



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

ISO 9001:2015 Quality Management System Certificate No. 19.2132.026
 Certificate validity period: until 14.11.2022
 ISOATS 29001:2010 № 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. 5
High-pressure liquid carbon dioxide first grade

Certificate of Conformity No. ROSS RU.AH01 N00168
 Valid until 04.04.2022

Designation of documents that establish requirements for products:
 GOST 8050-85 "Carbon dioxide, gaseous and liquid Technical conditions"
 OKPD 2 Code 20.11.12.110
 Batch number: 5
 Date of manufacture 09.03.2021
 Batch size (mass): 0.480 t
 Sampling site (according to GOST 8050-85): Pipeline No. 10902
 Date of sampling: 09.03.2021
 Test date: 09.03.2021
 The certificate was issued on the basis of test results dated 09.03.2021 No. 985-250102/PC



| No. | Name of the indicator | Testing method | Norm according to GOST 8050-85 | Actual value |
|-----|---|-------------------------|---|--|
| 1 | Volume fraction of carbon dioxide (CC), % | GOST 8050-85 item 4.3 | minimum 99.5 | 99.9 |
| 2 | Volume fraction of carbon monoxide (CO) | GOST 8050-85 item 4.4 | Must withstand the tests according to item 4.4 | withstands the test according to item 4.4 |
| 3 | Mass concentration of mineral oils and mechanical impurities, mg/kg | GOST 8050-85 item 4.5.2 | maximum 0.1 | 0.10 |
| 4 | Hydrogen sulfide content | GOST 8050-85 item 4.6 | Must withstand the tests according to item 4.6 | withstands the test according to item 4.6 |
| 5 | Hydrochloric acid content | GOST 8050-85 item 4.7 | Must withstand the tests according to item 4.7 | withstands the test according to item 4.7 |
| 6 | The content of sulfurous and nitric acids and organic compounds (alcohols, esters, aldehydes and organic acids) | GOST 8050-85 item 4.8 | Must withstand the tests according to item 4.8 | withstands the test according to item 4.8 |
| 7 | Ammonia and ethanolamines content | GOST 8050-85 item 4.9 | Must withstand the tests according to item 4.9 | withstands the test according to item 4.9 |
| 8 | The presence of odor and taste | GOST 8050-85 item 4.10 | Must withstand the tests according to item 4.10 | withstands the test according to item 4.10 |
| 9 | Mass fraction of water, % | GOST 8050-85 item 4.11 | Must withstand the tests according to item 4.11 | withstands the test according to item 4.11 |
| 10 | Mass concentration of water vapor at a temperature of 20°C and a pressure of 101.3 kPa (760 mmHg), g/m ³ | GOST 8050-85 item 4.12 | maximum 0.184 | 0.095 |
| | which corresponds to the saturation temperature of carbon dioxide with water vapor at a pressure of 101.3 kPa (760 mmHg). | | | |
| | at temperature of 20 °C | GOST 8050-85 item 4.12 | maximum minus 34 | minus 40 |
| 11 | Presence of aromatic hydrocarbons | GOST 8050-85 item 4.13 | Must withstand the tests according to item 4.13 | withstands the test according to item 4.13 |

Conclusion: High-pressure liquid carbon dioxide first grade **meets the requirements:**
 - GOST 8050-85 "Carbon dioxide, gaseous and liquid. Specifications"

Additional Information:

Transportation and storage - according to GOST 8050. The manufacturer of JSC Angarsk Petrochemical Company guarantees compliance of high-pressure liquid carbon dioxide of the first grade with the requirements of GOST 8050, subject to the conditions of transportation and storage according to GOST 8050 for 2 years from the date of manufacture - safety data sheet No. 05742746.21.44899

Stamp here

Round stamp:
 / ANGARSK PETROCHEMICAL COMPANY JSC
 for certificates for products 3 /

Rectangular stamp:
 / Accepted for shipment
 by the Logistics Department of
 RN-TRANS JSC /

Head of the installation shop 12/44 /signature/ A.A. Zaborovsky

Certificate issue date: 09.03.2021





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Appendix to Certificate No. 5 dated 09.03.2021
High-pressure liquid carbon dioxide first grade
GOST 8050-85 "Carbon dioxide, gaseous and liquid. Specifications"

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

Head of the installation shop 12/44 /signature/ A.A. Zaborovsky