

# TEST REPORT

**KOTITI NO. : 1614000042**  
**APPLICANT : KOLON PLASTIC CO., LTD.**  
**DATE IN : January 08, 2016**  
**DATE OUT : January 15, 2016**

<b>Sample Description</b>	KN333G5, KN333G15, KN333G20, KN333G25, KN333G30, KN333G33, KN333G45,KN333G50 KN333G30HS, , KN333G35HS, KN333G33BL, KN333G15BL, KN333G15BU, KN333G30BU, KN333G15BLWR, KN333G20BL, KN333G25BL, KN333G33BL1, KN333G30BL, KN333G30BL1, KN333G30BLS, KN333G30GR, KN333G30DG, KN333G40BL, KN333G50BL, KN333G45WBL
<b>Sample Quantity</b>	One (1) Sample(s)
<b>Color(s) Submitted</b>	Not Submitted
<b>Buyer</b>	Not Submitted
<b>Item Number</b>	Not Submitted
<b>Material</b>	NYLON
<b>Testing Period</b>	January 08, 2016 ~ January 15, 2016
<b>Test Result</b>	<b>For further details, please refer to the following page(s).</b>

**AUTHORIZED by :**

*Young R. Kim*

**DR. YOUNG RYUL KIM / PRESIDENT**

REMARK: SEE ENCLOSED WORKSHEET(S) RESULT

**Contact information for technical questions and general inquiries.**

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<b>Tested Sample List:</b>		
<b>Sample No.</b>	<b>Sample Description</b>	<b>Material</b>
1	KN333G5, KN333G15, KN333G20, KN333G25, KN333G30, KN333G33, KN333G45, KN333G50, KN333G30HS, , KN333G35HS, KN333G33BL, KN333G15BL, KN333G15BU, KN333G30BU, KN333G15BLWR, KN333G20BL, KN333G25BL, KN333G33BL1, KN333G30BL, KN333G30BL1, KN333G30BLS, KN333G30GR, KN333G30DG, KN333G40BL, KN333G50BL, KN333G45WBL	NYLON

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

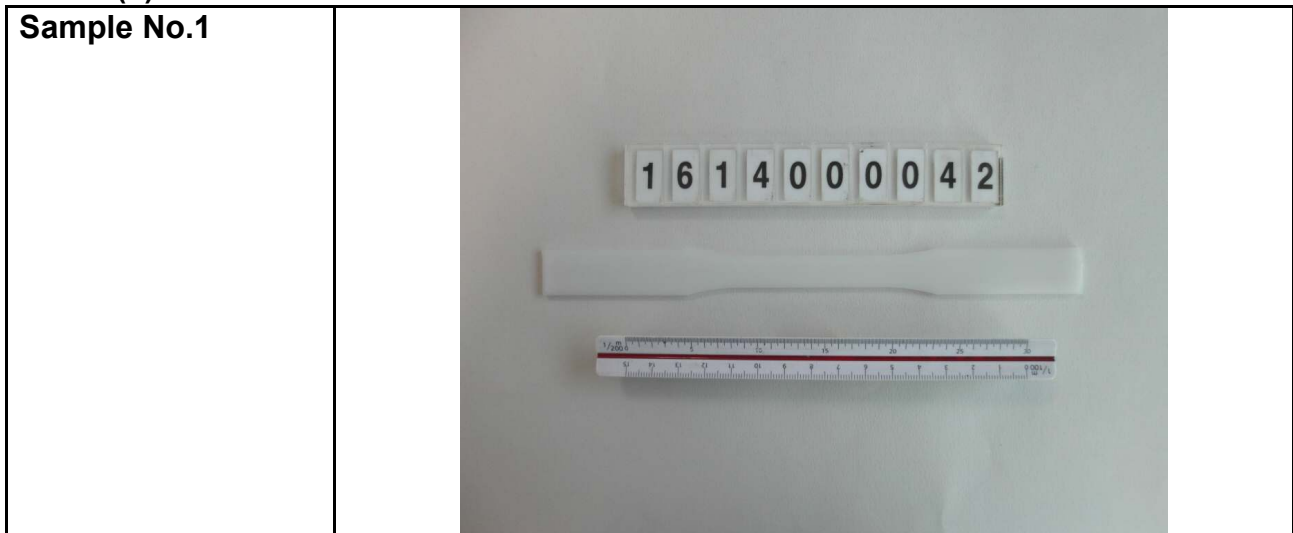
<b>Test Item(s)</b>	<b>CAS-No.</b>	<b>RL</b>	<b>Sample No.</b>
			1
<b>Polybrominated Biphenyls (PBBs)</b>			
Bromobiphenyl	92-66-0	5	N.D.
Dibromobiphenyl	92-86-4	5	N.D.
Tribromobiphenyl	59080-36-3	5	N.D.
Tetrabromobiphenyl	60044-24-8	5	N.D.
Pentabromobiphenyl	59080-39-6	5	N.D.
Hexabromobiphenyl	59080-40-9	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.
<b>Polybrominated Diphenyl Ethers (PBDEs)</b>			
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,  $Cr^{6+}$ , PBBs, PBDEs  $<1000$  mg/kg  
Cd  $<100$  mg/kg

