



INORGANIC CHEMISTRY PRODUCTS



 HaloPolymer



**INORGANIC
CHEMISTRY PRODUCTS**



Contents

1. Sodium hypochlorite commercial	2
2. Kalium hydroxide	4
3. Calcium chloride commercial	6
3.1 Calcium chloride commercial granulous (calcium bichloride)	8
3.2 Calcium chloride commercial powdered	9
3.3 Calcium chloride commercial fluidal	9
4. Natron pyretic cleared	10
5. Acid fluoride	12
6. Acid hydrofluosilicic commercial	14
7. Acid chlorhydric from organochloride production blowgases	16
8. Acid chlorhydric inhibited	18
9. Chlorhydric and fluohydric acids mixture	20
10. Chlorhydric and fluohydric acids mixture, grade A	22
11. Chlorhydric and fluohydric acids inhibited mixture for well treatment	24



**SODIUM
HYPOCHLORITE
COMMERCIAL**

Technical requirements and specifications:

Indexes	Norm	
	Grade A	Grade B
Available chlorine weight percentage, g/dm ³ , not less	70	50
Alkaliweight percentage in equivalent NaOH, g/dm ³ , within	20–50	20–90
Hydrargyrum weight percentage, g/dm ³ , no more	8•10 ⁻⁵	Notrated
Note – it is acceptable chlorine loss after 10 storage days no more than 30% relatively to the original content and colour change to reddish-brown.		

Appearance: aqua from greenish-yellow to brown.

Application: for disinfection of economic-household and industrial wastewater, disinfection of contaminated and polluted land, using the pulp and paper industry.

Transportation: according to shipping rules

Packaging: in special rubberized or coated with corrosion-resistant materials tanks in unheated, ventilated premises, saved from sunshine.



**KALIUM
HYDROXIDE**

A large, stylized white letter 'P' is set against a blue background that forms a horizontal bar. The 'P' is partially cut off by the right edge of the bar.

Technical Specifications 2132-035-13693708-2006

Physical and chemical features:

Index name	Value for the grade		
	first	second	third
Appearance	Colourless or painted aqua. Is acceptable crystallized precipitation		
Caustic alkali weight percentage(KOH + NaOH) in equivalent KOH, %, not less	46	42	25
Potassium carbonate weight percentage (K_2CO_3), %, no more	0,2	0,4	0,4
Potash chloride weight percentage (KCl), %, no more	0,01	0,01	0,02
Sulphates weight percentage (SO_4^{2-}), %, no more	0,002	0,005	0,005
Ferrum weight percentage in equivalent Fe_2O_3 , %, no more	0,001	0,002	0,004
Sodium weight percentage in equivalent NaOH, %, no more	2	5	5
Potash chlorate weight percentage ($KClO_3$), %, no more	0,001	0,002	0,002
Silicic acid weight percentage in equivalent SiO_2 , %, no more	0,003	0,005	0,005
Hydrargyrum weight percentage (Hg), %, no more	0,00007	0,0001	0,0001
Calcium weight percentage (Ca), %, no more	0,0014	0,0014	0,0014
Aluminium weight percentage in equivalent Al_2O_3 , %, no more	0,002	0,003	0,003
Heavy metals weight percentage in equivalent Pb, %, no more	0,002	0,002	0,002
Magnesium weight percentage(Mg), %, no more	0,0001	0,0002	0,0002
Notes	1 Mass fractions values of indices 4 - 6, 8 – 14 are described in equivalent 100 % product. 2 Potassium hydroxide, exported, must meet the requirements of the contract.		

Kalium hydroxide, kalium hydroxyde, kalium pyretic

Get by potash chloride solution electrolysis using a mercury cathode. Used for the manufacture of fertilizers, collastics, battery electrolytes, reagents, xanthogenates, salts, in medical, automotive, glass industries and in other branches of national economy.

