

TEST REPORT

KOTITI NO. : 1614000050
APPLICANT : KOLON PLASTIC CO., LTD.
DATE IN : January 08, 2016
DATE OUT : January 15, 2016

Sample Description	KN3311, KN331F, KN3311W, KN3311T, KN3311BL, KN3311BLK, KN333HRN
Sample Quantity	One (1) Sample(s)
Color(s) Submitted	Not Submitted
Buyer	Not Submitted
Item Number	Not Submitted
Material	NYLON
Testing Period	January 08, 2016 ~ January 15, 2016
Test Result	For further details, please refer to the following page(s).

AUTHORIZED by :

Young R. Kim

DR. YOUNG RYUL KIM / PRESIDENT

REMARK: SEE ENCLOSED WORKSHEET(S) RESULT

Contact information for technical questions and general inquiries.

· Prepared by :	Hyun min Lee	(822) 3451 7183	hm_lee@kotiti.re.kr
· Primary contact :	Jung hyun Lee	(822) 3451 7113	jhlee@kotiti.re.kr
· Back-up :	Jae hak Jung	(822) 3451 7194	jh_jung@kotiti.re.kr

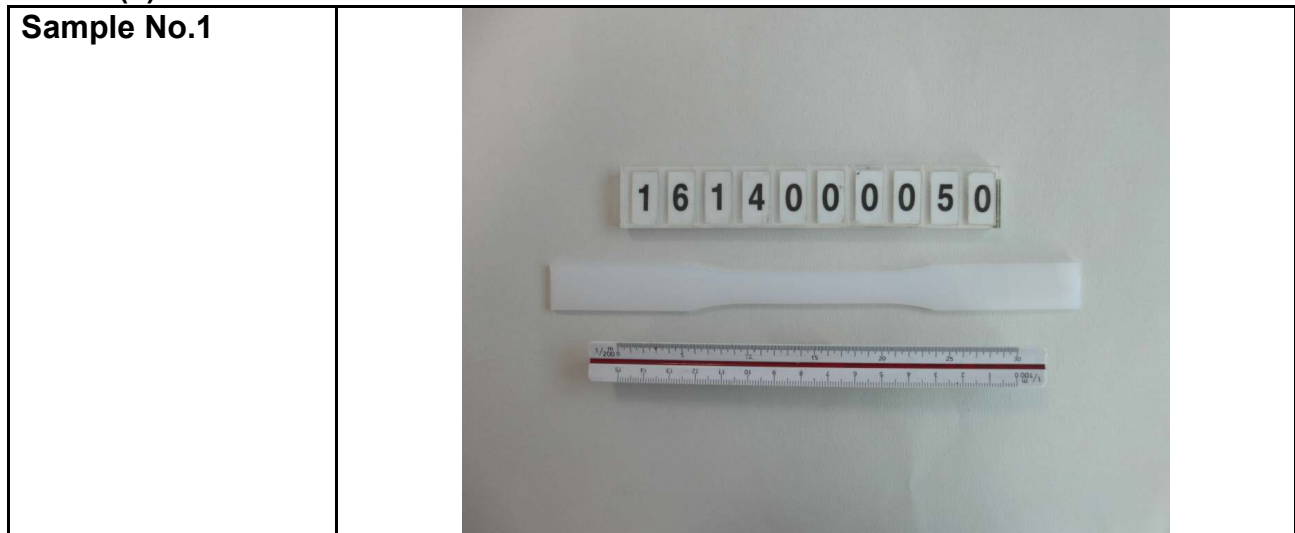
Tested Sample List:		
Sample No.	Sample Description	Material
1	KN3311, KN331F, KN3311W, KN3311T, KN3311BL, KN3311BLK, KN333HRN	NYLON

Restriction of Hazardous Substances (EU Directive 2011/65/EU), Unit: mg/kg		
Test Item(s)	RL	Sample No.
		1
Lead (Pb)	5	N.D.
Mercury (Hg)	2	N.D.
Cadmium (Cd)	2	N.D.
Hexavalent Chromium (Cr ⁶⁺)	1	N.D.

