



Hong Kong

**Technical Report No. 60.160.10.3753.01A**  
**Dated 2010-06-07**

**Applicant:** Pro-A Innovation Limited  
Room 6, 7/F, Fonda Industrial Building, 37-39 Au Pui Wan Street,  
Fo Tan, N.T., Hong Kong

**Test Subject:** Bowl / Pet Bowl / Water Bowl

**Purpose of Examination(s):**

1. For material : Plastics
  - Overall migration test for compliance with 2002/72/EC Directive and its amendment for plastic materials and articles intended to come into contact with foodstuffs.
  - As specified in 82/711/EEC, 85/572/EEC and 97/48/EC Directives; with reference to EN 1186 : Part 9 : 2002 (article filling method) / EN 1186 : Part 14 (substitute method)
2. Total Cadmium Content Test, 91/338/EEC
  - EN 1122:2001 Method B or Microwave digestion method and determination with reference to EN1122
3. Total Lead Content Test
  - Microwave digestion method, followed by Atomic Absorption Spectrometry (AAS)
4. Polycyclic Aromatic Hydrocarbons (PAH) Content Test
  - Extraction method with reference to ZEK 01.2-08 [Reporting Limit = 0.10 mg/kg]
5. Specific migration of polycyclic aromatic hydrocarbon (PAH)
  - As specific in 82/711/EEC, 85/572/EEC and 97/48/EC Directives, followed by Gas Chromatography Mass Spectrometry (GC/MS) Analysis
6. Sensory test
  - Sensory test for compliance with German Food & Feed Acts LFGB Section 31 and Regulation (EC) No. 1935/2004 (Material in contact with food regulation)
  - With reference to DIN 10955:2004
  - The submitted sample was tested with distilled water at 70°C for 2 hours. After this treatment, treated bread was examined by panels with regard to any constituents transfer to food could bring about deterioration in the organoleptic characteristics.

**Test result:** Refer to page 4 – 7



**Technical Report No. 60.160.10.3753.01A**  
**Dated 2010-06-07**

Hong Kong

Result Summary :	Overall Migration	<b>PASS</b>
	Total Cadmium Content	<b>PASS</b>
	Total Lead Content	<b>Report as is</b>
	Specific migration of polycyclic aromatic hydrocarbon (PAH)	<b>PASS</b>
	Polycyclic Aromatic Hydrocarbons (PAH) Content Test	<b>PASS</b>
	Sensory test	<b>PASS</b>

- Remark(s):
- The result relates only to the items tested
  - Sample(s) are tested as received
  - Test item were selected by client

No extract, abridgment or abstraction from a test report may be published or used to advertise a product without the written consent of the Director of TÜV SÜD Hong Kong Ltd. The results contained herein apply only to the particular sample tested and to the specific test carried out and not to samples of the current production line.

**1 Order**

**1.1 Customer's Reference**

Country of Origin: China  
 Country of Destination: Worldwide

**1.2 Receipt Date of Test Sample, Location**

Received on 2010-05-24, Hong Kong


**1.3 Date of Testing, Location**

From 2010-05-26 to 2010-05-31, Hong Kong

**1.4 Document Submitted**

Nil

**2 Description of the Test Subject**

Sample	Color and Description	Photograph
001	Blue PP Copolymer Plastic (Pet Bowl)	

### 3 Test Results

#### 3.1 Overall Migration Test

- with reference to EN 1186 -9, 14:2002

Simulant(s) Used	Test Condition (For repeated use)	Overall Migration Result(s) [mg/dm <sup>2</sup> ]	Maximum Permissible Limit [mg/dm <sup>2</sup> ]
		001	
3% Acetic acid	70°C for 2 hours	<1.0	10
95% Ethanol	60°C for 2 hours	<1.0	10
Isooctane	40°C for 0.5 hour	<1.0	10

Note: 1. mg/dm<sup>2</sup> denotes milligram per square decimeter  
2. °C denotes degree Celsius  
3. < denotes less than  
4. Specification is quoted from 2002/72/EC Directive

#### 3.2 Total Cadmium Content Test, 91/338/EEC

- EN 1122:2001 Method B or Microwave digestion method and determination with reference to EN1122

Test Item(s)	Result(s) [mg/kg]	Maximum Permissible Limit [mg/kg]
	001	
Total Cadmium	<5.0	100

Note: 1. mg/kg denotes milligram per kilogram  
2. < denotes less than

#### 3.3 Total Lead Content Test

- Microwave digestion method , followed by Atomic Absorption Spectrometry (AAS)

Test Item(s)	Result(s) [mg/kg]
	001
Total Lead	<10.0

Note: 1. mg/kg denotes milligram per kilogram  
2. < denotes less than

### 3.4 PAH Content Test

- Extraction method with reference to ZEK 01.2-08 [Reporting Limit = 0.10 mg/kg]

