dosed in the concentration of 0.005 to 0.2%. Preliminary tests are recommended to select the optimal concentration.

Packaging

Gaspen-Silicone defoamer for drilling mud is delivered in 20 kg plastic containers, in 55 kg plastic barrels.

PFD-20. PROCESS FLUIDS DEFOAMER

No VOCC No QAC

Technical Specification
(TU) 2458-120-14023401-2015

Description

PFD-20 defoamer is a composition on the basis of fatty alcohols, glycols and ethers.

Physical and chemical properties

Property	Standard
Appearance	Liquid of yellow to dark brown color
Characteristic of effective defoaming, %, min	65
Freezing point*, °C, max	-15

**Parameters shall be measured on the Customer's demand*

Purpose

PFD-20 defoamer is used in the oil and gas industry in the processes of well construction and workover for process fluids defoaming.
PFD-20 performs in the clay, polymer-clay, inhibiting drilling muds as additive to process fluids of the perforation, well killing, well conservation, well casing jobs. It is compatible with all reagents used for chemical treatment of drilling muds. It has no negative effect on rheological and filtration properties of mud solution.

Recommendations for use

PFD-20 defoamer is dosed into drilling mud to prevent or eliminate foaming processes, in the concentration of 0.005% to 0.4% (of 0.05 kg/m3 to 4 kg/m^3). In order to select the optimal concentration, it is recommended to contact Himprom representatives).

Packaging

PFD-20 defoamer is delivered in metal barrels of 200 liter.

OIL IN WATER EMULSIFIERS

NEODIRECT-EMUL. OIL IN WATER EMULSIFIER

No VOCC No QAC

Technical Specification

(TU) 20.59.59-204-14023401-2018

Description

Neodirect-emul direct emulsifier is a composition based on polyalkylene glycols (block copolymers of ethylene and propylene oxides) and polyglycerides of fatty acids.

Physical and chemical properties

Property	Standard	
	Grade S	Grade R
Appearance	Viscous liquid of light yellow to brown color	
pH value, units of pH, max	12	
Freezing point, °C, max	+10	n/a

Purpose

Neodirect-emul is used in oil and gas industry in order to create stable direct emulsions in solutions with different hydrocarbon phase content and different mineralization. The surfactant composition is an effective stabilizer of microemulsions based on hydrocarbon oils of various natures.

Advantages

Usage of direct emulsion as a drilling fluid based on Neodirect-emul allows:

- to prevent dispersion of clay rocks and improve well cleaning from drilled rock, due to optimal rheological and structural-mechanical parameters of the drilling fluid;
- to increase stability of argillite-clay rocks and reduce the risk of cavings in the process of deepening the well, including during long-term downtime;
- reduce the filtration losses, increase the stability of the drilling fluid over time;
- increase the lubricating properties of the drilling fluid.

Recommendations for use

Neodirect-emul grade S emulsifier is recommended to be used for the creation of fresh drilling fluids with a reduced specific gravity when drilling under ALRP conditions, while Neodirect-emul grade R is recommended for the preparation of highly inhibitive fluids based on binary systems, silicate and/or potassium formate brine as a dispersion medium.

However, the choice of a specific grade in each case requires an assessment of the conditions: grade S can also be effective for obtaining a mineralized weighted fluid, and grade R for obtaining fresh-water fluid, depending on the composition, the hydrocarbon base used, the mineralization of the medium, etc. For a number of compositions, emulsifiers can be used in conjunction with the Neoinvert-emul Stab co-emulsifier, which is able to increase the stability of direct emulsions in the widest range of mineralization of the aqueous phase (up to saturation) and elevated temperatures.

The injection of the emulsifier into the drilling fluid is recommended to be carried out as part of the hydrocarbon phase, after preliminary dissolution in it. The optimal concentration is selected based on the results of preliminary tests, generally it is 0.5-1.5%.

Packaging

The form of delivery of Neodirect-emul is determined by the agreement with the customer.

