

## Product Specification

|                                    |  |
|------------------------------------|--|
| <b>Product Code</b>                | <b>RBLPS007</b>  |
| <b>Description</b>                 | 50 -190mm x 4.5mm Round Solid Section Black Plastic lollipop Sticks  |
| <b>Packaging</b>                   | Packed in retail packs of 50 with a choice of 2 bags types –<br>-Official Yolli<br>-Clear Unbranded  |
| <b>Material</b>                    | HIPS (High Impact Poly Styrene)<br>HI 425E   |
| <b>Colour</b>                      | Deep Black OM0055P   |
| <b>Length Tolerance +/-</b>        | 1mm  |
| <b>Diameter Tolerance +/- %</b>    | 3.5  |
| <b>Pack Quantity</b>               | 50 Pieces  |
| <b>Count Tolerance +/- %</b>       | 2  |
| <b>Pack Weight Tolerance +/- %</b> | 2.5  |
| <b>Suggested Uses</b>              | Lollipops, Cake pops<br>Arts and Crafts  |
| <b>Warnings</b>                    | -Lollipop sticks are a potential choking hazard and are not suitable for children under the age of 3 years.<br>Children under the age of 5 years should be supervised at all times when using lollipop sticks.<br>-Plastic Lollipop sticks are not suitable for oven use – softening point 98° C |

## Technical Data Sheet

# HIPS(High Impact Poly Styrene) HI 425E

**Features** High strength extrusion  
**Applications** Disposable cups, Food packing sheet, Wrapping films, Trays,  
 Washing machines

| Physical                     | Test Method | Value                  |
|------------------------------|-------------|------------------------|
| Density                      | ASTM D792   | 1.03 g/cm <sup>3</sup> |
| Melt Flow Index (200°C, 5kg) | ASTM D1238  | 4.5 g/10min            |
| Mold Shrinkage               | ASTM D955   | 0.3 ~ 0.6 %            |
| Water absorption             | ASTM D570   | 0.03 %                 |

| Mechanical                  | Test Method | Value  |
|-----------------------------|-------------|--|
| Tensile Strength            | ASTM D638   | 280 kg/cm <sup>2</sup><br>(3,976) (psi)      |
| Elongation                  | ASTM D638   | 55 %   |
| Flexural Strength           | ASTM D790   | 350 kg/cm <sup>2</sup><br>(4,970) (psi)      |
| Flexural Modulus            | ASTM D790   | 17,500 kg/cm <sup>2</sup><br>(248,500) (psi) |
| Izod Impact Strength(3.2mm) | ASTM D256   | 9.5 kgcm/cm<br>(1.76) (ft-lb/in)             |
| Rockwell Hardness(L scale)  | ASTM D785   | 65   |

| Thermal   | Test Method | Value               |
|---|-------------|---------------------|
| Heat Deflection Temperature(18.6kgf/cm <sup>2</sup> ) | ASTM D648   | 80 °C<br>(176) (°F) |
| Vicat Softening Temperature(1kg, 50°C/h)              | ASTM D1525  | 98 °C<br>(208) (°F) |

| Flammability              | Test Method | Value |
|---------------------------|-------------|-------|
| Flame Rating - UL (1.6mm) | UL 94       | HB    |

### Notes

These are just typical properties, not specifications. Users should confirm results by their own test.

**Technical Data Sheet**

**HIPS(High Impact Poly Styrene)**

**HI 425E**

**Processing guide**

| <b>Injection Guide</b> | <b>Unit</b> | <b>Value</b> |
|------------------------|-------------|--------------|
| Nozzle                 | °C          | 190~220      |
| Front                  | °C          | 190~210      |
| Middle                 | °C          | 180~200      |
| Rear                   | °C          | 170~190      |
| Hopper Throat          | °C          | 45           |
| Mold                   | °C          | 40~60        |

| <b>Extrusion Guide</b> | <b>Unit</b> | <b>Value</b> |
|------------------------|-------------|--------------|
| Zone 1                 | °C          | 170~190      |
| Zone 2                 | °C          | 180~200      |
| Zone 3                 | °C          | 180~210      |
| Zone 4                 | °C          | 190~220      |
| Zone 5                 | °C          | 200~220      |
| Screen Changer         | °C          | 190~210      |
| Adaptor                | °C          | 200          |
| Die                    | °C          | 190~210      |

| <b>Drying</b> | <b>Unit</b> | <b>Value</b> |
|---------------|-------------|--------------|
| Temperature   | °C          | 60~70        |
| Time          | hr          | 1~3          |

