

QC: 0535

CERTIFICATE OF QUALITY

VESSEL : NORTHERN DISCOVERY
GRADE : CARBON BLACK N220
CERT. NO. : 168 / 2019
BATCH NO. : 210519/001
BAG NO. : 17-05-19-T2-S6-N220-J1000B-016~J1000B-022 & 17-05-19-T2-S5-N220-J1000B-001~J1000B-006
 18-05-19-T2-S7-N220-J1000B-001~J1000B-030 & 19-05-19-T1-S7-N220-J0500B-001
 19-05-19-T1-S7-N220-J1000B-001~J1000B-011 & 20-05-19-T1-S7-N220-J1000B-001~J1000B-005
B/L DATE : 13 / 11 / 2019

TESTS	UNIT	METHOD	RESULT
Iodine Adsorption Number	g/kg	ASTM D1510	119.5
Mean Particle Size	nm	ASTM D3849	≤20
Oil Absorption Number	cm ³ /100 g	ASTM D2414	99.1
Sieve Residue (No. 325 Sieve)	mg/kg	ASTM D1514	12
Pour Density	kg/m ³	ASTM D1513	386
Fines Content	wt. %	ASTM D1508	7.2
Heating Loss, Sample collected at dryer outlet	wt. %	ASTM D1509	0.4
Toluene Discoloration Value	%	ASTM D1618	98.6
Tint Strength	%ITRB	ASTM D3265	119.0
Sulfur	wt. %	ASTM D1619	0.08
Pelleted-Mass Strength	lbf	ASTM D1937	5
Ash	%	ASTM D1506	0.06
Density @ 23°C	Mg/m ³	ASTM D1817	2.02
Nitrogen Surface Area (NSA)	m ² /g	ASTM D6556	107.4
Iron	mg/kg	ASTM D5600	16

Barakeep
 intertek
 Chemist - 3
 For Witnessing Only

Vijai Arun
 Section Leader, Laboratory - CBDC

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QC: 0536

CERTIFICATE OF QUALITY

VESSEL : NORTHERN DISCOVERY
 GRADE : CARBON BLACK N220
 CERT. NO. : 172 / 2019
 BATCH NO. : 230519/003
 BAG NO. : 18-05-19-T2-S6-N220-J1000B-001~J1000B-005 & 20-05-19-T1-S7-N220-J1000B-006~J1000B-011
 21-05-19-T2-S6-N220-J1000B-001~J1000B-009 & 22-05-19-T2-S6-N220-J1000B-001~J1000B-002

B/L DATE : 13 / 11 / 2019

TESTS	UNIT	METHOD	RESULT
Iodine Adsorption Number	g/kg	ASTM D1510	119.0
Mean Particle Size	nm	ASTM D3849	≤20
Oil Absorption Number	cm ³ /100 g	ASTM D2414	97.7
Sieve Residue (No. 325 Sieve)	mg/kg	ASTM D1514	15
Pour Density	kg/m ³	ASTM D1513	384
Fines Content	wt. %	ASTM D1508	7.8
Heating Loss, Sample collected at dryer outlet	wt. %	ASTM D1509	0.4
Toluene Discoloration Value	%	ASTM D1618	99.1
Tint Strength	%ITRB	ASTM D3265	114.0
Sulfur	wt. %	ASTM D1619	0.08
Pelleted-Mass Strength	lbf	ASTM D1937	15
Ash	%	ASTM D1506	0.08
Density @ 23°C	Mg/m ³	ASTM D1817	1.98
Nitrogen Surface Area (NSA)	m ² /g	ASTM D6556	102.4
Iron	mg/kg	ASTM D5600	19

Sandkeep



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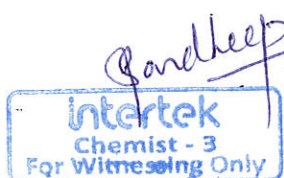
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QC: 0537

CERTIFICATE OF QUALITY

VESSEL : NORTHERN DISCOVERY
 GRADE : CARBON BLACK N220
 CERT. NO. : 178 / 2019
 BATCH NO. : 010619 / 002
 BAG NO. : 24-05-19-T2-S7-N220-J1000B-001~J1000B-003 & 26-05-19-T2-S6-N220-J1000B-001~J1000B-015
 26-05-19-T1-S3-N220-J0500B-001 & 26-05-19-T1-S3-N220-J1000B-009~J1000B-013
 27-05-19-T1-S3-N220-J1000B-001~J1000B-031 & 28-05-19-T1-S3-N220-J1000B-001~J1000B-005
 B/L DATE : 13 / 11 / 2019

TESTS	UNIT	METHOD	RESULT
Iodine Adsorption Number	g/kg	ASTM D1510	118.3
Mean Particle Size	nm	ASTM D3849	≤20
Oil Absorption Number	cm ³ /100 g	ASTM D2414	99.7
Sieve Residue (No. 325 Sieve)	mg/kg	ASTM D1514	14
Pour Density	kg/m ³	ASTM D1513	381
Fines Content	wt. %	ASTM D1508	5.8
Heating Loss, Sample collected at dryer outlet	wt. %	ASTM D1509	0.4
Toluene Discoloration Value	%	ASTM D1618	99.1
Tint Strength	%ITRB	ASTM D3265	114.0
Sulfur	wt. %	ASTM D1619	0.06
Pelleted-Mass Strength	lbf	ASTM D1937	10
Ash	%	ASTM D1506	0.07
Density @ 23°C	Mg/m ³	ASTM D1817	1.99
Nitrogen Surface Area (NSA)	m ² /g	ASTM D6556	104.0
Iron	mg/kg	ASTM D5600	10




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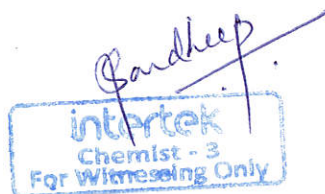
QC: 0538


CERTIFICATE OF QUALITY

VESSEL : NORTHERN DISCOVERY
 GRADE : CARBON BLACK N220
 CERT. NO. : 180 / 2019
 BATCH NO. : 020619 / 001
 BAG NO. : 30-05-19-T1-S3-N220-J1000B-001~J1000B-004 & 30-05-19-T1-S7-N220-J1000B-001~J1000B-025
 31-05-19-T1-S7-N220-J1000B-001~J1000B-030 & 01-06-19-T1-S7-N220-J1000B-001

B/L DATE : 13 / 11 / 2019

TESTS	UNIT	METHOD	RESULT
Iodine Adsorption Number	g/kg	ASTM D1510	123.9
Mean Particle Size	nm	ASTM D3849	≤20
Oil Absorption Number	cm ³ /100 g	ASTM D2414	99.3
Sieve Residue (No. 325 Sieve)	mg/kg	ASTM D1514	17
Pour Density	kg/m ³	ASTM D1513	372
Fines Content	wt. %	ASTM D1508	5.8
Heating Loss, Sample collected at dryer outlet	wt. %	ASTM D1509	0.4
Toluene Discoloration Value	%	ASTM D1618	99.5
Tint Strength	%ITRB	ASTM D3265	116.0
Sulfur	wt. %	ASTM D1619	0.08
Pelleted-Mass Strength	lbf	ASTM D1937	5
Ash	%	ASTM D1506	0.09
Density @ 23°C	Mg/m ³	ASTM D1817	2.01
Nitrogen Surface Area (NSA)	m ² /g	ASTM D6556	108.0
Iron	mg/kg	ASTM D5600	15




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