HIMOIL. COMPOUND FOR DRILLING EMULSION PREPARATION

No VOCC No QAC

Technical Specification
(TU) 20.59.59-227-14023401-2019

Description

HimOil compound for drilling emulsion preparation represents a composition based on methyl ester of vegetable oil fatty acid.

Physical and chemical properties

Property	Standard
Appearance	Transparent low viscosity liquid without sedimentation
Open-cup flash-point, °C, min	150
Freezing point,°C, max	-30
Density at 20 °C, g/cm^3, max	0.90
Kinematic viscosity at 40 °C, mm^2/s, max	6.0

Purpose

HimOil compound for drilling emulsion preparation is intended to be used in oil and gas industry as a biodegradable base for the preparation of oil-based drilling mud (oil-in-water and invert emulsions) needed for completion of productive formations. In its class of products, HimOil compound for drilling emulsion preparation is distinguished by its low solidification temperature, low kinematic viscosity, and high flash point. In terms of health effect, HimOil compound for drilling emulsion preparation is classified as hazard class 4 material and represents a low-hazard substance.
In addition, the product does not have any toxic effect on the body.

Recommendations for use

HimOil compound for drilling emulsion preparation is recommended for use at fields where strict requirements are applied to environmental safety.
The final recipe depends on particular customer requirements.

Packaging

HimOil compound for drilling emulsion preparation is delivered in 200 kg steel or polypropylene drums.

NEODIRECT-EMUL STAB. CO-EMULSIFIER

No VOCC
No QAC

Technical Specification
(TU) 20.59.59-374-14023401-2022

Description

Neodirect-emul Stab co-emulsifier is an organo-mineral mixture of surfactants.

Physical and chemical properties

Property	Standard
Appearance	Powder of white to grey color
pH value of 5% aqueous solution, units of pH, min	9.0

Purpose

Neodirect-emul Stab is used in oil and gas industry as an additional emulsifier in the production of mineralized and unsaturated direct emulsion systems used for flushing oil and gas wells. Surfactants contained in the product are able to effectively destroy the micelles of the main emulsifier and increase its hydrophilicity. This leads to an increase in the concentration of adsorption-active molecules at the interface and additional stabilization of the emulsion.

Advantages

The use of a direct emulsion as a drilling mud with the addition of Neodirect-emul Stab allows:
- to prevent dispersion of clay rocks and improve well cleaning from drilled rock, due to optimal rheological and structural-mechanical parameters of the drilling fluid;
- to increase stability of argillite-clay rocks and reduce the risk of cavings in the process of deepening the well, including during long-term downtime;
- reduce the filtration losses, increase the stability of the drilling fluid over time;
- increase the lubricating properties of the drilling fluid.

Recommendations for use

It is recommended to increase the concentration of the co-emulsifier with an increase in the degree of mineralization of the aqueous phase. When the concentration of potassium chloride in the aqueous phase of the emulsion is equal to 3-5% w/w, the optimal concentration of Neodirect-emul Stab is 0.5-1.5% w/w. In case of incerasing the concentration of potassium chloride to 24% w/w (saturated solution), it is recommended to increase the concentration of Neodirect-emul Stab to 7-10% w/w.
The maximum effective concentration is estimated based on the results of preliminary tests, taking into account the actual conditions: the composition, the oil phase used, etc.

Packaging

The delivery form of Neodirect-emul Stab is chosen by agreement with the customer.

COLMATANTS AND HEAVIERS

CARBOKOL. SELECTIVE CARBONATE COLMATANT

No VOCC No QAC

Technical Specification
(TU) 20.59.59-003-14023401-2021

Description

Carbokol is a ground seashell based acid-soluble colmatant.

Physical and chemical properties

Property		Standard	
		Grade A	Grade B
Appearance		Ground or solid molluscan shells	
Moisture mass part, %, max		10.0	
Mass part of the fraction, %, max	over 2 mm	10	-
	over 5 mm	-	10

Purpose

Carbokol is used as a weighting medium for drilling muds and as colmatant of pore throats to minimize the penetration of drilling mud filtrate into permeable intervals. Its acid solubility makes it possible to use Carbokol while penetrating reserivoirs to preserve their permeability status.