**Notes**

These are only mentioned as general guidelines.

**Safety Data Sheet in accordance with Regulation (EU)****No.453/2010****OMNICOLOR Deep Black OM0055P**

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Substance key: 000000365207  
Version : 1 - 4 / GBRevision Date: 06.02.2012  
Date of printing : 24.04.2012**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier****Trade name****OMNICOLOR Deep Black OM0055P****Material number:** OM90235000**1.2. Relevant identified uses of the substance or mixture and uses advised against****Relevant identified uses of the substance or mixture**Industry sector : Plastic processing industry.  
Type of use : Additive for plastic material processing**1.3. Details of the supplier of the safety data sheet****Identification of the company**

Clariant Masterbatches Ireland

Monread Industrial Estate

Naas

Telephone no. : +353 45 866565

**Information about the substance/mixture**

Product Stewardship

BU Masterbatches

e-mail: PSE.MB.DE@clariant.com

**1.4. Emergency telephone number**

00800-5121 5121 (24 h)

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****Classification according EC Directive (67/548/EEC or 1999/45/EC, as amended)**

The product is not classified as dangerous according to EC directives/the relevant national laws.

hazard warning labelling not compulsory

**2.2. Label elements****Labelling in accordance with EC-Directives (67/548/EEC or 1999/45/EC, as amended)**

The product does not require a hazard warning label in accordance with EC directives/the relevant national laws.

**2.3. Other hazards**

Spilled granules give rise to a slipping hazard. Clean up immediately.

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Substance key: 000000365207  
Version : 1 - 4 / GBRevision Date: 06.02.2012  
Date of printing : 24.04.2012**SECTION 3: Composition/information on ingredients****3.2. Mixtures****Chemical characterization**Colourant preparation  
Carrier: Mixture**SECTION 4: First aid measures****4.1. Description of first aid measures****General information**

No special measures necessary.

**After contact with skin**After contact with molten product cool quickly with cold water  
Do not pull solidified product from skin  
Take for medical treatment**After contact with eyes**Begin with medical treatment.  
In case of contact with eyes remove the product and rinse thoroughly with water.**After ingestion**Do not induce vomiting.  
Call in a physician immediately and show him the Safety Data Sheet.**4.2. Most important symptoms and effects, both acute and delayed****Symptoms**

No significant symptom known, only those caused by the physical form of the material.

**4.3. Indication of any immediate medical attention and special treatment needed****Treatment**

In case of problems seek medical advice and show the package or label

**SECTION 5: Firefighting measures****5.1. Extinguishing media****Suitable extinguishing media**water spray jet  
foam  
carbon dioxide  
dry powder**Extinguishing media that must not be used for safety reasons**

Full water jet

**5.2. Special hazards arising from the substance or mixture**

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In case of fires, hazardous combustion gases are formed:  
Carbon monoxide (CO)  
Carbon dioxide (CO<sub>2</sub>)  
Under certain conditions of combustion traces of other toxic substances cannot be excluded

## 5.3. Advice for firefighters

### Special protective equipment for firefighting

Use self-contained breathing apparatus

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

See: Exposure controls and personal protection.  
High risk of slipping if leaked/spilled product is not cleaned up.

### 6.2. Environmental precautions

Do not allow to enter drains or waterways

### 6.3. Methods and material for containment and cleaning up

Spillage should be swept up immediately.  
Pick up mechanically.

