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Joint Stock Company Angarsk Petrochemical Company
Legal address:
665800, Irkutsk region, Angarsk, Pervyi industrial area, block 63, bld. 2
Place of manufacture:
Irkutsk region, Angarsk city
e-mail: delo@anhk.rosneft.ru, tel. (3955) 578-404; 577-002

Certificate of Quality Management System ISO 9001:2015 No. 19.2132.026
Certificate validity period: until 14.11.2022
ISO/TS 29001:2010 No. 19.2140.026
Certificate validity period: until 14.11.2022

Testing Center - Quality Control Division, Joint Stock Company Angarsk Petrochemical Company
665830, Irkutsk region, Angarsk, territory of JSC Angarsk Petrochemical Company
e-mail: of61@anhk.rosneft.ru, Tel. (3955) 575-423

CERTIFICATE No. 328
A Grade C4 fraction raffinate

Designation of documents that establish requirements for products:
STO 05742746-011-2014 "C4 fraction raffinate. Specifications"
OKPD Code 2 19.20.32.119
Batch number: 328
Date of manufacture: 06.08.2020
Batch size (mass): 41.178 t
Sampling site (according to GOST 14921-2018): Tank No. E-15
Date of sampling: 06.08.2020
Test date: 06.08.2020

The certificate was issued on the basis of test results dated 06.08.2020 No. 2985-250102/PC

No.	Name of the indicator	Method method	Norm according to STO 05742746-011-2014	Actual value
1	Mass fraction of components, %:			
1.1	the amount of unsaturated hydrocarbons		maximum 80.0	39.2
1.2	the amount of C3 hydrocarbons	GOST 10679-2019	maximum 3.0	0.8
1.3	the amount of C5 hydrocarbons and higher	GOST 10679-2019	maximum 1.0	less than 0.1
1.4	the amount of C4 hydrocarbons	GOST 10679-2019	minimum 95.0	99.2
1.5	the amount of butylenes	GOST 10679-2019	minimum 30.0	38.8
1.6	n-butane	GOST 10679-2019	not standardized	31.2
1.7	isobutane	GOST 10679-2019	not standardized	29.2
1.8	butadiene - 1.3	GOST 10679-2019	maximum 0.2	Less than 0.005
1.9	the amount of methyl tert-butyl ether, methanol	MI-476-2011	maximum 0.05	Less than 0.010
2	Mass fraction of hydrogen sulfide and mercaptan sulfur, %	GOST 22985-2017	maximum 0.02	less than 0.0002
3	Free water and alkali content	GOST 20448-2018, item 9.2 and Appendix B	Absence	Absence

Conclusion: A Grade C4 fraction raffinate

Meets the requirements:

- STO 05742746-011-2014 "C4 fraction raffinate. Specifications"

Additional information:

- The indicators for items 1.3, 1.5, 2, 3 of the table are determined when shipped to the consumer of JSC GC Titan.
 - The indicator according to paragraph 1.2 of the table is normalized when shipped to the consumer of JSC "GC "Titan".
 - The indicator according to paragraph 3 of the table is not defective until 01.01.2021 for a set of statistical data.
- Transportation and storage - according to GOST 1510. The manufacturer guarantees that the quality of the C4 fraction raffinate meets the requirements of the organization's standard, provided that the consumer complies with the conditions of transportation and storage. The warranty period of storage is 3 months from the date of manufacture

Shift supervisor of the shop 20/23-71 PNK

S.A. Andrusenko

Stamp here

Certificate issue date: 06.08.2020

4205379+730297D

Rectangular stamp: / Accepted for shipment /

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**Appendix to Certificate No. 328 dated 06.08.2020
A Grade C4 fraction raffinate**

STO 05742746-011-2014 "C4 fraction raffinate. Specifications"

Item No.	Designation of a legislative act, regulatory document or set of rules	Information required for the product description		The actual value
		Name of the indicator	Testing method	
1	Tax Code of the Russian Federation, Article 181, sub-item 11	1. The aggregate state at 20 °C and a pressure of 760 mm Hg.	-	gaseous

Processing name

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Shift supervisor of the shop 20/23-71 PNK

S.A. Andrusenko