



JOINT-STOCK COMPANY
«YAROSLAVSKIY TEKHNICHESKIY
UGLEROD named after V.U. ORLOV»



CERTIFICATE OF ANALYSIS

This certificate is issued by the manufacturer JSC "YAROSLAVSKIY TEKHNICHESKIY UGLEROD named after V.U. ORLOV", Yaroslavl, Russian Federation.

LETTER OF CREDIT NUMBER 0673MDC180012693

ITEM: CARBON BLACK GRADE N-330
CONTAINER NO: CMAU7445944
BATCH NO: 10686

Quality characteristics of goods:

PROPERTY	Limits	Actual	ASTM test method
Iodine adsorption number, g/kg	82+/-5	83.0	D 1510
Oil absorption number, cm ³ /100g	102+/-5	101.9	D 2414
CTAB surface area, m ² /g	82+/-5	80.4	D 3765
Sieve residue 45 µm (No.325), %,max	0.1	0.032	D 1514
Sieve residue 500 µm (No.35) %, max	0.001	0.0000	D 1514
Heating loss, %, max	1.0	0.23	D 1509
Ash content, %, max	0.75	0.31	D 1506
Pour density, kg/m ³	380+/-25	391	D 1513
Fines content, %, max	7.0	3.8	D 1508
Tint strength	104+/-5	103.2	D 3265
Manufacturing date		01/12/2018	

ITEM: CARBON BLACK GRADE N-550
CONTAINER NO: TLLU4919466
BATCH NO: 9/7414

Quality characteristics of goods:

PROPERTY	Limits	Actual	ASTM test method
Iodine adsorption number, g/kg	43+/-5	43.6	D 1510
Oil absorption number, cm ³ /100g	121+/-5	120.9	D 2414
CTAB surface area, m ² /g	42+/-5	42.7	D 3765
Sieve residue 45 µm (No.325), %,max	0.1	0.014	D 1514
Sieve residue 500 µm (No.35) %, max	0.001	0.0000	D 1514
Heating loss, %, max	1.0	0.20	D 1509
Ash content, %, max	0.75	0.35	D 1506
Pour density, kg/m ³	360+/-25	365	D 1513
Fines content, %, max	7.0	2.8	D 1508
Ph value	7-10	9.3	D 1512
Manufacturing date		21/11/2018	

ITEM: CARBON BLACK GRADE N-660
CONTAINER NO: CRSU9001093
BATCH NO: 011536

Quality characteristics of goods:

PROPERTY	Limits	Actual	ASTM test method
Iodine adsorption number, g/kg	36+/-5	35.0	D 1510
Oil absorption number, cm ³ /100g	90+/-5	89.7	D 2414
CTAB surface area, m ² /g	36+/-5	37.5	D 3765
Sieve residue 45 µm (No.325), %,max	0.1	0.019	D 1514
Sieve residue 500 µm (No.35) %, max	0.001	0.0000	D 1514
Heating loss, %, max	1.0	0.26	D 1509
Ash content, %, max	0.75	0.44	D 1506
Pour density, kg/m ³	440+/-25	436	D 1513
Fines content, %, max	7.0	2.2	D 1508
Manufacturing date		28/11/2018	

NET WEIGHT: 58500.00 KGS
GROSS WEIGHT: 60522.00 KGS
NO OF PACKAGES: 2340 BAGS

Authorized signatory: