

PRODUCTS PRODUCED BY POLYMIR

Product name	Grade, type	Technical and normative legal acts (TNLA) for the products
Low density polyethylene (LDPE) and compositions on its base		
LDPE	grades 10204-003, 10803-020, 11503-070, 15303-003, 15803-020, 12003-200, 17703-010	GOST 16337
LDPE	grades 10303-003, 10903-020, 12203-250, 12903-003	TU BY 300042199.135
Cable LDPE compositions	grades 102-02K, 107-02K, 102-10K, 107-10K, 107-61K	GOST 16336
Light stabilized LDPE composition with increased resistance to cracking	grade 102-10KU	TU BY 300042199.057
Cable LDPE composition grade 129-10K	grade 129-10K	TU BY 300042199.158
Silane-crosslinked LDPE compositions for insulation and a composition additive for them	grades 175-299, 177-299, 177-324	TU BY 300041455.054
LDPE compositions for high-speed extrusion	grade 158-281M	TU RB 300041455.070
LDPE compositions for film making	grade 175-353, 177-353	TU RB 300041455.034
Sliding LDPE compositions	grades 162-132, 175-132, 177-132	TU RB 300041455.038
Low-molecular weight LDPE	-	TU RB 300041455.031
Vilaterm LDPE	grades A, B	TU BY 300041455.018
Acrylic fibres		
Acrylic fibre Nitron-D	grades ND-1, ND-4, ND-5, ND-6	TU BY 300041455.015
Mixed acrylic fibre	grades A, B	TU RB 300041455.013
Technical acrylic fibre Nitron-D	types Zh, M	TU BY 300042199.041
Organic synthesis products		
Technical acrylonitrile	-	GOST 11097, TU BY 300042199.100
Technical acetonitrile	Grades A, B	TU RB 300041455.010
Acetone cyanohydrin	-	GOST 13198 TU BY 300042199.126
Methyl acrylate	-	Process regulation
Commodities		
Polyethylene film	grades N, ST, V	GOST 10354
Shrink wrap polyethylene film	grades U, O, T, P	GOST 25951
Greenhouse polyethylene film	grades SS-3T, TSP, TSS-5, GS	TU BY 300041455.036
Vilaterm polyethylene film	-	TU BY 300041455.029
Household polyethylene bags	types A, B	TU BY 300042199.101
Household polyethylene pipes	-	TU RB 300041455.039
Low-tonnage chemistry		
Polyethylene emulsion Oxalen-30	-	TU RB 300041455.023
Sorbitan S	-	TU RB 300041455.051
Sorbital S-20	-	TU RB 300041455.050
Ammonium sulphate	-	TU RB 300041455.007
Pigment superconcentrates	-	TU BY 300041455.020
Polyethylene wax	PV-200, PV-300, PVO-30	TU RB 300041455.024
Hydrocarbon cuts		
Mixture of technical propane and butane	SPBT grade	STB 2262
Propylene	-	TU BY 300042199.125
Non-hydrated butylene-butadien fraction	grades A, B, V	TU RB 300041455.008
Methylacetylene-allen fraction	grades A, B	TU BY 300042199.043
Hydrostabilized pyrocondensate	-	TU RB 300041455.006
Heavy pyrolysis resins	-	TU RB 300041455.002

LOW DENSITY POLYETHYLENE

(grades 10204-003, 10803-020, 11503-070, 15303-003, 15803-020, 12003-200, 17703-010)

Low density polyethylene (grades 10204-003, 10803-020, 11503-070, 15303-003, 15803-020, 12003-200, 17703-010) is manufactured as per GOST 16337.

Recommended usage:

grade 10204-003 - manufacture of pressure pipes and fittings, including those for cold water household service, manufacture of blown articles, films and film articles of general purpose, also contacting with foodstuff, manufacture of toys;

grade 10803-020 - manufacturing of profile-molded articles, casted and blown articles, films and film articles of general purpose, also contacting with foodstuff (including tight packaging), manufacture of toys, articles certified for packaging and closures of medicines;

grade 11503-070 – for rotational molding of large technical articles, sintering of articles, as a molding compound for filling of electrical parts, lamination of paper, fabric and other articles, coating of articles by spraying, manufacture of casted articles, films and film articles of general purpose, also contacting with foodstuff (including tight packaging), manufacture of toys, articles certified for packaging and closures of medicines;

grade 15803-020 - production of injection and blown articles and films of special and general purpose, shrink wrap films, thin films, also contacting with foodstuff (including tight packaging), manufacture of toys, medical application articles, parts and components of medical equipment, medical devices and tools, manufacture of articles certified for packaging and closures of medicines;

grade 12003-200 - as a molding compound for filling of electrical parts, manufacture of casted articles, coating of articles by spraying, food contact products, manufacture of toys

grade 17703-010 - manufacturing of profile-molded articles, casted and blown articles, shrink wrap and general purpose films and film articles, also contacting with foodstuff (including tight packaging), manufacture of medical application articles, parts and components of medical equipment, medical devices and tools, manufacture of articles certified for packaging and closures of medicines, articles contacting with human tissues, also for internal prostheses.

