



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
 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: through 14.11.2022
 ISO/TS 29001:2010 No. 19.2140.026
 Certificate validity period: through 14.11.2022

Test 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

QUALITY PASSPORT No. 352
Anode grade petroleum coke
(TU 0258-080-99418673-2008 edition 2), grade "TU 0258-330-05742746-98"

Export

Documents establishing technical specifications for the products:

TU 0258-080-99418673-2008 "Anode coke. Specifications"

OKPD Code 2 19.20.42.110

Batch number: 352

Date of manufacture: 30.12.2021

Batch size (mass): 105.800 t

Sampling site (according to GOST 16799):

Warehouse No. NPP, shop 17/19, installation 21-10/3M

Date of sampling: 30.12.2021

Test date: 30.12.2021

The certificate was issued on the basis of: test results No. 9559-250103/PK dated 30.12.2021, test results No. 9529-250103/00 dated 28.12.2021, test results No. 9455-250103/00 dated 12/26/2021, test results dated 07.10.2021 No. 7453-250103/00, test results dated 26.12.2021 No. 9454-250103/00, test results dated 06.12.2021 No. 9014-250103/00



No.	Indicator description	Testing method	Norm according to TU 0258-080-99418673-2008	The actual value
1	Mass fraction of moisture, %, max	GOST 27588-91	3	9.8
2	Mass fraction of volatile substances, %	GOST 22898-78 cl. 4.9	not more than 10	9.2
3	Ash content, %	GOST 22692-77	not more than 0.6	0.16
4	Mass fraction of sulfur, %	GOST 1437-75	not more than 1.5	1.48
5	Mass fraction of small items (pieces smaller than 8 mm), %	GOST 22898-78 cl. 4.3	not more than 50	49.9
6	Actual density after ignition at 1,300 °C for 5 hours, g/cm ³	GOST 22898-78 cl. 4.4	2.08–2.15	2.12
7	Mass fraction, %:	GOST 22898-78 cl. 4.6		
	Silicon		not more than 0.08	0.041
	Ferrum		not more than 0.08	0.013
	Vanadium		not more than 0.015**	0.0158
	Indicators of quality of calcinated anode blocks:			
1	Volume density, kg/dm ³	TU 48-5-148 [1]	1.50-1.62	-
2	Remaining sample in the reaction in CO ₂ flow (CRR), %	ISO 12988-1-2017 [2]	75.0-96.0	-
3	Residue of the sample in the reaction in air flow (ARR), %	ISO 12988-1-2017 [3]	55.0-95.0	-
4	Electrical resistivity, μOhm m	GOST 23776-79	51.0-74.0	-
	Quality indicators of calcinated Soderberg mass samples*			
1	Ultimate compressive strength, MPa	STE 03.04.09-2012 (TU method 48-5-80-86)	no less than 30	32*
2	Total destructibility in CO ₂ flow, mg/cm ² h	STE 03.04.09-2012 (TU method 48-5-80-86)	no more than 40	17*
3	Electrical resistivity, μOhm m	STE 03.04.09-2012 (TU method 48-5-80-86)	no more than 80	75*

Conclusion: Petroleum anode coke (TU 0258-080-99418673-2008 edition 2), grade "TU 0258-330-05742746-98" **complies with the requirements:** - TU 0258-080-99418673-2008 "Anode coke. Specifications"

Continuation of certificate No. 352 dated 30.12.2021

Additional Information:

* Tests of fired anode blocks, fired samples of the Soderberg mass were carried out in the UAM DAM laboratory of JSC RUSAL Bratsk, test report No. 9 dated October 28, 2021.

** - the norm "no more than 0.0200%" letter No. C3-73-43551-21 dated November 23, 2021

Transportation and storage - according to GOST 1510. **The manufacturer JSC ANKHK** guarantees that the quality of petroleum anode coke (TU 0258-080-99418673-2008 edition 2), brand "TU 0258-330-05742746-98" meets the requirements of TU 0258-080-99418673-2008 subject to the conditions of acceptance, transportation and storage in accordance with GOST 1510 for 5 years from the date of manufacture.

- safety data sheet No. 05742746.19.57260.

Open railroad freight cars No.
52873452, 60100815

To whom it is sent
Jilin Province Northeast Asia Railway Corporation Railway
Transportation Co., Ltd. /

Process Unit Operator of the Workshop 17/19 _____ /signature/ _____ Buinov D.A.

Certificate issue date: 30.12.2021

L.S.

Accepted for shipment by the
Logistics Support Department
RN-TRANS JSC

/ barcode/

/ seal/ for product certificates 7 * JSC Angarsk
Petrochemical Company *For products quality
certificates*