Compounds	Results [mg/kg]
	001
Naphthalene	<0.10
Acenaphthylene	<0.10
Acenaphthene	<0.10
Fluorene	<0.10
Phenanthrene	<0.10
Anthracene	<0.10
Fluoranthene	<0.10
Pyrene	<0.10
Benzo[a]anthracene	<0.10
Chrysene	<0.10
Benzo[b]fluoranthene	<0.10
Benzo[k]fluoranthene	<0.10
Benzo[a]pyrene	<0.10
Benzo[ghi]perylene	<0.10
Dibenzo[ah]anthracene	<0.10
Indeno[1,2,3-cd]pyrene	<0.10
<b>Sum of detected PAHs</b>	<b>&lt;0.20</b>
<b>Category as in ZEK-01.2-08</b>	<b>Category 1</b>
<b>Conclusion</b>	<b>PASS</b>

- Note: 1. < denotes less than  
2. mg/kg denotes milligram per kilogram  
3. Limits for PAH in product according to ZEK-01.2-08

Parameter (mg/kg)	Category 1	Category 2	Category 3
	Material in direct contact with food, or materials intended to be put in the mouth and toys for children aged < 36 months	Material with foreseeable contact to skin for longer than 30 seconds (long-term skin contact) and toys not covered by category 1	Material with foreseeable contact to skin up to 30 seconds (short term skin contact) or without skin contact.
Benzo[a]pyrene	Not detectable (< 0,2)*	1	20
Sum 16 PAH (EPA)	Not detectable (< 0,2)*	10	200

\* If the limits of category 1 are surpassed but the limits of category 2 still met, the confirmation of suitability of contact with foodstuff or the oral mucosa can be verified by an additional migration test of the PAH components according to DIN EN 1186 and § 64 LF BG 80.30-1. The results of the migration test shall be evaluated according to law criteria for foodstuff.

### 3.5 Specific Migration of PAH

- Simulant used: 3% Acetic Acid at 70°C for 2 hours [Detection Limit: 0.01mg/kg]

Compounds	Concentration (mg/kg)
Sample	001
Category	1
Naphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benzo[a]anthracene	<0.01
Chrysene	<0.01
Benzo[b]fluoranthene	<0.01
Benzo[k]fluoranthene	<0.01
Benzo[a]pyrene	<0.01
Benzo[ghi]perylene	<0.01
Dibenzo[ah]anthracene	<0.01
Indeno[1,2,3-cd]pyrene	<0.01
<b>Specific migration of PAHs</b>	<b>&lt;0.01</b>

- Simulant used: 95% Ethanol at 60°C for 2 hours [Detection Limit: 0.01mg/kg]

Compounds	Concentration (mg/kg)
Sample	001
Category	1
Naphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benzo[a]anthracene	<0.01
Chrysene	<0.01
Benzo[b]fluoranthene	<0.01
Benzo[k]fluoranthene	<0.01
Benzo[a]pyrene	<0.01
Benzo[ghi]perylene	<0.01
Dibenzo[ah]anthracene	<0.01
Indeno[1,2,3-cd]pyrene	<0.01
<b>Specific migration of PAHs</b>	<b>&lt;0.01</b>

- Note:
1. mg/kg denotes milligram per kilogram foodstuff
  2. < denotes less than
  3. N.D. denotes Not Detected
  4. Category 1: Material in direct contact with food, or materials intended to be put in the mouth and toys for children aged < 36 months

### 3.5 Specific Migration of PAH

- Simulant used: Isooctane at 40°C for 0.5 hour [Detection Limit: 0.01mg/kg]

Compounds	Concentration (mg/kg)
Sample	001
Category	1
Naphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benzo[a]anthracene	<0.01
Chrysene	<0.01
Benzo[b]fluoranthene	<0.01
Benzo[k]fluoranthene	<0.01
Benzo[a]pyrene	<0.01
Benzo[ghi]perylene	<0.01
Dibenzo[ah]anthracene	<0.01
Indeno[1,2,3-cd]pyrene	<0.01
<b>Specific migration of PAHs</b>	<b>&lt;0.01</b>

Note: 5. mg/kg denotes milligram per kilogram foodstuff

6. < denotes less than

7. N.D. denotes Not Detected

8. Category 1: Material in direct contact with food, or materials intended to be put in the mouth and toys for children aged < 36 months

### 3.6 Sensory test

- With reference to DIN 10955:2004

Test Item(s)	Test Substance(s) Used	Test Condition	Testing Parameter		Recommended level
			Transfer of taste	Transfer of smell	
Complete Product	Distilled Water	70°C for 2 hours	0	0.5	<3

Note: 1. < denotes less than.

2. Available grading are listed as follow:

Grading 0: No perceptible taste/smell deviation

1: Just perceptible taste/smell deviation

2: Weak taste/smell deviation

3: Clear taste/smell deviation

4: Strong taste/smell deviation



Technical Report No. 60.160.10.3753.01A  
Dated 2010-06-07

Hong Kong

TÜV SÜD Hong Kong

Tested by:

Reviewed by:

\_\_\_\_\_  
Gordon Leung  
Project Manager  
Chemical Department



\_\_\_\_\_  
Bingo Leung  
Project Manager  
Chemical Department