Chemical formula: KOH

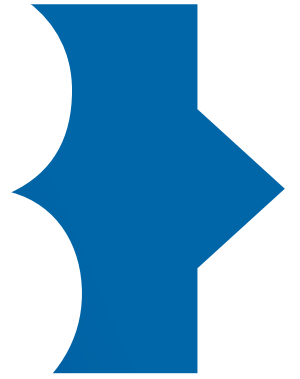
A high-risk product for exposure to human. Causes bad skin burns and eye damage. Hazard Class 2. Non flammable and not explosive.

Transportation: By rail and highway transport. By rail potassium hydroxide of the first and second grade is transported in bulk in shipper (consignee) rail tank car or leased tank cars. Potassium hydroxide of the third grade don't carry by rail.

Storage: Warranty period of storage - 1 year from the date of manufacture.



**CALCIUM
CHLORIDE
COMMERCIAL**



According to the physicochemical parameters calcium chloride shall conform to the norms specified in the table

Index name	Calcinated		Fluidal
	Superior quality	First quality	
Appearance	Powder or granules white		The solution yellowish-gray or greenish colour or translucent with light dregs
Calcium chloride weight percentage, %, not less	96,5	90	35
Magnesium weight percentage in equivalent $MgCl_2$, %, no more	0,5	0,5	Not rated
Other chlorides weight percentage, including $MgCl_2$, in equivalent NaCl, %, no more	1,5	Not rated	3
Ferrum weight percentage, (Fe), %, no more	0,004	The same	Not rated
insoluble residue weight percentage, %, no more	0,1	0,5	0,15
Sulphates weight percentage in equivalent sulphate-ion, %, no more	0,1	Not rated	Not rated

Notes: It is allowed in the fluidal calcium chloride, produced throughout the year on solution non-evaporation method, the calcium chloride weight percentage not less 32%, and in product, produced in other ways during the period from October to April (inclusive), the calcium chloride weight percentage - not less than 30%.

Used in chemical, forest and wood, oil, petroleum and petrochemical industries, refrigerating engineering, construction and manufacture of building materials, in nonferrous-metals industry, by highways construction and operation, as well as a drying agent and for other purposes.

3.1 Calcium chloride commercial granulous (calcium dichloride)

1st grade

Inorganic chemistry product.

There are white granules. Moderately hazardous product for human exposure. Exasperates skin and mucous membranes. Hazard Class - 3. Non flammable, air-and-coal mixtures are fire and explosion proof.

Tare: PBB (plastic big bag) at 750kg, shipping in open cars, carload rate – 56,25 tons (75 PBB), by automotive transport to pick-up (overload). Bags at 25kg are packed at 1ton (40 bags) on a pallet. Shipping in box cars, car standard - 40 tons (40 pallets) or 50tons (50 pallets), by automotive transport to pick-up.

3.2 Calcium chloride commercial powdered

1st grade

Inorganic chemistry product.

There is white powder. Moderately hazardous product for human exposure. Exasperates skin and mucous membranes. Hazard Class - 3. Non flammable, air-and-coal mixtures are fire and explosion proof.

Tare: PBB at 600 kg, shipping in open cars, carload rate – 45 tons (75 PBB), by automotive transport to pick-up (overload).

3.3 Calcium chloride commercial fluidal

Inorganic chemistry product. There is 32% calcium chloride aqueous solution.

Moderately hazardous product for human exposure. Exasperates skin and mucous membranes. Hazard Class - 3. Non flammable, air-and-coal mixtures are fire and explosion proof.

Shipping in railway tank cars, carload rate – 60 tons.



NATRON PYRETIC CLEARED



Sodium hydroxide, sodium hydroxide (aqueous solution), hydrate of sodium.

Inorganic chemistry product.

Get by sodium chloride solution electrolysis using a mercury cathode, is used in the manufacture of man-made yarns and fibers, pure metals, pulp and paper industry, medical industry, for mineral fertilizers production.

Formula NaOH

High-risk product for human exposure. Takes an intense exasperating and amyctic effect to the skin and mucous membranes. Detrimental for the environment. Fire and explosion proof. Hazard Class 2.

Shipped as a solution (colourless transparent fluidal), in railway tank cars of 60 tons (28-30 tons in equivalent 100% base material).

