

**COKE OVEN AND BY-PRODUCT PLANT****Coal tar naphtha (benzol), GOST 8448-78**

Field of application: Raw material for organic synthesis

Description of rated indices	Rate for grade, synthesis	
	Superior quality	First quality
External appearance and color	Transparent liquid containing no foreign impurities, including water, suspended and settled to the bottom; the liquid is not darker than color of 0.003 g of K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> solution in 1 dm <sup>3</sup> .	
Density at 20°C (g/cm <sup>3</sup> )	0.877-0.880	0.877-0.880
Distillation range: 95% volume from boiling point is distilled within the following temperature range, °C, not more than (including pure benzol boiling temperature 80.1°C)	0.6	0.6
Crystallization temperature (°C, not lower than)	5.3	5.3
Impurities fractions (of total mass) are as follows (% , not more than):		
N/heptane	-	-
Methyl cyclohexane + toluene	-	-
Sulphuric acid coloring (reference scale number, not more than)	0.1	0.1
Bromine absorption number (g/100 cm <sup>3</sup> of benzol, not more than)	-	-
Fractions (of total mass) are as follows (% , not more than):		
Hydrogen sulphide	0.00007	0.0001
Thiophene	0.0002	0.0004
Hydrogen sulphide and mercaptans	-	-
Total sulphur	0.0001	0.00015
Copper strip test	Withstands	
Water extract reaction	Neutral	

**Naphthalene of the coke and by-product process, TU 14-7-97-89**

Field of application: Plasticizers and paints production

Description of rated indices	Rate for grade		
	A		B
	First quality	Second quality	
External appearance	Molten or solid product in the form of powder, scales, tablets, balls, briquettes (not more than of 50 kg in mass) or in the crushed form with a lump mass being not more than 2 kg.		
Color	-	-	From light gray to gray
Crystallization temperature (°C, not less than)	78.8	78.5	78.5
Fractions (of the total mass) are as follows:			
Ash (% , not more than)	0.02	0.08	0.15
Water (% , not more than)	0.3	0.4	0.3
Sulphur (% , not more than)	-	-	0.5

**Naphthalene of the coke-and by-product process, GOST 16106-82**

Field of application : Plasticisers and paints production

Description of rated indices	Rate for grade	
	TA	TB
External appearance	Molten product	
Color	Not rated	
Coloring as per the iodine scale (not more than)	9	14
Crystallization temperature (°C, not less than)	79.0	78.8
Difference in crystallization temperature between naphthalene recrystallized from alcohol and the one extracted from mother solution (°C, not more than)	Not rated	
Sulphuric acid action, solution number, reference scale comparison	Not rated	
Fractions (of the total mass) are as follows:		
Non-volatile residue, %	0.04	0.04
Ash (% , not more than)	0.02	0.02
Water (% , not more than)	0.2	0.2
Sulphur (% , not more than)	0.5	0.5
Indole (% , not more than)	0.2	0.2
Oleaginousness test	Not rated	

**Coke fines, TU 14-7-115-89**

Field of application : Iron ore/Nickel ore sintering

Description of rated indices	Rate for grade	
	KM-1	KM-2
Lump size (mm)	0-10	0-10
Fractions (of total mass) are as follows:		
Ash (% , not more than)	13	16
Total moisture (% , not more than)	22.0	22.0
Lumps of not more than 10 mm in size (% , not more than)	8.0	8.0

**Coke nut, GOST 8935-77**

Field of application : Fuel and carbonic reducer in ferroalloy and electrode production

Non-ferrous metallurgy and other branches of industry

Fractions (of total mass) are as follows:	Rate for grade		
	KO-1	KO-2	KO-3
Ash (% , not more than):	11.0	13.0	13.0
Working moisture	18.0	18.0	18.0
Lumps of more than 25 mm in size	10.0	10.0	10.0
Lumps of less than 10 mm in size	10.0	15.0	-
Lumps of less than 8 mm in size	-	-	13.0

**Foundry coke from coal, TU 0761-179-00190437-01**

Field of application : Metallurgical industry ( in cupola furnaces of foundries)

Description of rated indices	Rate for grade	
	KL-1	KLC
Fraction of total mass (% , not more than):		
Ash	12.0	12.0
Total moisture in fuel at working condition	5.0	-
Total sulphur	0.6	0.6
Total phosphorus	0.04	0.04
Lumps less than lower size limit	6.0	7.0
Coke-stability test indices:		
M40 (% , not less than)	73.0	75.0
M10 (% , not more than)	9.0	8.0

**Calcinated pitch coke from coal, TU 14-7-80-86**

Field of application : Anode compound production

Electrode, electric carbon, ferroalloy and abrasive branches of industry

Description of rated indices	Rate
Fractions (of the total mass) are as follows:	
Ash (% , not more than)	0.5
Total sulphur (% , not more than)	0.5
Lumps more than 100 mm in size (% , not more than)	5.0
True density (g/cm <sup>3</sup> , not less than)	1.98
Specific electric resistance (Ohm·m , not more than)	650×10 <sup>-6</sup>