TECHNICAL CHARACTERISTICS

Parameter	Norm for the grade, highest quality						
	10204-003	10803-020	11503-070	15803-020	12003-200	17703-010	15303-003
Size of pellets in any direction, mm	2-5						
Mass fraction of pellets, %, not more	0.25						
Larger than 5 - 8 mm							
Larger than 1 - 2 mm	0.5						
Density, g/cm ³	0.9230±0.001	0.9185±0.0015	0.9180±0.001	0.9190±0.002	0.9170±0.001	0.9190±0.002	0.9205±0.0015
Melt flow index (nominal value) with tolerance, %, g/10 min	0.3±15	2.0±10	7.0±15	2.0±25	20.0±15	1.0±20	0.3±30
Melt flow index dispersion within lot limits, %, not more	±5	±5	±5	±6	±5	±8	±6
Number of inclusions, pcs, not more	2	2	2	2	2	5	2
Film appearance on process sample	S	V	V	A or V	-	V	A или B
Cracking resistance, hr., not less	500	2	-	-	-	-	500
Tensile yield point, Pa, not less	113·10 ⁵	93·10 ⁵	93·10 ⁵	93·10 ⁵	-	98·10 ⁵	98·10 ⁵
Tensile strength, Pa, not less	147·10 ⁵	122·10 ⁵	98·10 ⁵	113·10 ⁵	-	122·10 ⁵	137·10 ⁵
Relative elongation at rupture, %, not less	600	550	450	600	-	600	600
Extractive substances content, %, not more	1.4	0.9	1.2	0.4	1.2	0.5	0.4
Smell and smack of aqueous extracts, score, not higher	1	1	1	1	-	1	1

LOW DENSITY POLYETHYLENE
(grades 10303-003, 10903-020, 12203-250, 12903-003)

Low density polyethylene (grades 10303-003, 10903-020, 12203-250, 12903-003) is manufactured as per TU BY 300042199.135.

Intended for manufacture:

- household articles, packaging (closures), food contacting products;
- toys;
- medical application articles, packaging (closures) of medicines;
- super concentrates of pigments and other filled compositions used as polymer base.

TECHNICAL CHARACTERISTICS

Parameter	Norm for the grade, highest quality			
	10303-003	10903-020	12203-250	12903-003
Size of pellets in any direction, mm	2-5	2-5	2-8	2-5
Mass fraction of pellets, %, not more:				
Larger than 8 - 10 mm (including the pellets of irregular shape)	-	-	1,0	-
Larger than 5 - 8 mm	0.25	0.25	-	0.25
Larger than 1 - 2 mm	0.5	0.5	0.5	0.5
Mass fraction of substances of irregular shape, %, not more	Not allowed	Not allowed	-	Not allowed
Mass fraction of pellets of different shade, %, not more	Not allowed	Not allowed	Not allowed	Not allowed
Mass fraction of grey and oxidized pellets, %, not more	Not allowed	Not allowed	Not allowed	Not allowed
Density, g/cm ³	0.9205±0.0015	0.9185±0.0015	0.9160±0.002	0.919±0.002
Melt flow index (nominal value) with tolerance, %, g/10 min	0.3±15	2.0±10	25.0±20	0.3±15
Melt flow index dispersion within lot limits, %, not more	±5	±5	±5	±5
Number of inclusions, pcs, not more	2	2	2	2
Film appearance on process sample	C	B	-	C
Cracking resistance under stress, hr., not less	500	4	-	1000
Tensile yield point, Pa, not less	98·10 ⁵	85·10 ⁵	-	93·10 ⁵
Tensile strength, Pa, not less	137·10 ⁵	115·10 ⁵	-	137·10 ⁵
Relative elongation at rupture, %, not less	600	500	-	550
Extractive substances content, %, not more	0.7	0.9	1.4	0.9
Smell and smack of aqueous extracts, score, not higher	1	1	1	1

POLYETHYLENE COMPOSITIONS FOR CABLE INDUSTRY
(GRADES 102-02K, 107-02 K, 102-10 K, 107-10 K, 107-61K)

Polyethylene compositions for cable industry are produced as per GOST 16336.

Properties and recommended usage:

grade 102-02K, 107-02K – resistant to thermal oxidative aging, for dyed and undyed insulation of wire and cable;

grades 102-10K, 107-10K - resistant to thermal oxidative and photo-oxidative aging, black color, for cable sheaths and protection covers;

grade 107-61K - resistant to thermal oxidative aging, self-extinguishing, for insulation of wire and cable.

TECHNICAL CHARACTERISTICS

Parameter	Norm for the grade, highest quality				
	102-02K	107-02 K	102-10 K	107-10 K	107-61 K
Size of pellets in any direction, mm	2-5				
Mass fraction of pellets, %, not more:					
Larger than 5 - 8 mm		0.25			0.5
Less than 2 mm		0.5			0.8
Density, g/cm ³	0.922-0.924	0.917-0.92	Not normed		0.96-0.98
Melt flow index, g/10 min	0.24-0.36	1.7-2.3	0.24-0.36	1.7-2.3	2.0-3.0
Melt flow index dispersion within lot limits, %, not more					

	±5	±5	±5	±5	-
Number of inclusions, pcs, not more	0	0	Not normed		3
Volatile matter content, %, not more	Not normed		0.07	0.07	-
Mass fraction of ash, %, not more	Not normed				-
Cracking resistance, hr., not less	500	2.5	500	2.5	3
Tensile yield point, MPa, not less	11.3	9.3	11.3	9.3	8.8
Tensile strength, MPa, not less	14.7	12.2	14.7	12.2	10.8
Relative elongation at rupture, %, not less	600	550	600	550	500
Extractive substances content, %, not more	1.4	1.0	1.4	1.0	-
Resistance to thermal oxidative aging, hr., not less	8	8	8	8	8
Resistance to photo-oxidative aging, hr., not less	Not normed		500	500	-
Dielectric loss tangent, not more: At frequency of 1 MHz At frequency of 500 MHz	3·10 ⁻⁴ 4·10 ⁻⁴	3·10 ⁻⁴ 4·10 ⁻⁴	- -	- -	3·10 ⁻³ -
Dielectric penetrability, not more: At frequency of 1 MHz At frequency of 500 MHz	2.3 2.3	2.3 2.3	- -	- -	2.6 -
Electric strength (thickness of specimen-1mm) at alternating voltage of frequency 50 Hz, kV/mm, not less	40	40	-	-	35
Thermal stability, hr., not less	-	-	-	-	0.5
Flammability	-	-	-	-	Extinguishes when out of flame

LDPE COMPOSITION

LIGHT STABILIZED WITH INCREASED RESISTANCE TO CRACKING (GRADE 102-10KU)

Light stabilized LDPE composition with increased resistance to cracking (grade 102-10KU) is produced as per TU BY 300042199.057.

