Testing laboratory no. 1152.1, accredited by Czech Accreditation Institute in accordance with ČSN EN ISO/IEC 17025:2018

LABORATORY REPORT NO. 02295

Client#	**VIF, s.r.o.** **Volutová 2523, 15800 Praha 5 - Stodůlky**
Sample no.	02295
SGS order	3666
Product#	**diesel fuel**
Sample specification#	**Socar Petroleum / VIF Azerbaijan MMC**
Sample quantity	11,0 liter
Sampling date§	--
Sampling place§	**-**
Sampled by	Sampled by client
Sampling within scope of accreditation - method	Sampling out of accreditation range
Submitter	client
Sample reception date	18.03.2024
Report approval date	21.03.2024
Report issued by	Šárka Jančová

Issue date: 21.03.2024

Approved by: Šárka Jančová
Metrologist

The results shown in this laboratory report specifically refer to the sample tested. If laboratory is not responsible for sampling results specifically refer to the sample as received. All tests have been performed using the latest revision of the methods indicated, unless specifically marked otherwise on the report. Precision parameters apply in the determination of the above results. Users of the data shown on this report should refer to the latest published revisions of ASTM D-3244, IP 367, ČSN EN ISO 4259-1 a ČSN EN ISO 4259-2. This Test Report is issued under the Company's General Conditions of Service (copy available upon request or on the company website at http://www.sgsgroup.cz/cs-CZ/Terms-and-Conditions.aspx). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues defined therein. This report shall not be reproduced except in full, without the written approval of the laboratory.

Tests out of the accreditation range are identified by a code explained bellow the table of results.

Information marked with the symbol „#" is provided by the client and the testing laboratory no. 1152.1 is not responsible for them. If sampling is not held by SGS employee, information marked with symbol „§"is provided by the client and the testing laboratory no. 1152.1 is not responsible for them.

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Code	Test descriptions or parameters	Unit	Result	Date of test	Testing method
11	Sulfur	mg/kg	**18,5**	20.03.2024	SOP 101 - method A (ČSN EN ISO 20846)
12	Lubricity HFRR	µm	**420**	20.03.2024	SOP 148 (ČSN EN ISO 12156-1 - method A)
	x axis wear scar	µm	**460**		
	y axis wear scar	µm	**370**		
11	Distillation - Diesel			19.03.2024	SOP 26 (ČSN EN ISO 3405)
	Initial boiling point	°C	**174,9**		
	Recovered volume at 250 °C	% V/V	**25,7**		
	Recovered volume at 350 °C	% V/V	**93,9**		
	Recovered volume at 360 °C	% V/V	**96,1**		
	95% (V/V) recovered	°C	**355,1**		
	Total recovery	% V/V	**98,2**		
	Final boiling point	°C	**366,4**		
11	Fatty acid methyl ester (FAME)	% V/V	**<0,30**	19.03.2024	SOP 91 (ČSN EN 14078)
12	Oxidation stability of diesel fuel			20.03.2024	SOP 111 (ČSN EN ISO 12205)
	total insolubles	g/m^3	**4**		
21	2-ethylhexyl nitrate	µl/l	**40**	19.03.2024	SOP 66 (IR method)
12	Cetane number on engine		**54,4**	20.03.2024	SOP 104 (ČSN EN ISO 5165, ASTM D613)
11	Polyaromatic hydrocarbons	% m/m	**1,1**	20.03.2024	SOP 105 (ČSN EN 12916+A1)

First digit describes whether the test was performed within the accreditation range of the testing laboratory 1152.1: 1 = test within the scope of accreditation; 2 = test outside the scope of accreditation. Second digit represents the testing location: 1=Prague laboratory, U Trati 42, Prague 10; 2=Kolín laboratory, Ovčárecká 314, Kolín 5; 9=outside contractor

(*f*) *– test procedure changed within the flexible scope of accreditation*

Notes and deviations	12 Lubricity (HFRR) initial temperature 22,5 °C final temperature 24,0 °C initial relative humidity 51,3 % RH final relative humidity 53,3 % RH reference fluid A (390 - 470 µm) 410µm 17.1.2024 reference fluid B (540 - 670 µm) 610 µm 17.1.2024

Testing method	Commentary
SOP 101 - method A (ČSN EN ISO 20846)	UV detection analyzer, extended measurement uncertainty - 0,5 mg/kg + 6% of result value.
SOP 148 (ČSN EN ISO 12156-1 - method A)	High frequency reciprocating rig device, evaluation by method "A". Determination at 60 °C for diesel and laboratory temperature for gasoline. Extended measurement uncertainty 10 µm.
SOP 26 (ČSN EN ISO 3405)	Extended measurement uncertainty is 4 °C and 2 %V/V.
SOP 91 (ČSN EN 14078)	Infrared spectrometry, extended measurement uncertainty 0,2%V/V.
SOP 111 (ČSN EN ISO 12205)	Oxidation apparatus with gravimetric evaluation of generated deposits, 16 h at 95 °C, 3 L oxygen/h, filter 0,8 µm. Extended measurement uncertainty - 0,24 g/m^3.
SOP 66 (IR method)	Infrared spectrometry
SOP 104 (ČSN EN ISO 5165, ASTM D613)	Testing engine Waukesha CFR F-5, extended measurement uncertainty - 1 unit of cetane number. For the test were used reference fuels U-32 and T-32.
SOP 105 (ČSN EN 12916+A1)	HPLC, extended measurement uncertainty - 14 % of result value.

Extended measurement uncertainty is a product of standard measurement uncertainty and an extension coefficient k=2 which corresponds to about 95% coverage probability for standard distribution

- END OF LABORATORY REPORT -