

Product Specification

Product Code	RWPS011
Description	50 -225mm x 5mm Round Solid Section White Plastic lollipop Sticks
Packaging	50 -White plastic lollipop sticks that are packed into 1 clear pack. Each pack will have a white label which states what the item is and its size. There is also an option of no label.
Material	HIPS (High Impact Poly Styrene) HI 425E
Colour	Bright White OM0005
Length Tolerance +/-	1mm
Diameter Tolerance +/- %	3.5
Pack Quantity	50 pieces
Count Tolerance +/- %	2
Pack Weight Tolerance +/- %	2.5
Suggested Uses	Lollipops, Cake pops Arts and Crafts
Warnings	-Lollipop sticks are a potential choking hazard and are not suitable for children under the age of 3 years. Children under the age of 5 years should be supervised at all times when using lollipop sticks. -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 ³
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 ² (3,976) (psi)
Elongation	ASTM D638	55 %
Flexural Strength	ASTM D790	350 kg/cm ² (4,970) (psi)
Flexural Modulus	ASTM D790	17,500 kg/cm ² (248,500) (psi)
Izod Impact Strength(3.2mm)	ASTM D256	9.5 kgcm/cm (1.76) (ft-lb/in)
Rockwell Hardness(L scale)	ASTM D785	65

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

Injection Guide	Unit	Value
Nozzle	°C	190~220
Front	°C	190~210
Middle	°C	180~200
Rear	°C	170~190
Hopper Throat	°C	45
Mold	°C	40~60

Extrusion Guide	Unit	Value
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

Drying	Unit	Value
Temperature	°C	60~70
Time	hr	1~3

Notes

These are only mentioned as general guidelines.

**Safety Data Sheet in accordance with Regulation (EC) No
1907/2006****OMNICOLOR-Bright White OM0005**

Page 1

Substance key: 000000336800
Version : 1 - 2 / GBRevision Date: 02.12.2009
Date of printing : 09.01.2012**1. Identification of the substance/preparation and of the company/undertaking****Trade name****OMNICOLOR-Bright White OM0005****Material number:** OM00235002**Use of the substance/preparation.**Industry sector : Plastic processing industry.
Type of use : Additive for plastic material processing**Identification of the company**

Clariant Masterbatches UK Ltd.

Unit 2, Rawdon Park, Yeadon
LS19 7BA Leeds
Telephone no. : +353 (0)45 866565**Information about the substance/preparation**Product Stewardship
BU Masterbatches
e-mail: PSE.MB.DE@clariant.com**Emergency telephone number :** 00800-5121 5121 (24 h)**2. Hazards identification**

This mixture has not been tested 'as is'. The information provided on the health effects of this product is based on data on the individual components, following the calculation method given in the EU Dangerous Preparations Directive 1999/45/EC, as amended.

Classification of the mixture

The product is not classified as dangerous according to EC directives, but it contains at least one dangerous component, as indicated in this Safety Data Sheet.

The relevant minimum standards for protective measures in the chemical industry should be observed.

3. Composition/information on ingredients**Chemical characterization**Colourant preparation
Carrier: Mixture**Hazardous ingredients**2,5-Thiophenediylbis(5-tert-butyl-1,3-benzoxazole)
Concentration : < 0.1 %
CAS number : 7128-64-5
EINECS number : 230-426-4
R phrases 53

The text of the R-phrases is shown in section 16.

4. First aid measures

**Safety Data Sheet in accordance with Regulation (EC) No
1907/2006****OMNICOLOR-Bright White OM0005**

Page 2

Substance key: 000000336800
Version : 1 - 2 / GBRevision Date: 02.12.2009
Date of printing : 09.01.2012**General information**

No special measures necessary.

After contact with skinAfter 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.**5. Fire-fighting measures****Suitable extinguishing media**water spray jet
foam
carbon dioxide
dry powder**Extinguishing media that must not be used for safety reasons**

Full water jet

Special hazards from the substance itself, its combustion products or from its vapoursIn case of fires, hazardous combustion gases are formed:
Carbon monoxide (CO)
Carbon dioxide (CO₂)
Under certain conditions of combustion traces of other toxic substances cannot be excluded**Special protective equipment for firefighting**

Use self-contained breathing apparatus

6. Accidental release measures**Personal precautions**See: Exposure controls and personal protection.
High risk of slipping if leaked/spilled product is not cleaned up.**Environmental precautions**

Do not allow to enter drains or waterways

Methods for cleaning up/taking up

When picked up, treat material as prescribed under heading "Disposal".