Intended for sheaths and protection covers of cables applied by means of extrusion, with increase resistance to cracking.

TECHNICAL CHARACTERISTICS

Parameter	Norm, highest quality
Size of pellets in any direction, mm	2-5
Mass fraction of pellets less than 2 mm, and more than 5 – 8 mm, %, not more	0.25
Melt flow index, g/10 min	0.24-0.36
Melt flow index dispersion within lot limits, % , not more	±5
Volatile matter content, %, not more	0.07
Cracking resistance, hr., not less	1000
Tensile yield point, MPa, not less	11.3
Tensile strength, MPa, not less	14.7
Relative elongation at rupture, %, not less	600
Extractive substances content, %, not more	1.4
Resistance to thermal oxidative aging, hr., not less	8
Resistance to photo-oxidative aging, hr., not less	500

**CABLE LDPE COMPOSITION
GRADE 129-10K**

Cable LDPE composition of grade 129-10K is manufactured as per TU BY 300042199.158.
Intended for insulation, sheaths and protection covers of wire and cable.

TECHNICAL CHARACTERISTICS

Parameter	Norm, highest quality
Size of pellets in any direction, mm	2-5
Mass fraction of pellets, %, not more: Larger than 5 - 8 mm	0.25
Larger than 1 - 2	0.5
Melt flow index, g/10 min	0.24-0.36
Melt flow index dispersion within lot limits, % , not more	±5
Volatile matter content, %, not more	0.07
Cracking resistance, hr., not less	1000
Tensile yield point, MPa, not less	8.0
Tensile strength, MPa, not less	12.5
Relative elongation at rupture, %, not less	500
Extractive substances content, %, not more	1.4
Resistance to thermal oxidative aging, hr., not less	8
Resistance to photo-oxidative aging, hr., not less	500
Density, g/cm ³	Not rated

**SILLANE-CROSSLINKED LDPE COMPOSITIONS
FOR INSULATION AND A COMPOSITION ADDITIVE FOR THEM**

Sillane-crosslinked insulation compositions and a composition additive for them are manufactured as per TU BY 300041455.054.

Used for manufacture of material for power cable insulation in mixture with the composition additive for sillane crosslinking.

Depending on the basic grade of LDPE the following grades are produced:

- compositions - grades 175-299 and 177-299
- composition additives - grade 177-324

TECHNICAL CHARACTERISTICS

Parameter	Not for grades 175-299, 177-299, 177-324
Size of pellets in any direction, mm	2-5
Mass fraction of pellets less than 2 mm, and more than 5 – 8 mm, %, not more	2
Melt flow index, g/10 min, not less	0.3
Melt flow index dispersion within lot limits, % , not more	±15
Volatile matter content, %, not more	0.2

Parameter	Mixture of composition and composition additive
Dielectric loss tangent at frequency 10 ⁶ Hz, not more	4.0·10 ⁻³
Dielectric penetrability at frequency 10 ⁶ Hz, not more	2.5
Thermal deformation during elongation at 200 °C and load 0.2 MPa, %, not more	175

**LDPE COMPOSITIONS FOR HIGH SPEED EXTRUSION
(grade 158-281M)**

LDPE compositions for high speed extrusion are manufactured as per TU RB 300041455.070.
Intended for manufacture of insulation covers of telephone cables.

TECHNICAL CHARACTERISTICS

Parameter	Norm, highest quality
Size of pellets in any direction, mm	2-5

Mass fraction of pellets less than 2 mm, and more than 5 – 8 mm, %, not more	0.5
Melt flow index, g/10 min, not less	1.5-2.5
Melt flow index scattered in a lot, % , not more	±5
Number of inclusions, pcs., not more	3
Dielectric loss tangent at frequency 10 ⁶ Hz, not more	3·10 ⁻⁴
Dielectric penetrability at frequency 10 ⁶ Hz, not more	2.3
Electric strength at alternating voltage of frequency 50 Hz (sample thickness 1 mm), kV/mm, not less	40
Density, g/cm ³	0.9170-0.9210
Tensile strength, MPa, not less	11.3
Cracking resistance, hr., not less	3
Tensile yield point, MPa, not less	9.0
Relative elongation at rupture, %, not less	500

FILM LDPE COMPOSITIONS

LDPE compositions are manufactured as per TU RB 300041455.034.

Intended for manufacture of films for packing milk and milk products.

Depending on the basic grade of polyethylene and formulation of additives the following composition grades are produced: 175-353, 177-353

TECHNICAL CHARACTERISTICS

Parameter	Norm, for the grade	
	175-353	177-353
Size of pellets in any direction, mm	2-5	
Mass fraction of pellets, %, not more:		
Larger than 5 - 8 mm	0.25	
Larger than 1 - 2	0.5	
Number of inclusions, pcs., not more	10	
Melt flow index in a lot, g/10 min	0.6-0.9	0,6-1,2
Melt flow index scattered in a lot, % , not more	±10	
Number of inclusions per 1m ² of film, pcs., not more		
- from 0.5 mm to 1.0 mm inclusive	25	
- more than 1.0 mm and up to 2.0 mm, inclusive	5	
- more than 2 mm	None	
Friction factor (static)	0.1-0.25	

SLIDING LDPE COMPOSITIONS

Sliding LDPE compositions are produced as per TU RB 300041455.038.

Intended for manufacture of films used in the production of household articles, including the articles contacting with foodstuff.

Depending on the basic grade of polyethylene and recipe of additives the following composition grades are produced: 162-132, 175-132, 177-132.