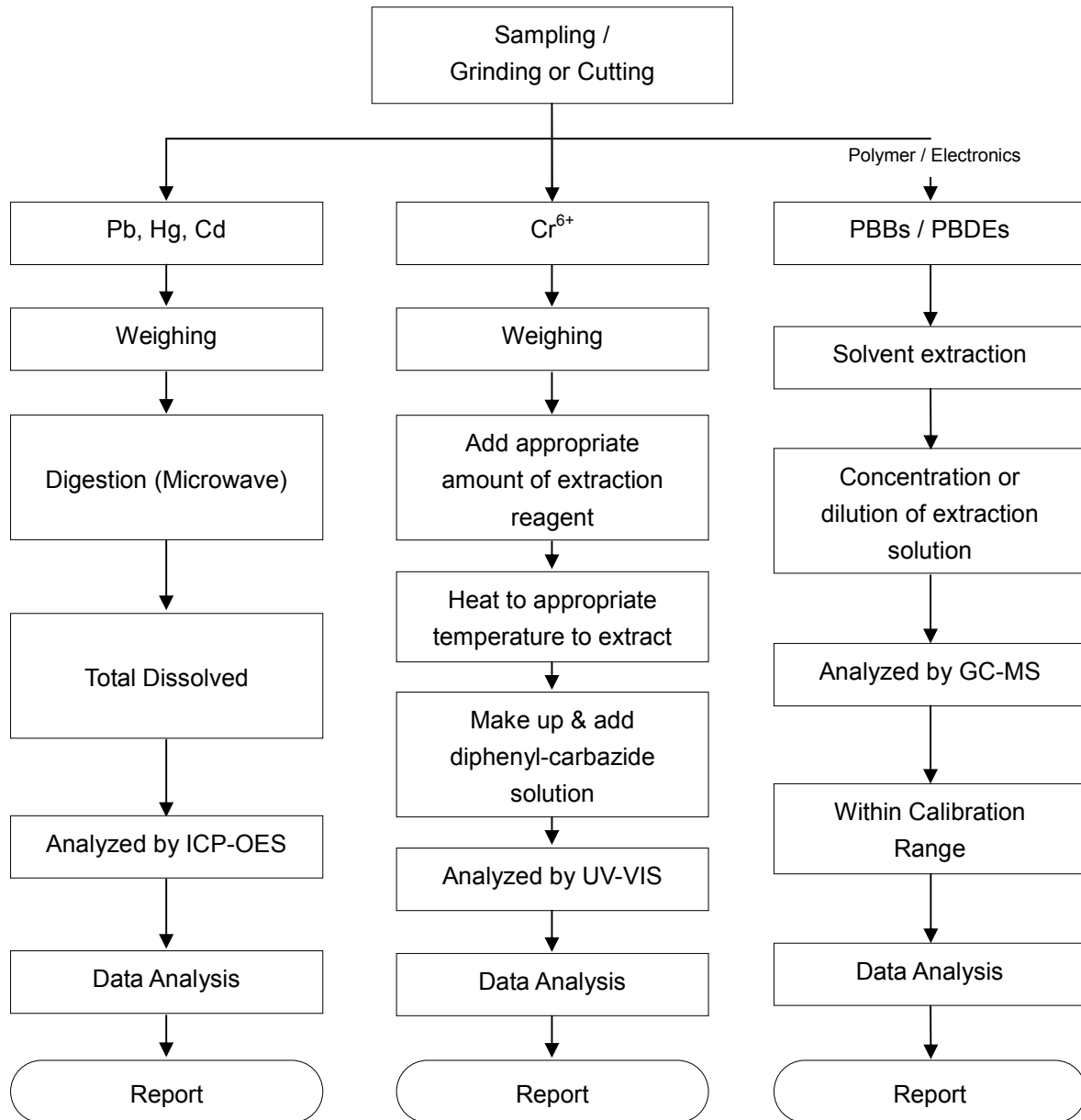
**Test Method**

- 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 ( $Cr^{6+}$ )
- 4) IEC 62321:2008 (Annex B) by boiling water extraction and determined by UV-VIS ( $Cr^{6+}$ )
- 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, Cr<sup>6+</sup>, PBBs/PBDEs)**



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