### 6.4. Reference to other sections

#### Additional information

Information regarding personal protective measures see, chapter 8.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

#### Advice on safe handling

Ensure good general ventilation in the workplace; local exhaust ventilation may be necessary, especially when emptying containers.

#### Hygiene measures

The usual Industrial Hygiene precautions must be taken during work, in particular: do not drink, eat or smoke during the handling of the product and clean hands and face during work intervals and after work.

#### Advice on protection against fire and explosion

Take precautions against accumulation of electrostatic charge

### 7.2. Conditions for safe storage, including any incompatibilities

#### Requirements for storage areas and containers

Keep container tightly closed in a cool, well-ventilated place.  
Protect from moisture.  
Protect from direct sunlight

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## No.453/2010

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 Date of printing : 24.04.2012

#### Advice on storage compatibility

Not required.

#### 7.3. Specific end use(s)

No further recommendations.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### Exposure limit values

 Carbon black  
 EC number: 215-609-9  
 CAS number : 1333-86-4

| Regulatory basis / Regulatory list        | Revision   | Type of value  | Values                | Remarks |
|---|------------|--|-----------------------|---------|
| EH40 WELs (amended)<br>UK OEL - EH40 WELs | 01/01/2007 | Long-term exposure limit (8-hour TWA reference period) | 3.5 mg/m <sup>3</sup> |         |
| EH40 WELs (amended)<br>UK OEL - EH40 WELs | 01/01/2007 | Short term exposure limit - 15 mins.                   | 7 mg/m <sup>3</sup>   |         |

 Vinyl acetate  
 EC number: 203-545-4  
 CAS number : 108-05-4

| Regulatory basis / Regulatory list  | Revision   | Type of value             | Values                           | Remarks |
|---|------------|---------------------------|----------------------------------|---------|
| Directive on indicative exposure limits (amended)<br>EU OEL - Directive on indicative exposure limits | 01/01/2009 | Short Term Exposure Level | 35.2 mg/m <sup>3</sup><br>10 ppm |         |

 Acetic acid  
 EC number: 200-580-7  
 CAS number : 64-19-7

| Regulatory basis / Regulatory list  | Revision   | Type of value          | Values                         | Remarks |
|---|------------|------------------------|--------------------------------|---------|
| Directive on indicative exposure limits (amended)<br>EU OEL - Directive on indicative exposure limits | 29/05/1991 | Threshold Limit Values | 25 mg/m <sup>3</sup><br>10 ppm |         |

##### DNEL/DMEL values

DNEL/DMEL values are not available.

##### PNEC values

PNEC values are not available.

#### 8.2. Exposure controls

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Date of printing : 24.04.2012**General protective measures**

Observe precautions disposal of Directive 89/686/EEC and following amendments regarding individual protection equipment for handling materials in the chemistry industry.

**Respiratory protection :** In case of insufficient exhaust ventilation or prolonged exposure use respiratory protection equipment according to EEC-directive 89/686

**Hand protection :** Leather gloves  
Nitrile rubber gloves.  
Minimum thickness (glove): valid statement not possible.  
Minimum breakthrough time (glove): valid statement not possible.  
  
These types of protective gloves are offered by various manufacturers. Please note the manufacturers' detailed statements, especially about the minimum thickness and the minimum breakthrough time. Consider also the particular working conditions under which the gloves are being used.