TECHNICAL CHARACTERISTICS

Parameter	Norm for the grade, highest quality		
	162-132	175-132	177-132
Size of pellets in any direction, mm	2-5		
Mass fraction of pellets, %, not more:			
Larger than 5 - 8 mm	0.25		
Larger than 1 - 2 mm	0.5		
Density, g/cm ³	0.923±0.002	0.925±0.002	0.9190±0.002
Melt flow index (nominal value) with tolerance, %, g/10 min	2.0±25	0.6±25	1.0±20
Melt flow index dispersion within lot limits, % , not more	±8	±8	±8
Number of inclusions, pcs, not more	4	4	5
Tensile yield point, Pa, not less	108·10 ⁵	118·10 ⁵	85·10 ⁵
Tensile strength, Pa, not less	113·10 ⁵	142·10 ⁵	122·10 ⁵
Relative elongation at rupture, %, not less	600	600	600
Film appearance on process sample	B	B	B
Friction factor (static)	0.1-0.3	0.1-0.3	0.1-0.3

LOW MOLECULAR WEIGHT LDPE

Low molecular weight LDPE as per TU RB 300041455.031.

Intended for usage as component in the production of different composition materials of technical application.

TECHNICAL CHARACTERISTICS

Parameter	Norm
Appearance	Waxy medium or pieces of different size from light-grey to brown color
Drop point, °C	25-120
*Ash mass fraction, %, not more	0.5
* Value is determined if there is a request from the customer	

LDPE VILATERM

LDPE Vilaterm is produced as per TU BY 300041455.018.

Intended for production of technical articles, namely, non-pressure pipes, fittings, blown articles, etc., except articles contacting with foodstuff and potable water.

TECHNICAL CHARACTERISTICS

Parameter	Norm	
	Grade A	Grade B
Appearance	Mixture of pellets of different grades, color, size. There may be present sticking together pellets, oxidized pellets, pellets of irregular shape and pellets with impurity inclusions.	
Melt flow index, g/10 min	0.2 – 4.0	4.1 – 30.0
Mass fraction of pellets of other color, %, not less	2.5	

ACRYLIC FIBRE NITRON D

Acrylic fibre Nitron-D is produced as per
TU BY 300041455.015:

grade ND-1 – bright undyed crimped fibre;
grade ND-4 – bright gel dyed crimped fibre;
grade ND-5 – dull undyed crimped fibre;
grade ND-6 – dull gel dyed crimped fibre.

The fibre is produced as tow or staple.

Intended for processing in textile industry, and by other industrial uses.

TECHNICAL CHARACTERISTICS

Parameter	Norm, 1 st quality
Nominal linear density of filament, tex*	0.13; 0.17; 0.22; 0.28; 0.33; 0.56; 0.67; 0.78; 1.10; 1.70; 2.50
Nominal linear density of tow, tex*	102000; 106000; 110000; 117000; 119000; 123000. 128000; 137000; 138000
Nominal staple length, mm *	32; 38; 51; 64; 72; 75; 102; 128; 140; 152
Specific tensile strength, mN/tex, not less than*:	147-245
Breaking elongation, %*	24-65
Specific tensile strength of filament in knot, mN/tex, not less *	72-108
Deviation of the actual linear filament density from the nominal value, %, not more, for nominal linear densities of filament: 0.13; 0.17; 0.22; 0.28 tex 0.33; 0.56; 0.67; 0.78; 1.10; 1.70; 2.50 текс	±8.0 ±6.0
Deviation of the actual linear tow density from the nominal value, %, not more, for nominal linear densities of filament: 0.13; 0.17; 0.22; 0.28 tex 0.33; 0.56; 0.67; 0.78; 1.10; 1.70; 2.50 tex	±8.0 ±6.0
Deviation of the actual fiber length from the nominal value, %	+6.0 -5.0
Number of crimps per 1 cm, for the nominal linear densities of filament: 0.13; 0.17 tex 0.22; 0.28; 0.33; 0.56; 0.67; 0.78; 1.10; 1.70; 2.50 tex	3.0-5.0 2.0-4.5
Linear shrinkage, %, not more, for nominal linear density of filament: 0.13; 0.17; 0.22; 0.28; 0.33 tex 0.56; 0.67; 0.78; 1.10; 1.70; 2.50 текс	5.0 4.5
Finishing oil content on fibre, %	0.30-0.70
Whiteness, %, not less than, for nominal linear densities of filament: 0.13; 0.17; 0.22; 0.28; 0.33; 0.56; 0.67; 0.78 текс 1.10; 1.70; 2.50 текс Optically bleached	70.0 63.0 100
Mass fraction of fibre dust, %, not more	0.01
Mass fraction of stuck fibre, %, not more	0.001
Mass fraction of rough fibre, %, not more	0.1
Mass fraction of uncut fibre, %, not more	0.005
Actual fibre humidity, %, not more	2.0

*Values depend on fibre grade and nominal linear density of filament

MIXED ACRYLIC FIBRE

Mixed acrylic fibre is produced as per TU RB 300041455.013.

Grade A - mixture of undyed acrylic fibres of different production lots and linear density.

Grade B – mixture of acrylic fibres of different colors, production lots and linear density.

Intended for usage in production of needle-punched and glued non-wovens for technical usage.

TECHNICAL CHARACTERISTICS

Parameter	Norm
Actual humidity, %, not more	6.0
Mass fraction of fibre dust, %, not more	0.15

TECHNICAL ACRYLIC FIBRE NITRON D

Technical acrylic fibre Nitron-D is produced as per TU BY 300042199.041.

Type Zh – technical fibre composed of pieces of different length, mixed, after all stages of acrylic fibre manufacture process except drying.

Type M - technical fibre composed of pieces of different length, mixed, after all stages of acrylic fibre manufacture process except washing and drying.

Recommended usage:

Type Zh – as feedstock in production of geotextiles, nonwovens and other technical articles not contacting with human skin.

Type M – as feedstock in production of water-soluble emulsions and special compositions of technical application.

