

ANALYTICAL REPORT No: 0761-LQ-14

Client SIBUR International GmbH
S-Peterburg № 7652-0488-14/2
Date of report 30.07.2014
Object ZAO "Sibur-Khimprom"
Location s. Perm

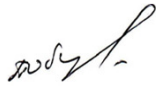
Product : Heavy pyrolysis resin ¹			Received On: 23.07.2014		
Sample Drawn : Sample is selected and provided customer representative.					
Sample Description : Dark-colored product which is liquid at room temperature					
Testing Performed By: Intertek S-Petersburg Laboratory			Date: 23÷30.07.2014		
Tests	Units	Method ²	Specification limits	Result	Result Within Specification?
Density at 15 deg C	kg/l	ASTM D 4052	unknown	1.0062	—
Density at 20 deg C	kg/l	ASTM D 4052	unknown	1.0022	—
Kinematic Viscosity at 50°C	mm ² /s	ASTM D 445	unknown	8.481	—
Viscosity assumed (Engler) at 50°C	° E	conversion	unknown	1.70	—
Kinematic Viscosity at 100°C	mm ² /s	ASTM D 445	unknown	2.951	—
Viscosity assumed (Engler) at 100°C	° E	conversion	unknown	1.21	—
Sulphur content	%mass	ASTM D 4294	unknown	0.02	—
Flash Point, closed Cup	° C	ASTM D 93	unknown	21	—
Water content	%mass	ASTM D 95	unknown	Less 0.05	—
Pour Point (upper)	° C	ASTM D 97	unknown	below minus 42	—
Total Nitrogen	%mass	ASTM D 3228	unknown	0.008	—
Aniline Point (mixed)	° C	ASTM D 611 (B)	unknown	27.0	—
Conradson carbon Residue (CCR)	%mass	ASTM D 189	unknown	5.10	—
Vacuum Distillation (50 - 30 mm Hg):		ASTM D 1160			
Initial boiling point	° C	mod.	unknown	140	—
5% vol recovered	° C		unknown	166	—
10% vol recovered	° C		unknown	180	—
20% vol recovered	° C		unknown	216	—
30% vol recovered	° C		unknown	247	—
40% vol recovered	° C		unknown	269	—
50% vol recovered	° C		unknown	290	—
60% vol recovered	° C		unknown	311	—
70% vol recovered	° C		unknown	331	—
80% vol recovered	° C		unknown	360	—
90% vol recovered	° C		unknown	417	—
95% vol recovered	° C		unknown	473	—
Final Boiling Point /cracking	° C		unknown	473	—
Loss	%vol		unknown	1.0	—
Residue	%vol		unknown	4.0	—
Recovered at 360 °C	% vol	ASTM D 1160 mod.	unknown	80	—
Bromine number(cut 360 °C)	gBr/100g	ASTM D 1159	unknown	75.5	—
Saturated, aromatic and polar compounds		IP 469			
Saturated hydrocarbons	%mass			less 5.0 (4.4)	—
Aromatics hydrocarbons	%mass			40.1	—
Polar compounds I	%mass			50.6	—
Polar compounds II	%mass			4.9	—
Toluene equivalent		EXXON	unknown	0	—
Xylene equivalent		BP 230	unknown	0	—

Tests	Units	Method ²	Specification limits	Result	Result Within Specification?
P-value		SMS 1600	unknown	more 5	–
Hot Filtration potential	% (m/m)	IP 390(A)/IP 375	unknown	0.02	–
Metals:					
Vanadium	mg/kg	IP 470	unknown	3	–
Sodium	mg/kg	IP 470	unknown	9	–
Nickel	mg/kg	IP 470	unknown	less 1(0.4)	–
Aluminium	mg/kg	IP 470	unknown	less 5 (1)	–
Silicon	mg/kg	IP 470	unknown	less 10 (3)	–
Iron	mg/kg	IP 470	unknown	5	–
Zinc	mg/kg	IP 470	unknown	less 1(0.2)	–
Calcium	mg/kg	IP 470	unknown	5	–
Colour ASTM (dilution)		ASTM D 1500	unknown	D 8 ASTM Color	–
Asphaltenes	%mass	IP 143	unknown	0.82	–

Note 1 This product is not included in the Scope of accreditation laboratory.

Note2. All these methods are intended to record for analysis of residual oil. Sample testing is proposed for petrochemicals. Thus, the results can not be interpreted as the results obtained in the framework of the above methods. Terms perform some tests had to pick from the properties of the product.

LABORATORY MANAGER: P.Obukhova




St. Petersburg LABORATORY

This Analytical Report applies only to the samples tested.

This Analytical Report may not be partially or fully copied or reprinted without the permission of Intertek Testing Laboratory St. Peterst