**Eye protection :** safety glasses

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

**Physical state :** solid

**Form :** Granules

**Particle size :** Product specific

**Colour :** black

**Odour :** characteristic

**Odour threshold :** cannot be determined

**pH value :** Not applicable

**Melting point :** not determined

**Boiling point :** not applicable

**Flash point :** Not applicable

**Evaporation rate :** This information is not applicable for solids.

**Flammability**

**Lower explosion limit :** not tested.

**Upper explosive limit :** not tested.

**Vapour pressure :** Not applicable

**Vapour density relative to air :** This information is not applicable for solids.

**Relative Density:** not available

**Solubility in water :** insoluble



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|  |   |
|--|---|
| <b>Octanol/water partition coefficient (log Pow) :</b> | This property is not applicable for mixtures.   |
| <b>Self-ignition temperature :</b>                     | Not applicable  |
| <b>Thermal decomposition :</b>                         | To the best of our current knowledge, no thermal decomposition of the product is expected if it is processed according to good manufacturing practices. |
| <b>Viscosity (dynamic) :</b>                           | Not applicable  |
| <b>Viscosity (kinematic) :</b>                         | Not applicable  |
| <b>Explosive properties :</b>                          | Explosive according to EU supply regulations : no data<br>Explosive according transport regulation : no data  |
| <b>Oxidizing properties :</b>                          | not available   |

**9.2. Other information**

|  |                          |
|--|--------------------------|
| <b>Density :</b>                                       | not tested.              |
| <b>Surface tension :</b>                               | not relevant for safety  |
| <b>Thermal conductivity :</b>                          | not tested.              |
| <b>Specific resistance / electrical conductivity :</b> | not tested.              |
| <b>Further information</b>                             |                          |
| Explosion hazard:                                      | Not an explosion hazard. |

**SECTION 10: Stability and reactivity****10.1. Reactivity**

See section 10.3. "Possibility of hazardous reactions"

**10.2. Chemical stability**

Stable.

**10.3. Possibility of hazardous reactions**

No hazardous reactions when stored and handled according to prescribed instructions.

**10.4. Conditions to avoid**

Temperatures exceeding thermal stability of the masterbatch. Electrostatic charges.

**10.5. Incompatible materials**

not known

**10.6. Hazardous decomposition products**

No decomposition if used as intended.

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Substance key: 000000365207  
Version : 1 - 4 / GBRevision Date: 06.02.2012  
Date of printing : 24.04.2012**SECTION 11: Toxicological information****11.1. Information on toxicological effects****Information related to the product itself:**

**Acute oral toxicity :** LD50 > 2,000 mg/kg (rat)  
The product has not been tested. The information is derived from the properties of the individual components.

**Irritant effect on skin :** non-irritant

**Irritant effect on eyes :** non-irritant

**Sensitization :** non-sensitizing

**Remarks**

Determined on raw material components in accordance with Directive 1999/45/EC.

**SECTION 12: Ecological information****12.1. Toxicity****Information related to the product itself:**

**Fish toxicity :** No data available.

**12.2. Persistence and degradability****Information related to the product itself:**

**Physico-chemical  
eliminability :** The product can be separated out mechanically.

**12.3. Bioaccumulative potential****Information related to the product itself:**

**Bioaccumulation:** not tested.

**12.4. Mobility in soil****Information related to the product itself:**

**Transport and distribution  
between environmental  
compartments :** not tested.

**12.5. Results of PBT and vPvB assessment****Information related to the product itself:**

No information is available as no chemical safety report (CSR) is required.

**12.6. Other adverse effects****Information related to the product itself:**

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Date of printing : 24.04.2012**Additional ecotoxicological remarks**

Do not allow to enter ground water, waterways or waste water.

**SECTION 13: Disposal considerations****13.1. Waste treatment methods****Product**

Residual chemical should be subjected to waste management, using an approved waste disposal contractor, in compliance with EC regulations 91/156/EEC; 91/689/EEC; 94/62/EC and subsequent amendments

**Uncleaned packaging**

Contaminated packaging material should be treated equivalent to residual chemicals. Clean packaging material should be subjected to waste management schemes (recovery recycling, reuse) according to local legislation.

**SECTION 14: Transport information****Section 14.1. to 14.5.**

|             |                |
|-------------|----------------|
| <b>ADR</b>  | not restricted |
| <b>ADN</b>  | not restricted |
| <b>RID</b>  | not restricted |
| <b>IATA</b> | not restricted |
| <b>IMDG</b> | not restricted |

**14.6. Special precautions for user**

See sections 6 to 8 of this Safety Data Sheet.