TECHNICAL CHARACTERISTICS

Parameter	Norm	
	Type Zh	Type M
Mass fraction of water, %, not more	10	60

TECHNICAL ACRYLONITRILE

Technical acrylonitrile is produced in accordance with GOST 11097 and TU BY 300042199.100. Technical acrylonitrile is used for the production of synthetic fibers, ABS plastics, special wear-resistant, styrene-butadiene and nitrile butadiene rubbers, butadiene-nitrile resins, various plastics, rubbers, acrylic acid esters, plasticizers, copolymers with vinyl chloride, styrene (SAN plastic), cyanoethyl cellulose, for the synthesis of other chemical products (acrylamide, methyl acrylate, glutamic acid, adiponitrile and further hexamethylenediamine - raw material for the production of nylon and polyurethanes).

TECHNICAL CHARACTERISTICS

Parameter	Norm according to GOST 11097, highest quality	Norm according to TU BY 300042199.100
Appearance	Transparent liquid without mechanical impurities	
Chromaticity, Hazen units, not more	5	
Density at 20°C, g/cm ³	0.800-0.806	
Refraction index at 20°C	1.3910-1.3920	-
Mass fraction of acid as acetic acid, %, not more	0.0020	
Mass fraction of water, %, not more	0.45	
Mass fraction of hydrogen cyanide, %, not more	0.0005	
Mass fraction of Fe, %, not more	0.00001	
Mass fraction of Cu, %, not more	0.00001	
Mass fraction of acrolein, %, not more	0.0005	
Mass fraction of propionitrile, %, not more	-	0.0150
Mass fraction of crotonitrile, %, not more	-	0.0150
Mass fraction of acetone, %, not more	0.0100	
Mass fraction of acetonitrile, %, not more	0.0050	
Mass fraction of aldehydes as acetaldehyde, %, not more	0.0030	
Mass fraction of peroxides as hydrogen peroxide, %, not more	0.00002	-
Mass fraction of methacrylonitrile, %, not more	-	0,0250
Mass fraction of stabilizer, %		
ammonia	0.008-0.012	
hydroquinone	0.01-0.10	
n-methoxyphenol	0.0035-0.0050	
Boiling range, at 760 mm Hg:		
initial boiling point, not lower		
final boiling point, not lower	74.5	-
In a.m. range, to be distilled per volume, %, not less	79.0 98	- -
pH of 5% acrylonitrile water solution	6.0-9.0	
Titration number, not more	2	-

TECHNICAL ACETONITRILE

Technical acetonitrile is produced in accordance with TU RB 300041455.010.

Technical acetonitrile is used as a raw material for the synthesis of chemical products, for the production of vitamin B1, in the textile and petrochemical industry, as a solvent of organic compounds, as an extractive agent for separation of hydrocarbons by extractive distillation, and for the removal of tars, phenols and colorants from hydrocarbons.

TECHNICAL CHARACTERISTICS

Parameter	Norm for the grade	
	A	B
Mass fraction of main substance, %, not less	99.4	99.2
Mass fraction of hydrocyanic acid, %, not more	0.0005	0.0009
Mass fraction of ammonia, %, not more	0.0004	0.0008
Mass fraction of acetic acid, %, not more	0.0010	0.0030
Mass fraction of acetone, %, not more	0.0020	0.0050
Mass fraction of acrylonitrile, %, not more	0.0045	0.0070
Mass fraction of oxazol, %, not more	0.0100	0.0300
Mass fraction of propionitrile, %, not more	0.0500	0.1000
Mass fraction of allyl alcohol, %, not more	0.6000	0.8000
Mass fraction of water, %, not more	0.10	0.20
Hydrogen ion exponent of acetonitrile solution with mass fraction 10%, pH	6.0-8.0	

TECHNICAL ACETONE CYANOHYDRIN

Technical acetone cyanohydrin is produced in accordance with GOST 13198, TU BY 300042199.126.

Technical acetone cyanohydrin is used for the production of methyl ester, polymethyl methacrylic film, methacrylic acid, BMK-5 resin, AS resin, MKB compound, porophore ChHZ-57 and other products.

TECHNICAL CHARACTERISTICS

Parameter	Norm as per GOST 13198	Norm as per TU BY 300042199.126
Chromaticity, not more	15	15
Mass fraction of main substance, %, not less	99.4	99.4
Mass fraction of water, %, not more	0.2	0.2
Mass fraction of acetone, %, not more	-	0.4
Mass fraction of hydrocyanic acid, %, not more	0.04	0.04
Mass fraction of acid as sulphuric acid, %, not more	0.1	0.1
Impurities, insoluble in water	None	None

METHYL ACRYLATE

Methyl acrylate (methyl ester of acrylic acid) is produced in accordance with the manufacturing regulations of the workshop № 204 of the plant Polymir.

Methyl acrylate is used for the production of acrylic fibres, photofilms, acrylic emulsions, various grades of polymethacrylates, fabric proofing, gluing of plywood, fabrics, in pharmacy and for some other technical use cases.

TECHNICAL CHARACTERISTICS

Parameter	Norm, 1 st quality
Appearance	Transparent liquid without mechanical impurities
Chromaticity, Hazen units, not more	10
Density at 25°C, g/cm ³	0.948÷0.951
Mass fraction of methyl acrylate, %, not less	99.3
Mass fraction of acrylic acid, %, not more	0.010
Mass fraction of water, %, not more	0.15
Mass fraction of impurities*, %, not more	0.5
Mass fraction of paramethoxyphenol (Stabilizer), %	0.04÷0.06

Note: * – the term “impurities” in this particular case is understood to mean the amount of dimethyl ether, methanol, acetaldehyde, acetone, methyl acetate, acrylonitrile, ethyl acrylate, β -methoxypropionic acid.

POLYETHYLENE FILM

Polyethylene film is produced in accordance with GOST 10354.

Depending on the application and the original composition of the film, the following grades of the film are produced: N, ST, V.

Recommended use:

Grade N is intended for the manufacture of consumer goods, packaging and household products, including products for food contact use;

Grade ST is intended for use in agriculture as a translucent weather-resistant coating for agricultural structures (greenhouses, grow tunnels, etc.) and other use cases.