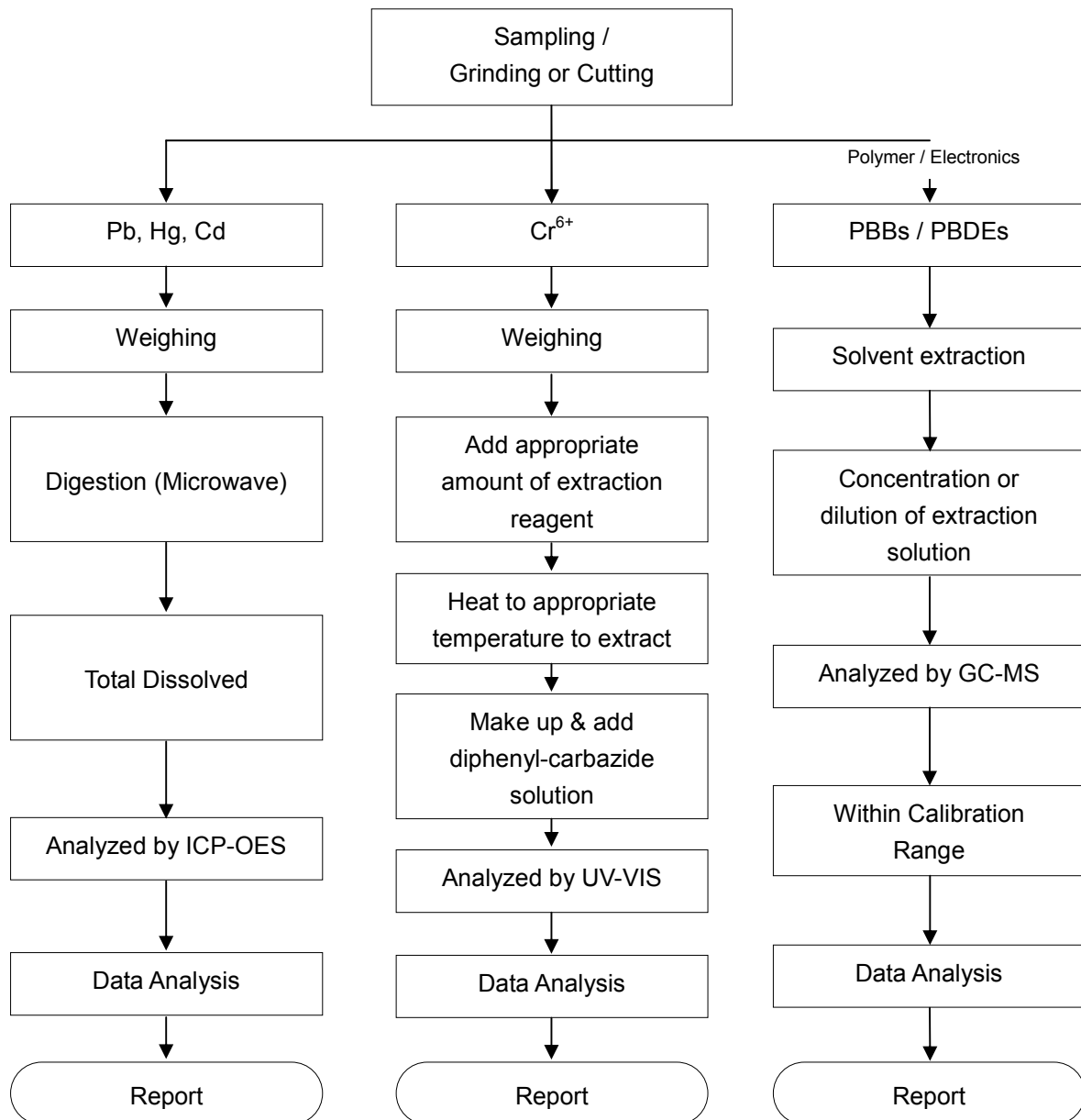
Test Item(s)	CAS-No.	RL	Sample No.
			1
Polybrominated Biphenyls (PBBs)			
Bromobiphenyl	92-66-0	5	N.D.
Dibromobiphenyl	92-86-4	5	N.D.
Tribromobiphenyl	59080-36-3	5	N.D.
Tetrabromobiphenyl	60044-24-8	5	N.D.
Pentabromobiphenyl	59080-39-6	5	N.D.
Hexabromobiphenyl	59080-40-9	5	N.D.
Heptabromobiphenyl	88700-06-5	5	N.D.
Octabromobiphenyl	32536-52-0	5	N.D.
Nonabromobiphenyl	248-637-5	5	N.D.
Decabromobiphenyl	13654-09-6	5	N.D.
Sum of PBBs	-	-	N.D.
Polybrominated Diphenyl Ethers (PBDEs)			
Bromodiphenyl ether	101-55-3	5	N.D.
Dibromodiphenyl ether	2050-47-7	5	N.D.
Tribromodiphenyl ether	41318-75-6	5	N.D.
Tetrabromodiphenyl ether	5436-43-1	5	N.D.
Pentabromodiphenyl ether	60348-60-9	5	N.D.
Hexabromodiphenyl ether	207122-15-4	5	N.D.
Heptabromodiphenyl ether	189084-67-1	5	N.D.
Octabromodiphenyl ether	337513-72-1	5	N.D.
Nonabromodiphenyl ether	63936-56-1	5	N.D.
Decabromodiphenyl ether	1163-19-5	5	N.D.
Sum of PBDEs	-	-	N.D.

Remark 1) N.D. : Not Detected [< RL(Report Limit)]
2) N.A. : Not Applicable
3) Requirement : Pb, Hg, Cr⁶⁺, PBBs, PBDEs <1000 mg/kg
Cd <100 mg/kg

Test Method 1) IEC 62321-5:2013 by acid digestion and determined by ICP-OES (Pb, Cd)
2) IEC 62321-4:2013 by acid digestion and determined by ICP-OES (Hg)
3) IEC 62321:2008 (Annex C) by alkaline digestion and determined by UV-VIS (Cr⁶⁺)
4) IEC 62321:2008 (Annex B) by boiling water extraction and determined by UV-VIS (Cr⁶⁺)
5) IEC 62321:2008 (Annex A) by solvent extraction and determined by GC-MS (PBBs, PBDEs)

Picture(s)

Flow Chart

1. RoHS (Pb, Hg, Cd, Cr⁶⁺, PBBs/PBDEs)

Material	Digestion Acid
Polymers	HNO ₃ , HCl, HF, H ₂ O ₂ , H ₂ SO ₄ , etc.
Metals	HNO ₃ , HCl
Electronics	HNO ₃ , HCl, HF, H ₂ O ₂ , H ₂ SO ₄ , etc.