

COTECNA TEST CERTIFICATE – QUALITY TEST REPORT 26th April 2023.

The results of the analysis carried out on the sample presented to us by the Client are presented below:

Reports of Analysis SN	TEST PARAMETERS/ UNITS	RESULTS FOUND	Uc	LoD	TEST METHODS	NIS 1125:2019 Specifications
1	Appearance	Flakes	-	-	Visually	Flakes
2	Colour	Monotonous	-	-	Visually	Monotonous or transparent
3	Particle size, mm	11.75	0.06	0.01	ASTM F1877-16	10.00 ± 2.00
4	PET Dust, %	0.00	-	-	ASTM D4532-5	Less than 0.100
5	Intrinsic viscosity, dl/g	0.82	-	0.10	ISO 1628-5	0.74 – 0.84
6	Moisture content, %	0.30	-	0.0001	ISO 12418-2	0.20 (maximum)
7	Acetaldehyde, ppm	1.10	-	0.0001	ASTM D 5842-2	4.00 (maximum)
8	Contamination due to polyvinyl chloride (PVC), ppm	0.00	-	0.01	ISO 12418-2	5.00 (maximum)
9	Contamination due to polyolefins (including adhesives), ppm	0.00	-	0.01	ISO 12418-2	50.00 (maximum)
10	PET Fines, %	Less than 0.01	-	0.01	ASTM D4532-5	Not Stated
11	Contamination due to labels/paper, ppm	0.00	-	0.01	ISO 12418-2	1000.00 (maximum)
12	Ph (10% aqueous extract)	5.59	0.05	0.001	APHA 4500-11:B	Not Stated
13	Brown/yellow flakes, ppm	0.00	-	0.001	Physical	5.00 (maximum)
14	Flakes with glue, ppm	0.00	-	0.01	Physical	5.00 (maximum)
15	Bulk density	357.80	1.80	0.001	Physical	Not Stated
Metals:						
16	Aluminium, /kg	0.00	-	0.01	ISO 12418-2	5.00 (maximum)
17	Steel, /kg	0.00	-	0.01	ISO 12418-2	5.00 (maximum)
18	Residual ethylene or propylene monomer content, mg/kg	0.0000	-	0.0001	ASTM D5227-13	1.00 (maximum)
19	Overall migration (in food stimulant)	0.200	0.001	0.0001	NIS 801:2017	10.00 (maximum)
Restricted additives:						
20	c. Octadecyl -3,5-ditert-butyl-4-hydroxyphenyl ester (antioxidant), mg/kg	0.0000	-	0.0001	GC-FID	6.00
21	d. N,N bis-2-hydroxyethylamine, mg/kg	0.0000	-	0.0001	GC-FID	1.20
22	Terrephthalic acid, mg/kg	0.30	-	0.0001	HPLC	7.50 (maximum)
23	Isophthalic acid, mg/kg	0.24	-	0.0001	HPLC	5.00 (maximum)
24	Dimethyl Ester, mg/kg	0.0000	-	0.0001	GC-FID	0.05 (maximum)

25	Ethylene glycol (EG), mg/kg	0.976	-	0.0001	GC-FID	30.00 (maximum)
26	Diethylene glycol (DEG), mg/kg	0.697	-	0.0001	GC-FID	30.00 (maximum)

NOTE: Uc = Uncertainty which was calculated according to the value of the standard deviation multiplied by coverage factor of K=2 to get a confidence level of 95% approximately, according to the requirement of accreditation standards. The customer is responsible for the sampling, the validity of the data may be impaired by a non-representative sample.

Remarks: Except for the moisture content that is high, all other parameters complied with Nigeria Industrial Standard, NIS 1125:2019 quality specification for recycled polyethylene therephthalate (r PET) bottle for food contact application in respect of the above tests.

COTECNA VERIFICATION NIGERIA LIMITED