

**PJSC UFAGEOSINTEZ**

450037, Russian Federation, Republic of Bashkortostan, Ufa

Quality Division

Laboratory for product quality control of petroleum hydrocarbon pyrolysis processes and pyrogas separation

Certificate of OSI № TSM RB.OSIPR.03475



**QUALITY CERTIFICATE No. 1-17**  
**Ethane fraction TU 0272-0272-022-00151638-99 with amendments 1-5**

|   |                                     |                    |              |
|---|-------------------------------------|--------------------|--------------|
| <b>Grade</b>  | Grade A                             | <b>OKPD 2 Code</b> | 19.20.32.190 |
| <b>Sampling date</b>  | 08.02.2022                          | <b>Net weight</b>  | 7.339 t      |
| <b>Test date</b>  | 08.02.2022                          |                    |              |
| <b>Sampling point</b>   | Bottom of column - process vessel 2 |                    |              |
| <b>Regulatory document, according to which the sample was taken</b> | GOST 31370                          |                    |              |

| Item No. | Indicator  | RD for test method | TU 0272-022-00151638-99 standard  | Analysis result           |
|----------|--|--------------------|---|---------------------------|
| 1        | Mass fraction of components:<br>- methane, %<br>- ethane, %<br>- propane, %<br>- total amount of hydrocarbons C <sub>4</sub> and above | GOST 14920-79      | no more than 2,0<br>no less than 95.0<br>no more than 3,0<br>not standardized | 0.0<br>97.4<br>0.2<br>0.4 |
| 2        | Mass fraction of CO <sub>2</sub> , %   | GOST 24975.1-2015  | no more than 0,02   | 0.00                      |
| 3        | Mass fraction of sulphur compounds expressed as sulphur, %   | GOST 22985-2017    | no more than 0,002  | not defined               |
| 4        | Mass fraction of hydrogen sulfide**, %   |                    |   | not determined            |

**Note:** \*- according to the Instruction for pumping of ethane fraction from PJSC Ufaorgsintez to Novoil production site of Bashneft-Novoil branch of PJSC Bashneft, № I-11-86-2020 LE 313/VPI-2-13-33-2020 dated 26.03.2020

\*\* - according to Note to paragraph 1.3 of TU 0272-022-00151638 with amendments 1-5, the content of sulfur compounds expressed as sulfur and hydrogen sulfide is allowed not to be determined

**Conclusion: the product meets the specifications of TU 0272-022-00151638-99 with amendments 1-5**

The products are manufactured in accordance with the Management systems certified for compliance with the specifications of: ISO 9001 2015 certificate No. 31100600 QM15. ISO 50001:2018 Certificate No. 31100600 EMSt18, ISO 14001:2015, Certificate № 31100600 UM15, ISO 45001:2018 Certificate No. 31100600 OHS18.

**Area of application:** ethane fraction is used as a pyrolysis and refrigerant feedstock and for other purposes.

**Fire and explosion hazard:** ethane fraction is a low-hazard (low-toxic) product with a specific distinctive odor, according to the health effect, it is classified as a substance of Class 4 Hazard according to GOST 12.1.007. Ethane fraction, according to GOST 12.1 044, is a fire and explosion hazardous flammable gas. Ethane fraction vapor is heavier than the air and can accumulate in low, unventilated areas in explosive concentrations.

**The rules for transportation:** ethane fraction should be transported by pipeline as required by "Recommendations for the construction and safe operation of process pipelines" and "Rules of intended use of equipment operating with high pressure"

**Storage rules:** ethane fraction cannot be stored

**5th grade chemical analyst** (power of attorney No. 27/22 dated 01.01.2022)

/signature/

M.I. Gracheva

L.S.

Date of certificate documentation  
09.02.2022

/ seal/ Public joint stock company "Ufaorgsintez" / \* Quality management division 3/2 /