



Limited Liability Company  
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QUALITY CERTIFICATE NO. 15

EAC

**Liquefied hydrocarbon fuel gas for municipal consumption,  
grade butane technical (BT) according to GOST 20448.**

Designation of documents that establish requirements to products:

Liquefied hydrocarbon fuel gas for municipal consumption, butane technical grade (BT) according to GOST 20448.

OKPD 2 Code: 19.20.31.120 Date of manufacture: 29.12.2021

Place of sampling (according to GOST 14921) railway car No. 55201495

Batch size (mass): 40,920 kg

Batch number: No. 15

Name of the indicator	The norm of the indicator according to GOST 20448-2018 BT grade	Test result	Test method
1. Component content mass fraction, % - the sum of methane, ethane and ethylene, mass fraction, - the amount of propane and propylene, mass fraction, - the amount of butanes and butylenes, mass fraction	Not standardized, Definition required Not standardized, Definition required minimum 60.0	0.05 0.15 99.78	GOST 10679
2. The content of hydrogen sulfide and mercaptan sulfur - mass fraction, % including hydrogen sulfide	Maximum 0.013 Minimum 0.003	0.0069 less than 0.0002	GOST 22985
3. Saturated vapor pressure, excessive, MPA, at a temperature of plus 45°C, max	maximum 1.6	0.37	GOST 28656
4. Volume fraction of liquid residue at 20°C, %, max	1.8	Absence	item 9.2 and Attachment B to GOST 20448
5. Free water and alkali content	Absence	Absence	item 9.2 and Attachment B to GOST 20448
6. Odor intensity, points, minimum	3	3	GOST 22387.5

**Note: 1.** The gas is odorized.

2. It is allowed not to determine the intensity of the odor at the mass fraction of mercaptan sulfur in liquefied gas 0.002% (20 ppm) and more. If the mass fraction of mercaptan sulfur is less than 0.002% or the odor intensity is less than 3 points, the liquefied gases must be odorized in accordance with the established procedure.

3. The division of saturated vapors of liquefied gases at a temperature of minus 20 ° C is determined only in winter.

**Conclusion:** Liquefied hydrocarbon fuel gas for municipal consumption, butane technical grade (BT) complies with GOST 20448.

The warranty period of storage is 6 months from the date of shipment.

Product filling temperature (°C) - (+8)

The density of the product at the filling temperature (kg/m<sup>3</sup>) – 590

The density of the product at a temperature of +15 (°C), (kg/m<sup>3</sup>) – 582

Additional Information:

- mass fraction of methane+ethane, % 0.05  
- mass fraction of propane, % 0.15  
- mass fraction of isobutane % 8.28  
- mass fraction of n-butane, % 91.20  
- mass fraction of butylenes, % 0.30  
- mass fraction of pentanes, % 0.02

Chemical analysis laboratory assistant

\_\_\_\_\_/signature/\_\_\_\_ E.E. Tereshkova

Certificate issue date: 29.12.2021