According to the physicochemical parameters natron pyretic shall conform to the listed below norms.

Index name	Value for the grade	
	A	Б
Appearance	Colourless transparent fluidal	
Natron pyretic weight percentage (NaOH), %, not less	46	45
Soda weight percentage (Na ₂ CO ₃), %, no more	0,15	0,20
Sodium chloride weight percentage (NaCl), %, no more	0,007	0,01
Sulphates weight percentage (SO ₄), %, no more	0,002	0,005
Silicic acid weight percentage (SiO ₂), %, no more	0,002	0,008
Ferrum weight percentage (Fe ₂ O ₃), %, no more	0,0007	0,001
Hydrargyrum weight percentage (Hg), %, no more	0,00007	0,00009
Aluminum weight percentage (Al ₂ O ₃), %, no more	0,002	0,003
Calcium weight percentage (Ca), %, no more	0,0014	0,0014
Barium weight percentage (Ba), %, no more	0,0001	0,0001
Magnesium weight percentage (Mg), %, no more	0,0001	0,0001
Manganese weight percentage (Mn), %, no more	0,00001	0,00001
Cuprum weight percentage (Cu), %, no more	0,00001	0,00001
Nickel weight percentage (Ni), %, no more	0,00001	0,00004
Plumbum weight percentage (Pb), %, no more	0,00002	0,00002
Sodium chlorate weight percentage (NaClO ₃), %, no more	0,0001	0,005
Coefficient of transparency, %, not less	93	90

Notes: 1. Weight percentage norms of impurities are given in equivalent 100% product.

2. For the production of high purity ion-exchange resins sodium chloride weight percentage in cleared pyretic natron shall not exceed 0,005%.

3. For the chemical fibers and non-food cellulose film production potassium weight percentage is not more than 0,03% in both grades.



ACID FLUORIDE

Technical Specifications 5744-132-05807960-98

Indexes	Value
Aggregative state, colour, smell, solidness	Free-flowing material, grey, without smell, 1,4÷1,7 t/m ³ (powder density)
Fractional makeup (middle optional data for 2007, on additory request can be refined)	Particle, mm %
	> 40 12,8
	40–20 11,4
	20–10 3,0
	10–5,0 5,0
	5,0–2,0 16,5
	2,0–1,0 28,7
	< 1,0 22,6
	Note – milling don't produce.
Chemical parameters(norm on Technical Specifications 5744-132-05807960-98 / average for 5 months. 2010)	Sulfuric anhydride, not less
	40 % / 53,54 %
	in equivalent calcium sulphate
	not rated / 91,02 %
	Calcium oxide, no more
	10 % / 3,32 %
	Calcium fluoride
	not rated / 1,04 %
	Sulphuric acid
	not rated / 0,02 %
	Humidity, light.
	not rated / 0,22÷0,4 %*
	pH
	not rated / 9÷12
	*) proportionated samples one-time analysis

Acid fluoride is a product «dry» of acidic dump neutralization - waste of hydrogen fluoride, anhydrous calciferous dust.

Based on the actual date, the product hydration is slow and does not lead to seizure under the conditions of transportation and storage.



**ACID
HYDROFLUOSILICIC
COMMERCIAL**



Technical Specifications 2122-150-05807960-2004

Technical requirements and specifications:

Indexes	Norm TS 2122-131-05807960-97
Acid hydrofluosilicic weight percentage (H_2SiF), %, not less	20
Free hydrofluoric acid weight percentage (HF), %, no more	5
Phosphoric anhydride weight percentage (P_2O_5), %	Not rated
Sulphuric acid weight percentage (H_2SO_4), %, no more	1
Silicic acid anhydride weight percentage (SiO_2), %, no more	2,4

Transportation: by rail in accordance with the transportation rules, effective for this transport type.

Minimum quantity shipped: Tank car 65 tons.