**14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code (International Bulk Chemicals Code)**

No transport as bulk according IBC - Code.

**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****Other regulations**

All the ingredients of the preparation comply with the applicable requirements of the current REACH Regulation.

**15.2. Chemical safety assessment**

No Chemical Safety Assessment (CSA) is yet available for the component substances of this preparation.

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Substance key: 000000365207  
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Date of printing : 24.04.2012**SECTION 16: Other information**

This information corresponds to the present state of our knowledge and is intended as a general description of our products and their possible applications. Clariant makes no warranties, express or implied, as to the information's accuracy, adequacy, sufficiency or freedom from defect and assumes no liability in connection with any use of this information. Any user of this product is responsible for determining the suitability of Clariant's products for its particular application. Nothing included in this information waives any of Clariant's General Terms and Conditions of Sale, which control unless it agrees otherwise in writing. Any existing intellectual/industrial property rights must be observed. Due to possible changes in our products and applicable national and international regulations and laws, the status of our products could change. Material Safety Data Sheets providing safety precautions, that should be observed when handling or storing Clariant products, are available upon request and are provided in compliance with applicable law. You should obtain and review the applicable Material Safety Data Sheet information before handling any of these products. For additional information, please contact Clariant.

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File No. : QA-2012-106

Issued Date : May. 07, 2012

Receive :

Reference :

Title : Food statement on Regulation (EU) No 10/2011

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### **Product Information**

Grade : HI 425E

Our mentioned product contains substances listed in authorised monomers and other starting substances, additives and polymer production aids of ANNEX I of Commission Regulation (EU) No 10/2011 on plastic materials and articles in contact with food.

- The Monomers and other starting substances listed in ANNEX I
  - Butadiene, CAS No 106-99-0, SML = not detectable
  - Styrene, CAS No 100-42-5

The product does not contain substances authorized as food additives or flavouring with restrictions in the applicable EC directives.

Quality Assurance Manager  
**Cheol Hee Yoon**





## Test Report

No.HKHL1303021955JL

Date: MAR 20, 2013

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KUMHO PETROCHEMICAL CO.,LTD.  
#45-25, SEONGNAM -DONG, NAM-GU, ULSAN 680-140, KOREA

The following samples were submitted and identified on behalf of the client as:

HI 425E

SGS Case No. : HKHL130300012375  
SGS Ref No. : AYAA13-10508

Sample Receiving Date : MAR 04, 2013  
Test Performing Date : MAR 04 – 19, 2013

Test Requested : Please refer to the result summary.

Test Method & Results : Please refer to next page(s).

Result Summary :

| Test Requested   | Conclusion |
|--|------------|
| <b>1. German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 31.</b>  | --         |
| Sensorial examination odour and taste test   | PASS       |
| <b>2. German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30, European Commission Regulation (EU) No 10/2011 and BfR recommendation.</b> | --         |
| Plastic – Lead and Cadmium   | PASS       |
| <b>3. European Commission Regulation (EU) No 10/2011</b>   | --         |
| a) Plastic – Overall migration   | PASS       |
| b) Plastic – Specific Migration of Heavy Metals  | PASS       |

Signed for and on behalf of  
SGS Hong Kong Ltd.

Che Wai Leuk, Jerry  
Section Manager

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.





## Test Report

No.HKHL1303021955JL

Date: MAR 20, 2013

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Test Results :

### 1. German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 31.

Sensory examination – odour and taste test

Method : With reference to DIN10955:2004-06.

| Test Item                                     | Result | Permissible Limit |
|---|--------|-------------------|
|   | 1      |                   |
| Sensorial examination odour (Intensity scale) | 1.0    | 2.5               |
| Sensorial examination taste (Intensity scale) | 1.0    | 2.5               |
| <b>Comment</b>                                | PASS   | --                |

#### Sample Description :

1. White Plastic

Note : Intensity scale :

- 0 – no perceptible deviation
- 1 – deviation just perceptible
- 2 – moderate deviation
- 3 – distinct deviation
- 4 – large deviation

### 2. German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30, European Commission Regulation (EU) No 10/2011 and BfR recommendation.