**Coal Tar Pitch, GOST 1038-75 (High-temperature grade)**

Field of application : Metallurgical industry ( tap-hole clay production)

Description of rated indices	Rate
External appearance	Solid product in the form of lumps from 0 to 70 mm in size
Softening temperature (°C , not less than)	170
Volatile matters yield (% , not more than)	42
Ash content (% , not more than)	0.4

**Coal tar solvent, GOST 1928-79 (Grade B)**

Field of application : Solvent

Description of rated indices	Rate
External appearance and color	Transparent liquid, containing no suspended particles, including water drops, from colorless to light yellow color
Distillation range: 90% (in volume) from boiling point is distilled within the following range of temperatures (°C):	120-180
Density at 20°C (kg/m <sup>3</sup> )	860-895
Volatility with xylene (not more than)	2.0
Sulphuric acid coloring (reference scale number , not more than)	Not rated
Water extraction reaction	Neutral
Fraction (of total mass):	
Phenols (% , not more than)	0.1
Total sulphur (% , not more than)	0.3

**Coal tar toluene, GOST 9880-79 (Grade B)**

Field of application : Solvent

Description of rated indices	Rate for grade	
	Superior quality	First quality
External appearance and color	Transparent liquid, containing no suspended particles, including water drop; it is not darker than the color of solution of 0.003 g of $K_2Cr_2O_7$ in one bucket of water.	
Distillation range: 95% (by volume) from boiling point is distilled within the temperature range ( $^{\circ}C$ , not more than, including pure toluene boiling temperature $110.6^{\circ}C$ )	0.9	1.0
Density at $20^{\circ}C$ ( $g/cm^3$ )	0.863-0.867	0.863-0.867
Sulphuric acid coloring (reference scale number, not more than)	0.20	0.20
Water extraction reaction	neutral	
Basic substance fraction of total mass (% , not more than)	Not determined	
Hydrogen sulphide and mercaptans content (% , not more than)	N.A.	
Bromine number (grams of bromine per $100\text{ cm}^3$ of toluene, not more than)	0.2	0.2
Copper strip test	Withstands	

**Unified oil of coke and by-product process, TU 38.501-02-19-89**

Field of application : Industrial carbon production

Description of rated indices	Rate
Density at $20^{\circ}C$ ( $g/cm^3$ , not less than)	1.095
Fractions (of total mass) are as follows (% , not more than):	
Water	1.5
Sodium ion	0.005
Potassium ion	0.0005
Mechanical impurities	0.02
Sediment at $60^{\circ}C$	N.A.
Cokability (coking value) (% , not more than)	1.5

**Anthracene oil, TU 14-6-150-78**

Field of application : Wood impregnation

Description of rated indices	Rate
Density at $20^{\circ}C$ ( $kg/m^3$ )	1100-1150
Volume fraction of:	
Water (% , not more than)	1.3
Distillation analysis:	
Distillate up to $210^{\circ}C$ (% , not more than)	8
Distillate up to $235^{\circ}C$ (% , not more than)	25
Distillate up to $360^{\circ}C$ (% , not less than)	60
Fraction of substances, not dissolved in toluene, in total mass (% , not more than)	0.3
Sediment at $50^{\circ}C$	N.A.

**Ammonium sulphate (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>, TU 113-03-625-90**

Field of application : Nitrogen fertilizer, well dissolved in soil moisture. Indispensable as autumn fertilizer for heavy and well absorbing soils.

It is highly effective for all crops cultivated on alkaline soils (black-soil and grey-soil).

It is most effective for potatoes, winter rye, wheat and other crops withstanding higher acidity.

Description of rated indices	Rate for grade B
	OKP 2181210700
External appearance	Slightly colored crystals
Fraction of total mass:	
Nitrogen, when converted to dry substance (% , not less than)	21
Water (% , not more than)	0.3
Free sulphuric acid (% , not more than)	0.05
Insoluble impurities (% , not more than)	0.05
Friability (%)	100

**Conversion Pig iron, GOST 805-95**

Field of application: Iron and steel industry (for further conversion to steel)

Fraction of total mass (%)	Rate for grade		
	P1	P2	PL2
Silicon	Over 0.5 up to 0.9 inclusive	Up to 0.5 inclusive	Over 0.5 up to 0.9 inclusive
Manganese, Group			
I	Up to 0.5 inclusive	Up to 0.5 inclusive	Up to 0.3 inclusive
II	Over 0.5 up to 1.0 inclusive	Over 0.5 up to 1.0 inclusive	Over 0.3 up to 0.5 inclusive
III	Over 1.0 up to 1.5 inclusive	Over 1.0 up to 1.5 inclusive	Over 0.5 up to 0.9 inclusive
IV	-	-	Over 0.9 up to 1.5 inclusive
Phosphorus, Class (% , not more than)			
A	0.1	0.1	0.08
B	0.2	0.2	0.12
V	0.3	0.3	0.03
Sulphur, Category (% , not more than)			
I	0.01	0.01	0.01
II	0.02	0.02	0.02
III	0.03	0.03	0.03
IV	0.04	0.04	0.04
V	0.05	0.05	0.05