Recommendations for use

Required concentration of the colmatant Carbokol and its fractional composition are selected judging by the reservoir characteristics of a pay zone. Carbokol is compatible with all types of the water- and oil-based drilling muds. It has no effect on rheological properties of drilling mud solution.

Packaging

The Carbokol colmatant is delivered in 25 kg bags.

HIMOIL CORE. OIL SOLUBLE COLMATANT

No VOCC No QAC

Technical Specification
(TU) 20.59.59-277-14023401-2020

Description

HimOil Core is a hydrophobic colmatant based on hydrocarbons.

Physical and chemical properties

Property	Standard
Appearance	Powder of white to light yellow color
Bulk density, g/cm^3	0.4-0.6

Purpose

HimOil Core is used as calcium carbonate alternative colmatant to drill horizontal wellbore abnormal-low formation pressure (ALFP).

Advantages

Thermoplastic behavior of HimOil Core performs in efficient colmatation of mudstone and highly permeable sand formations. HimOil Core can be used in penetration fluids. Filter cake breakers are not required to bottom hole treating – filter cake dissolves under hydrocarbon formation fluid.
HimOil Core working concentration for wellbore stability is set without drilling mud weight increase, resulting in formation pressure and solution dilution reduction.

Recommendations for use

HimOil Core is not complied with hydrocarbon based lubricants.
The operating temperature must be under 110 °C.
The working concentration of the agent is 3 to 5% based on the mud volume.

Packaging

HimOil Core packaging is determined according to the customer specification.

BREAKERS

HIMBREAK S. FILTER CAKE BREAKER

No VOCC No QAC

Technical Specification

(TU) 20.59.59-160-14023401-2017

Description

Himbreak S is a polysaccharide enzyme, specially developed to remove starch from filter cake formed on borehole walls. It has high thermostability and capable of catalizing hydrolysis of *a*-1.4-glycoside relations.

Physical and chemical properties

Property	Standard		
	AL	AT	AP
Appearance	Suspension of beige to brown color	Suspension of brown to dark-brown color	Consistent powder of light beige to light brown color
Density, g/cm^3	1.1-1.2	1.15-1.25	-
Sieve residue 250 µm	-	-	20.0

Purpose

Himbreak S is used in oil and gas industry as a breaker of the filter cake formed because of the use of water-based fluids used for reservoir penetration. The product selectively destroys polysaccharides, as one of the components of filter cake, it is synergetic with other enzymes. It is applied depending on borehole conditions, can be used under temperatures above 121 °C, is compatible with brines of chorides/bromides of univalent salts.
Himbreak S does not react with hydrocarbons. It causes no reaction with coil tubing, except for elevated concentraction of iron, which would result in sedimentation.

Recommendations for use

Recommended concentration of Himbreak S in brines is 10 l/m^3.

Packaging

Himbreak S AL and Himbreak S AT filter cake breakers are delivered in 200 liters barrels.
Himbreak S AP filter cake breaker is delivered in 25 kg bags.

HIMBREAK H. FILTER CAKE BREAKER

No VOCC
No QAC

Technical Specification
(TU) 20.59.59-161-14023401-2022

Description

HimBreak H is a chelating agent with a low pH value, it dissolves the components of calcium carbonate in filter cakes formed because of water-based fluids used for reservoir penetration.

Physical and chemical properties

Property	Standard
Appearance	Christal powder of white color
Bulk density, kg/m^3	800-1,000

Purpose

HimBreak H is used in oil and gas industry as filter cake breaker, it reacts only with calcium carbonate. The reagent has moderate pH value and does not cause corrosion, in difference from acids and oxidizers. HimBreak H forms no emulsions when interacting with hydrocarbons in the reservoir. It is used, depending on borehole conditions, and can be applied under temperatures of higher than 135°C, it is compatible with brines of chlorides / bromides of univalent salts.