Grade V is intended for use in construction of meliorative and water-management facilities as impervious screen.

TECHNICAL CHARACTERISTICS

Parameter	Norm for the grade, highest quality		
	N	ST	V
*Nominal film thickness, mm	0.015-0.500	0.030-0.400	0.200-0.400
Maximum deviation from the nominal film thickness:	± 20 %	± 20 %	± 20 %
Film width, mm, within the range	up to 6000	up to 6000	3000 -6000
Maximum deviation from the nominal film width per roll	± 2 %		
Number of film cutoffs per roll, not more	2		
Maximum length of a film cutoff in a roll, m	50		
Tensile strength, MPa, not less:			
- longitudinally	14.7	14.7	14.7
- transversally	11.8-13.7*	13.7	13.7
Relative elongation, %, not less:			
- longitudinally	150-330*	300-350*	450
- transversally	150-400*	400-440*	450
Static coefficient of friction	0.1-0.5		-
Specific surface electrical resistivity, Ohm, not more	1·10 ¹⁶		-

* - values of parameters depend on the film thickness.

Note:

1. Stabilizers, pigments or coloring agents, modifying agents can be used for the production of the N and ST grades of the film.

2. Other nominal thicknesses of the film may be produced upon request.

POLYETHYLENE SHRINK FILM

Polyethylene shrink film is produced in accordance with GOST 25951.

Polyethylene shrink film is intended for packaging of piece-products, including consumer packaging, multiple-unit packaging and packaging of cargoes.

Polyethylene film of U, O, T and P grades is approved for food contact applications.

TECHNICAL CHARACTERISTICS

Parameter	Norm for the grade			
	U	O	T	P
*Nominal film thickness, mm	0.03-0.07	0.03-0.10	0.07-0.10	0.08-0.20
Maximum deviation from the nominal film thickness:	±20 %	±20 %	±20 %	±15 %,* ±20 %*
Film width in a roll, mm				
sleeve	from 800 to 1500 inc. over 1500 to 2000 inc.	from 800 to 1500 inc. over 1500 to 2000 inc. over 2000 to 2700 inc.	from 800 to 1500 inc.	over 1500 to 2000 inc. over 2000 to 2700 inc.
semi-sleeve	up to 500 over 500 to 800 inc. over 800 to 1500 inc. over 1500 to 2000 inc.	up to 500 over 500 to 800 inc. over 800 to 1500 inc. over 1500 to 2000 inc. over 2000 to 2700 inc.	up to 500 over 500 to 800 inc. over 800 to 1500 inc.	over 500 to 800 inc. over 800 to 1500 inc. over 1500 to 2000 inc. over 2000 to 2700 inc.
fabric	up to 500 over 500 to 800 inc. over 800 to 1500 inc. over 1500 to 2000 inc.	up to 500 over 500 to 800 inc. over 800 to 1500 inc. over 1500 to 2000 inc. over 2000 to 2700 inc.	up to 500 over 500 to 800 inc. over 800 to 1500 inc.	over 1500 to 2000 inc. over 2000 to 2400 inc.
sleeve with folding	-	-	-	from 700 to 1410 inc. over 1410 to 1800 inc.
Maximum deviation from the nominal film width, mm				
sleeve	± (15-20) *	± (15-40) *	± 15	± (20-40) *
semi-sleeve	± (5-20) *	± (5-40) *	± (5-10) *	± (10-40) *
fabric	± (5-20) *	± (5-30) *	± (5-15) *	± (20-30) *
sleeve with folding	-	-	-	+30*, +40*, -10*
Shrinkage, %, longitudinal / transversal, not less	50/35*; 45/30*; 40/30*	not less than 60% longitudinally, not more than 25% transversally	40/30*	40/25*; 40/20*; 30/20*
Appearance of film	The film should not have pressed-in creases, breakages, holes, except for artificial perforation holes, mechanical damages, colored stripes due to overheating of raw materials			
Color	Natural, dyed			
Tensile strength, MPa, not less, in the following direction:				
- longitudinally	14.7			
- transversally	13.7			
Relative elongation, %, not less, in the following direction:				
- longitudinally	(200-250)*		250	
- transversally	300		350	
Static coefficient of friction, not less	-	0.5	-	-

*- values of parameters depend on the nominal film thickness;

Other nominal thicknesses of the film may be produced upon request.

POLYETHYLENE GREENHOUSE FILM

Polyethylene greenhouse film is produced in accordance with TU BY 300041455.036.

Polyethylene greenhouse film is intended for agricultural applications.

Properties of the film:

Grade SS-3T – heat retaining, light stabilized;

Grade TSP – heat retaining, light stabilized, selectively transmits visible light;

Grade TSS-5 – light stabilized, with a service life of 5 years;

Grade GS – light stabilized, with a hydrophilic surface.

TECHNICAL CHARACTERISTICS

Parameter	Norm			
	SS-3T	TSP	GS	TSS-5
Nominal film thickness, mm	0.120; 0.150; 0.180			0.180; 0.200; 0.220
Maximum deviation from the nominal film thickness, mm	±0.030			
Film width, mm, within the range	1500-3000, 3000-4500			
Maximum deviation from width of the film, %	± 2.5			
Tensile strength, MPa, not less:				
- longitudinally	15	15	14.7	16
- transversally	15	15	13.7	16
Relative elongation, %, not less, in the following direction:				
- longitudinally	350	350	350	450
- transversally	400	400	400	500
Color of film	-	pink	-	goldish
Specific surface electrical resistivity, Ohm, not more	-	-	$1 \cdot 10^{13}$	-

Other nominal thicknesses of the film may be produced upon request.

POLYETHYLENE FILM VILATERM

Polyethylene film Vilaterm is produced in accordance with TU BY 300041455.029.

Polyethylene film Vilaterm is intended for agricultural applications such as foodstuff conservation, mulching and other use cases.