**ACID CHLORHYDRIC
FROM ORGANOCHLORIDE
PRODUCTION
BLOWGASES**

Technical requirements and characteristics:

Indexes	Norm
Weight percentage HCl, %, not less	27,5
Free chlorine weight percentage (Cl ₂), %, no more	0,02
Ferrum weight percentage (Fe), %, no more	0,02
Organically bound chlorine weight percentage, %, no more	0,08

Chemical formula: HCl

Application: in the chemical industry - for the brine acidification in the hydrate of sodium production, for the regenerated hydrogen chloride getting, for the metal chlorides getting. In iron and nonferrous-metals industries - for removing oxide film from the metal surface, in the process of metals from ores leaching.

In other industries – for boilers cleaning and makeup demineralizer related to drinking water supply.

Transportation: by rail (rubberized tank cars) in accordance with the working transportation rules.

Minimum quantity shipped: Tank car 65 tons.

Storage: pressuretight reservoirs of materials resistant to chlorhydric acid.



**ACID
CHLORHYDRIC
INHIBITED**



Technical requirements and characteristics:

Indexes	Value	Value
Weight percentage HCl, %, within	20–23	22–25
Ferrum weight percentage (Fe), %, no more	0,03	0,03
The dissolution rate of steel St 3 kp or 8 kp at 20°C, g/m ² h, no more	0,20	0,20
Weight percentage HF, %, no more	0,5	–

Chemical formula: HCl

Appearance and properties: aqua from light yellow to brown. Toxical, fire and explosion proof.

Application: for etching of iron and some base metals and products thereof, for acidizing oil wells, for oilers acid treatment, for boilers and apparatus of different chemistry sediments chemical cleaning and for other purposes.

Transportation: by rail (rubberized tank cars) in accordance with the working transportation rules.

Minimum quantity shipped: Tank car 65 tons.

Storage: in pressure tight reservoirs of materials resistant to chlorhydric acid.



CHLORHYDRIC AND FLUOHYDRIC ACIDS MIXTURE



Technical Specifications 6-02-14-13-91rev.1

Technical requirements and characteristics:

Indexes	Norm
Hydrogen chloride weight percentage, %, within	22–30
Hydrogen fluoride weight percentage, %, within	4–6

Appearance and properties: aqua from colourless to yellow.

Application: in the metallurgical industry (for example, for titanium products etching).

Transportation: by rail (rubberized tank cars) in accordance with the transportation rules, effective for this transport type.

Minimum quantity shipped: Tank car 65 tons.

Storage: in pressure-tight vessels with persistent corrosion protection.



**CHLORHYDRIC
AND FLUOHYDRIC
ACIDS MIXTURE,
GRADE A**



Technical requirements and characteristics:

Indexes	Norm
Hydrogen fluoride weight percentage, %, within	32-42
Hydrogen chloride weight percentage, %, no more	15
Ferrum weight percentage, %, no more	0,01
Organic matter content, qualitatively	Failure
Phosphorus weight percentage, %, no more	0,01

Application: in metal manufacture, in glass manufacturing (for etching).

Transportation: by rail (rubberized tank cars) in accordance with the working transportation rules.

Minimum quantity shipped: Tank car 65 tons.

Storage: in pressuretight vessels with persistent corrosion protection.



**CHLORHYDRIC
AND FLUOHYDRIC ACIDS
INHIBITED MIXTURE
FOR WELL TREATMENT**



Technical Specifications 6-01-14-78-91 rev.1-3

Technical requirements and characteristics:

Indexes	Norm
Hydrogen chloride weight percentage, %, within	20–25
Hydrogen fluoride weight percentage, %, within	3–5
The dissolution rate of steel St 3 or steel o8KP shall not exceed at 20C, g/m ² h	0,35

Appearance and properties: yellow aqua.

Application: for well treatment.

Transportation: by rail (rubberized tank cars) in accordance with the transportation rules, effective for this transport type.

Minimum quantity shipped: Tank car 65 tons.





125284, Moscow, Leningradskiy prospect,
the business-center "Monarch", 31A, building 1, 30th floor
Tel./fax: +7 (495) 725-44-00
www.halopolymer.com
e-mail: info@halopolymer.com