Recommendations for use

Recommended concentration of HimBreak H is from 3 to 5%. It is recommended to contact Himprom representatives to choose the proper concentration.

Packaging

Himbreak H filter cake breaker is delivered in 25 kg bags.

HIMBREAK AB. BREAKER

No VOCC No QAC

Technical Specification
(TU) 20.59.59-236-14023401-2019

Description

Himbreak AB is an aqueous solution of inorganic salts and acyclic polyamines of various origins.

Physical and chemical properties

Property	Standard
Appearance	Transparent liquid from colorless to light yellow color
Density, gr/cm^3	1.15-1.25
pH value, units of pH, min	13.0

Purpose

Himbreak AB breaker is designed for use in the oil and gas industry to dissolve deposits of barium sulfate (barite) formed in the filtration cake during drilling. When cleaning the formation pay zone, the product converts barium sulfate $BaSO_4$ into a soluble state, the size of barite particles reduces and they are removed from the pore space. As a result of the breaker operation the permeability of the reservoir increases and the flow of fluid is stimulated.

Recommendations for use

Himbreak AB breaker must be used in the form of an aqueous solution prepared using fresh water purified from calcium and magnesium ions. The concentration of the reagent is selected by model tests in accordance with the type and composition of the drilling mud used. The product is recommended to be used at reservoir temperatures from 90 °C. In order to increase the effectiveness of Himbreak AB, it is necessary to initially treat the formation pay zone with the Himbreak H for the primary removal of calcium carbonate $CaCO_3$ scale.

Packaging

The form of delivery of Himbreak AB is selected by agreement with the customer.

FOAMING AGENTS

HIMFOAM. FOAMING AGENT

No VOCC No QAC

Description

HimFoam foaming agent is a surfactant in dry form designed to create aerated drilling fluids and stable foams.

Physical and chemical properties

Property	Standard
Appearance	Powder of white or light-yellow color
Bulk density, gr/cm^3, min	0.35
pH value of 1% aqueous solution, units of pH	9.0-12.0
Moisture content, %, max	5.0

Purpose

Himfoam is used in oil and gas industry as an additive to drilling fluids in order to create a stable foam. The product can be used in the drilling process of weakly consolidated rocks in the ALFP zones. Himfoam foaming agent provides effective overcoming of thief zones when working at remote and hard-to-reach facilities where it is difficult to provide process water. Additionally, the product has the following advantages:

- improves well cleaning;
- increases the penetration rate;
- the formed foam retains long-term stability over time;
- the dry form of the product facilitates the transportation of the foaming agent.

Recommendations for use

Depending on the concentration of HimFoam and the formula of the solution, it is possible to obtain compositions for mist drilling, drilling using foam drilling fluid or rigid foam. Foam stabilizers can also be used to form dense stable foams, such as the modified xanthan biopolymer GLAMIN. In order to choose the optimal solution, contact a representative of the Himprom company.

Packaging

The form of delivery of HimFoam foaming agent is selected by agreement with the customer.

HIMFOAM LIQUID. FOAMING AGENT

No VOCC No QAC

Description

HimFoam Liquid foaming agent is a concentrated complex of specially selected surfactants designed to create aerated drilling fluids and stable foams.

Physical and chemical properties

Property	Standard
Appearance	Liquid of colorless to light-yellow color
pH value of 1% aqueous solution, units of pH	5.0-7.0

Purpose

HimFoam Liquid is used in oil and gas industry as an additive to drilling fluids in order to create a stable foam. The product can be used in the drilling process of weakly consolidated rocks in the ALFP zones. HimFoam Liquid foaming agent provides effective overcoming of thief zones when working at remote and hard-to-reach facilities where it is difficult to provide process water.

The product has the following advantages:

- increases the efficiency of well cleaning;
- increases the rate of penetration;
- facilitates the formation of foam that retains stabile for a long time;
- the product is in liquid form, which simplifies the process of preparing the working solution.