TECHNICAL CHARACTERISTICS

Parameter	Norm
Nominal film thickness, mm	0.100-0.300
Maximum deviation from the nominal film thickness, %	± 30
Film width, mm, not less	
sleeve	500
fabric	1000
Maximum deviation from the nominal film width, mm	
sleeve	±50
fabric	± 100
Tensile strength longitudinally and transversally, MPa, not less:	8.3

Other nominal thicknesses of the film may be produced upon request.

POLYETHYLENE HOUSEHOLD BAGS

Polyethylene household bags are produced in accordance with TU BY 300042199.101.

Recommended use:

Type A – is intended for placing, protection, transportation, loading and unloading, shipping and storage of food;

Type B – is intended for placing, protection, transportation, loading and unloading, shipping and storage of various goods and bulk production of household and industrial use (excluding food).

TECHNICAL CHARACTERISTICS

Parameter	Norm for the Type	
	A	B
Appearance	There should be no cracks, pressed creases, punctures, tears, rips, through holes, foreign inclusions (including metal)	
Accumulation of gels and filaments	Not allowed	Not standardized
Color	Undyed	Undyed, from light gray to black
Length, mm	1000±20	
Width, mm	500±18	
Nominal thickness, mm	0.080÷0.180	
Deviation of actual thickness from nominal, %	± 30	
Weld strength at break, MPa, not less	8.2	

Note: bags with other linear dimensions may be produced upon request.

POLYETHYLENE HOUSEHOLD PIPES

Polyethylene household pipes are produced in accordance with TU RB 300041455.039.

Polyethylene household pipes are intended for agricultural applications such as the manufacture of greenhouses, construction of drain sewage systems and other technical use cases.

Use of the pipes for construction of drinking water pipelines is not allowed.

TECHNICAL CHARACTERISTICS

Outer diameter, mm		Wall thickness, mm	
Nominal value	Tolerance	Nominal value	Tolerance
18	± 0.3	2.0	± 0.4
		2.5	± 0.5
20	± 0.3	2.0	± 0.4
25	± 0.3	2.0	± 0.4
		2.7	± 0.5
		3.5	± 0.6
		4.2	± 0.7
32	± 0.7	2.0	± 0.4
		2.4	± 0.5
		3.5	± 0.6
		4.2	± 0.7
		5.4	± 0.9
40	± 0.4	3.3	± 0.5
50	± 1.0	2.4	± 0.5
		2.7	± 0.5
		3.7	± 0.6
		4.2	± 0.7
		5.4	± 0.9
		8.4	± 1.3
63	± 1.1	3.0	± 0.5
		4.7	± 0.8
		6.8	± 0.9
		10.5	± 1.6

Note – pipes of other dimensions may be produced upon request.

The pipes are produced in straight sections (1.5-6.0 m) or in coils with length of 300 m. Maximum deviation of length from nominal value is ± 1%.

POLYETHYLENE EMULSION OXALENE-30

Polyethylene emulsion Oxalene-30 is produced in accordance with TU RB 300041455.023.

Polyethylene emulsion Oxalene-30 is intended for use as a component of finishing agents in the textile industry.

TECHNICAL CHARACTERISTICS

Parameter	Norm
Appearance	Fine homogeneous viscous aqueous dispersion of white or yellowish color, similar to dairy cream
Mass fraction of polyethylene wax, %, not less	25
Hydrogen ion exponent, pH	7.0-8.0
Stability during centrifugation	is not separated
Stability when adding ammonium chloride and magnesium chloride catalysts	no coagulation
Stability in acidic (pH 3.9 — 4.1) and alkaline media (pH 8.9 — 9.1)	no coagulation

SORBITAN S

Sorbitan S is produced in accordance with TU RB 300041455.051.

Sorbitan S is intended for use as a textile auxiliary agent in the production and processing of chemical fibers.

TECHNICAL CHARACTERISTICS

Parameter	Norm
Acid value, mg KOH/g	7.0-12.0
Saponification value, mg KOH/g	145.0-157.0
Hydroxyl value, mg KOH/g	235.0-260.0
Melting temperature, °C	52.5 -55.5

SORBITAL S-20

Sorbital S-20 is produced in accordance with TU RB 300041455.050.

Sorbital S-20 is intended for use as a textile auxiliary agent for the treatment of chemical fibers.

TECHNICAL CHARACTERISTICS

Parameter	Norm
Acid value, mg KOH/g	0.1-2.0
Saponification value, mg KOH/g	45.0-55.0
Hydroxyl value, mg KOH/g	81.0-96.0
Melting temperature, °C	22.0-25.0
Mass fraction of water,%	2.0-4.0

AMMONIUM SULPHATE

Ammonium sulphate is produced in accordance with TU RB 300041455.007.

Ammonium sulphate is intended for use as nitrogen fertilizer in agriculture.

Ammonium sulphate is recommended for such agricultural plants as rape, cabbages and other cruciferous crops, buckwheat, winter and spring wheat, potatoes, sugar beets, rice, fodder crops, flax, tea, sunflowers, carrots, tomatoes, sorrel, parsley, turnips, radishes, pumpkins, marrow squashes, small radishes, gooseberries, raspberries.

TECHNICAL CHARACTERISTICS

Parameter	Norm
Appearance	White or light-gray crystals
Nitrogen content in dry matter, % not less	21
Mass fraction of free sulfuric acid,%, not more	0.05
Friability, %	100
Mass fraction of water,%, not more	0.3
Mass fraction of water-insoluble residue,%, not more	0.02

PIGMENT SUPER CONCENTRATES

Pigment super concentrates are produced in accordance with TU BY 300041455.020.

Pigment super concentrates are intended for dyeing polyolefins (LDPE, HDPE and etc.) in the extrusion process, and also for dyeing articles in the production by extrusion and molding, including products for food contact use and toys.