7. Handling and storage**Advice on safe handling**

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

**Safety Data Sheet in accordance with Regulation (EC) No
1907/2006****OMNICOLOR-Bright White OM0005**

Page 3

Substance key: 000000336800
Version : 1 - 2 / GBRevision Date: 02.12.2009
Date of printing : 09.01.2012**Advice on protection against fire and explosion**

Take precautions against accumulation of electrostatic charge

Requirements for storage rooms and vessels

Keep container tightly closed in a cool, well-ventilated place.

Protect from moisture.

Protect from direct sunlight

Advice on storage compatibility

Not required.

8. Exposure controls / personal protection**Occupational exposure controls****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.

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.

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

9. Physical and chemical properties

Form :	Granules
Colour :	white
Odour :	characteristic
Melting point :	not determined
Boiling point :	not applicable
Flash point :	Not applicable
Self-ignition temperature :	Not applicable

**Safety Data Sheet in accordance with Regulation (EC) No
1907/2006****OMNICOLOR-Bright White OM0005**

Page 4

Substance key: 000000336800
Version : 1 - 2 / GBRevision Date: 02.12.2009
Date of printing : 09.01.2012

Vapour pressure :	Not applicable
Density :	not tested.
Solubility in water :	insoluble
pH value :	Not applicable
Octanol/water partition coefficient (log Pow) :	Not applicable
Viscosity (dynamic) :	Not applicable
Thermal conductivity :	not tested.
Specific resistance / electrical conductivity :	not tested.
Further information	
Explosion hazard:	Not an explosion hazard.

10. Stability and reactivity

Thermal decomposition :	To the best of our current knowledge, no thermal decomposition of the product is expected if it is processed according to good manufacturing practices.
Hazardous reactions	No hazardous reactions when stored and handled according to prescribed instructions.
Hazardous decomposition products	No decomposition if used as intended.
Conditions to avoid	Temperatures exceeding thermal stability of the masterbatch. Electrostatic charges.
Materials to avoid	not known

11. Toxicological information

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.

**Safety Data Sheet in accordance with Regulation (EC) No
1907/2006****OMNICOLOR-Bright White OM0005**

Page 5

Substance key: 000000336800
Version : 1 - 2 / GBRevision Date: 02.12.2009
Date of printing : 09.01.2012**12. Ecological information****Physico-chemical
eliminability :** The product can be separated out mechanically.**Remarks**

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

13. Disposal considerations**Product**

Must be taken to special waste disposal site in accordance to EC regulations (91/156/EEC; 91/689/EEC; 94/62/EC) and following amendments considering the possible dangerous ingredients listed in chapter "Composition/information on ingredients", "Stability and reactivity" or "Other information".

Uncleaned packagingContaminated 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.**14. Transport information**

ADR	not restricted
ADNR	not restricted
RID	not restricted
IATA	not restricted
IMDG	not restricted

15. Regulatory information**Labelling in accordance with EC-Directives**

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

Chemical Safety Assessment

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

Special labelling for certain preparations

Safety Data Sheet available for professional user on request.

National regulations**Other regulations**

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

All ingredients of the product are registered in EINECS or ELINCS.

**Safety Data Sheet in accordance with Regulation (EC) No
1907/2006****OMNICOLOR-Bright White OM0005**

Page 6

Substance key: 000000336800
Version : 1 - 2 / GBRevision Date: 02.12.2009
Date of printing : 09.01.2012**16. Other information****Text of the R-phrases assigned to the ingredients/components mentioned in section 3 :**

53 May cause long-term adverse effects in the aquatic environment.

The data are based on the current state of our knowledge, and are intended to describe the product with regard to the requirements of safety. The data should not be taken to imply any guarantee of a particular or general specification. It is the responsibility of the user of the product to ensure to his satisfaction that the product is suitable for the intended purpose and method of use. We do not accept responsibility for any harm caused by the use of this information. In all cases, our general conditions of sale apply.

File No. : QA-2012-106

Issued Date : May. 07, 2012

Receive :

Reference :

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

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

Page 1 of 4

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
1. German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 31.	--
Sensorial examination odour and taste test	PASS
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	PASS
3. European Commission Regulation (EU) No 10/2011	--
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

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

Page 2 of 4

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
Comment	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
Comment – Lead and Cadmium	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.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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 (mg/dm ²)	Reporting Limit (mg/dm ²)	Permissible Limit (mg/dm ²)
		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
Comment	--	PASS	--	--

Sample Description :

1. White Plastic

Note : 1. mg/dm² = milligram per square decimeter
 2. °C = degree Celsius
 3. ND = Not Detected

Remark :

1. Test condition & simulant were specified by client.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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) :

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
Comment	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 ***

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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.