Recommendations for use

Depending on the concentration of HimFoam Liquid and the formula of the solution, it is possible to obtain compositions for mist drilling, drilling using foam drilling fluid or rigid foam. Foam stabilizers can also be used to form dense stable foams, such as the modified xanthan biopolymer GLAMIN. In order to choose the optimal solution, contact a representative of the Himprom company.

Packaging

The form of delivery of HimFoam Liquid foaming agent is selected by agreement with the customer.

SPECIAL ADDITIVES

HIMGLOW WBM. WATER-BASED MUD TRACER

No VOCC   No QAC

Technical Specification
(TU) 20.59.59-344-14023401-2022

Description

HimGlow WBM is a tracer additive for water-based drilling mud, which fluoresces under UV light.

Physical and chemical properties

Property	Standard
Appearance	Powder of yellowy-brown to maroon color
Moisture content, %, max	10.0

Purpose

HimGlow WBM additive is as a tracer analysis indicating agent for water-based mud. The additive is mostly used for filtrate invasion into the formation evaluation.
HimGlow WBM tracer:
- performs easily recognizable trace under low concentrations;
- disperses easily in alkaline medium of water-based drilling mud;
- does not affect drilling mud rheology and viscosity;
- is not adsorbed on clays;
- easy and safe to handle.

Recommendations for use

HimGlow WBM is added to drilling mud as a water suspension in recommended concentration 7-12 ml/l.

Packaging

HimGlow WBM tracer is delivered in 25 kg bags.

HIMSTIM S. MULTIFUNCTIONAL AGENT

No VOCC No QAC

Technical Specification

(TU) 20.59.59-305-14023401-2021

Description

Multifunctional Agent HimStim S is glycol ether.

Physical and chemical properties

Property	Standard
Appearance	Transparent colorless liquid
Density at 20 °C, g/cm^3	0.85-0.95

Purpose

Wide application range makes the multifunctional agent HimStim S be used for different purposes in the oil and gas extraction.
In production stimulation operations HimStim S is used as a surface tension reducer and water-wetting agent. The agent may be added to acid compositions and hydraulic fracturing liquids.
Acting as a paraffin solvent and surfactant co-solvent multifunctional agent HimStim S reduces and stabilizes viscosity of the flow, so it can improve total flowback efficiency.
Besides, HimStim S keeps corrosion inhibitors in solution, so it can protect the tubular and equipment.

Recommendations for use

The dosage of the multifunctional agent HimStim S depends on the purpose and is selected individually according to the Customer's requirements.

Packaging

Multifunctional agent HimStim S is delivered in PE barrels of 200 liters or in bulk containers, volume of 1,000 liters.

WELLFIX UNITY. SUSPENDING AGENT

Technical Specification

(TU) 20.59.59-372-14023401-2022

No VOCC No QAC

Description

WellFix Unity is a modified polymer fiber developed for cleaning vertical and horizontal wells.

Physical and chemical properties

Property	Standard		
	WellFix Unity A	WellFix Unity B	WellFix Unity C
Appearance	Fibers from white to grey color		
Moisture content, %, max	1.5		
Fiber size, mm	2.7-3.3	5.4-6.6	10.8-13.2

Purpose

WellFix Unity is designed to be used as a suspending agent to increase the bearing capacity of drilling fluids. The product has the following features:

- the modified fiber surface is easily dispersed in the drilling fluid without forming lumps, unlike traditional fibers, and then uniformly suspended in the drilling fluid;
- facilitates more efficient removal of sludge and solid particles without significantly affecting the rheological properties of the drilling fluid;
- the optimal fiber length allows the reagent to be pumped through technological equipment;
- is an inert material and is compatible with most components of drilling fluids.

Recommendations for use

When being used as a reagent to increase the removal of sludge in drilling fluids, the initial concentration is 1-1.5 kg/m^3. In order to choose the optimal concentration, contact a representative of the Himprom company.

Packaging

WellFix Unity suspending agent is delivered in bags of 25 kg.

HIMPROM

Himprom Limited Liability Company

www.himprom-group.ru/en/

+7 (342) 225 02 06

info@himprom-group.ru