The recommended dosage of pigment super concentrates for dyeing of polyolefins is $(2 \pm 0,15)\%$.

TECHNICAL CHARACTERISTICS

Parameter	Norm
Pellet size, mm	2-5
Mass fraction of pellets,%, not more: with size over 5 to 8 mm with size over 1 to 2 mm	5 0.5
Color	Corresponds to the reference color sample
Thermal stability of dyeing at 200 °C	Passes the test
Migration resistance of pigments	Passes the test

POLYETHYLENE WAX

Polyethylene wax is produced in accordance with TU RB 300041455.024.

Grades PV-200, PV-300 – non-oxidized wax.

Grade PVO-30 – oxidized wax.

Polyethylene wax is intended for the production of wax compositions for industrial purposes in various branches of industry.

TECHNICAL CHARACTERISTICS

Parameter	Norm		
	Non-oxidized wax		Oxidized wax
	PV-200	PV-300	PVO-30
Color	From white to light-yellow		From light-yellow to light-brown
Appearance	Particles of irregular shape with a size of 0.1-7 mm in all directions		Pieces of various sizes
Presence of pellets with a size over 7 to 12 mm,%, not more	0.25		-
Melt viscosity (dynamic) at 140°C, Pa•s 10^{-3}	180-300	300-450	25-80
Dropping Point, °C	not less than 103	not less than 104	not more than 100
Penetrations, pcs (10^{-1} mm), not more	5.0	3.0	30.0
Mass fraction of ash, %, not more	0.02	-	-
Acid value, mg KOH per 1 g of wax	-	-	25.0-30.0
Saponification value, mg KOH per 1 g of wax	-	-	45.0-80.0
Number of inclusions, not more	30	30	-

MIXTURE OF TECHNICAL PROPANE AND BUTANE

Mixture of technical propane and butane is manufactured as per STB 2262.
Intended for usage as fuel for domestic and municipal needs, as well as in industries.

TECHNICAL CHARACTERISTICS

Parameter	Norm
Mass fraction of components, %: Methane, ethane, ethylene Propane and propylene, not less Butane and butylene, not more	Not normed Not normed 60
Volume fraction of liquid residue at 20 °C, %, not more	1.6
Gage pressure of saturated vapours, MPa, at temperature plus 45 °C, not more	1,6
Mass fraction of hydrogen sulphide and mercaptan sulphur, %, not more including hydrogen sulphide, not more	0.013 0.003
Free water and alkali content	None
Odor intensity, scores, not less	3

PROPYLENE

Propylene is manufactured as per TU BY 300042199.125.

Intended for usage as raw materials in the organic synthesis during production of acrylonitrile, isopropylbenzene, butyl alcohols and other organic products.

TECHNICAL CHARACTERISTICS

Hydrocarbon feedstock	Norm
Volume fraction of propylene, %, not less	96.0
Volume fraction of propane, %, not more	3.0
Volume fraction of hydrocarbons C ₄ , %, not more	0.5
Volume fraction of methane, %, not more	0.3
Volume fraction of ethane, ethylene, total %, not more	0.3
Volume fraction of acetylene and methylacetylene, total %, not more	0.15
Volume fraction of diene hydrocarbons (propadiene and butadiene), %, not more	0.15

NON-HYDRATED BUTYLENE-BUTADIENE FRACTION

Non-hydrated butylene-butadiene fraction (C₄ fraction) is manufactured as per TU RB 300041455.008.

Intended for usage as raw materials for production of synthetic rubber.

TECHNICAL CHARACTERISTICS

Hydrocarbon composition	Norm for the grade		
	A	B	V
Mass fraction of C ₄ hydrocarbons, %, not less	98		
Including mass fraction of 1,3 - butadiene, %, not less	40	30	20
Mass fraction of hydrocarbons C ₃ and C ₅ and higher totally, %, not more	2.0		

METHYLACETYLENE-ALLENE FRACTION

Methylacetylene-allene fraction is produced as per TU TY BY 300042199.043.

Recommended usage:

Grade A – gas flame treatment of metals (welding, cutting, soldering, metal coating, thermal treatment, etc.),

Grade B – for metal cutting

MAF may be used in organic synthesis and for other purposes.

TECHNICAL CHARACTERISTICS

Hydrocarbon composition	Norm for the grade	
	A	B
Volume fraction of methylacetylene and allene, % - including methylacetylene, %, not less	70-75 38	65-75 Not normed
Volume fraction of hydrocarbons C4, %, not more	6	
Volume fraction of acetonitrile, %, not more	0.5	
Volume fraction of propane and propylene, %	Not normed	
Volume fraction of water, %, not more	0.004	Not normed

HYDROSTABILIZED PYROCONDENSATE

Hydrostabilized pyrocondensate is produced as per TU RB 300041455.006.

Intended for usage as additive for motor gasolines during their production, as well as feedstock for production of aromatic hydrocarbons.

TECHNICAL CHARACTERISTICS

Parameter	Norm
Volume fraction of distilled pyrocondensate: 10 % is distilled at the temperature, ° C, not lower 50 % is distilled at the temperature, ° C, not lower 95 % is distilled at the temperature, ° C, not higher	45 65 170
Induction period, min, not less	120
Actual gum concentration, mg/ 100 ml, not more	5
Mechanical impurities and water	None
Total aromatics content, % wt, not less	50
Saturated steam pressure, kPa, not more	70

HEAVY PYROLYSIS RESINS

Heavy pyrolysis resins are produced as per TU RB 300041455.002.

Intended for usage as a component in production of technical carbon, coke, plasticizing resins, as a component of boiler and furnace fuel.

TECHNICAL CHARACTERISTICS

Parameter	Norm, 1 st quality
Density at 20 ° C, g/cm ³ , not less	1.040
Kinematic viscosity at 50 °C, mm ² /s, not more	25
Distillation temperature of 3% of volume, 0C, not less	180
Water content, %, not more	0.3
Mechanical impurities content, %, not more	0.02