Plastic – Lead and Cadmium

Method : i) Lead content : Acid digestion followed by analysis with Atomic Absorption Spectrometry.  
ii) Cadmium content : With reference to EN 1122:2001, Method B

| Test Item                         | Result (mg/kg) | Reporting Limit (mg/kg) | Reference Limit (mg/kg) |
|-----------------------------------|----------------|-------------------------|-------------------------|
|                                   | 1              |                         |                         |
| Lead content                      | ND             | 2                       | Absent                  |
| Cadmium content                   | ND             | 2                       | Absent                  |
| <b>Comment – Lead and Cadmium</b> | PASS           | --                      | --                      |

#### Sample Description :

1. White Plastic

Note : 1. Lead and Cadmium content: mg/kg = milligram per kilogram

2. ND = Not Detected

3. When lead or/and cadmium is/are found to be present but feasibly low in value to migrate, migratable lead or cadmium will be determined to evaluate its compliance.

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Test Results (Con't) :

**3. European Commission Regulation (EU) No 10/2011**

a) Plastic – Overall migration

 Method : With reference to EN 1186-1:2002 for selection of conditions and test methods;  
 EN 1186-3:2002 aqueous food simulants by total immersion method;  
 EN 1186-2:2002 olive oil by total immersion method;

| Simulant Used                         | Test Condition  | Result<br>(mg/dm <sup>2</sup> ) | Reporting<br>Limit<br>(mg/dm <sup>2</sup> ) | Permissible<br>Limit<br>(mg/dm <sup>2</sup> ) |
|---------------------------------------|-----------------|---------------------------------|---|---|
|                                       |                 | 1                               |   |   |
| 3% Acetic Acid (W/V) Aqueous Solution | 10 days at 40°C | ND                              | 3.0   | 10  |
| 50% Ethanol (V/V) Aqueous Solution    | 10 days at 40°C | ND                              | 3.0   | 10  |
| Rectified Olive Oil                   | 10 days at 40°C | ND                              | 3.0   | 10  |
| <b>Comment</b>                        | --              | PASS                            | --  | --  |

Sample Description :

1. White Plastic

 Note : 1. mg/dm<sup>2</sup> = milligram per square decimeter  
 2. °C = degree Celsius  
 3. ND = Not Detected

## Remark :

1. Test condition &amp; simulant were specified by client.



Test Results (Con't) :

b) Plastic – Specific Migration of Heavy Metals

Method: Sample preparation in 3% acetic acid (w/v) in aqueous solution at 40°C for 10 days with reference to EN 13130-1:2004; followed by analysis using Inductively Coupled Argon Plasma Spectrometry (ICP).

| Test Item                       | Result (mg/kg) | Reporting Limit (mg/kg) | Permissible Limit (mg/kg) |
|---------------------------------|----------------|-------------------------|---------------------------|
|                                 | 1              |                         |                           |
| Specific Migration of Barium    | ND             | 0.25                    | 1                         |
| Specific Migration of Cobalt    | ND             | 0.03                    | 0.05                      |
| Specific Migration of Copper    | ND             | 0.25                    | 5                         |
| Specific Migration of Iron      | ND             | 0.25                    | 48                        |
| Specific Migration of Lithium   | ND             | 0.5                     | 0.6                       |
| Specific Migration of Manganese | ND             | 0.25                    | 0.6                       |
| Specific Migration of Zinc      | ND             | 0.5                     | 25                        |
| <b>Comment</b>                  | PASS           | --                      | --                        |

Sample Description :

1. White Plastic

- Note :
1. mg/kg = milligram per kilogram of foodstuff in contact with
  2. °C = degree Celsius
  3. ND = Not Detected

Remark :

1. Test condition & simulant were specified by client.



\*\*\* End of Report \*\*\*

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