Product Specification

Product Code	RRPS005
Description	50 -150mm x 4.5mm Round Solid Section Red Plastic lollipop Sticks
Packaging	Packed in retail packs of 50 with a choice of 2 bags types – -Official Yolli -Clear Unbranded
Material	HIPS (High Impact Poly Styrene) HI 425E
Colour	Brilliant Red OM3947
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***

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West Park House
7-9 Wilkinson Avenue
Blackpool FY3 9XG

KUMHO PETROCHEMICAL

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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℃, 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 ℃ (176) (℉)
Vicat Softening Temperature(1kg, 50℃/h)	ASTM D1525	98 ℃ (208) (℉)

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.

Rev. : 2013-02-22

KUMHO PETROCHEMICAL

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Technical Data Sheet

HIPS(High Impact Poly Styrene)
HI 425E

Processing guide

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

Extrusion Guide	Unit	Value
Zone 1	℃	170~190
Zone 2	℃	180~200
Zone 3	℃	180~210
Zone 4	℃	190~220
Zone 5	℃	200~220
Screen Changer	℃	190~210
Adaptor	℃	200
Die	℃	190~210

Drying	Unit	Value
Temperature	℃	60~70
Time	hr	1~3

Notes

These are only mentioned as general guidelines.

Rev. : 2013-02-22

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name
OMNICOLOR-Brilliant Red OM3947

Material number: OM33235000

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 UK Ltd.

Unit 2, Rawdon Park, Yeadon
LS19 7BA Leeds
Telephone no. : +353 (0)45 866565

Information about the substance/mixture

BU Masterbatches
Product Stewardship
e-mail: ProductSafetyIE@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

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

In 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

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

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
Exposure limit values are not available.

DNEL/DMEL values
DNEL/DMEL values are not available.

PNEC values
PNEC values are not available.

8.2. 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.

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 :	red

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
Octanol/water partition coefficient (log Pow) :	This property is not applicable for mixtures.
Self-ignition temperature :	Not applicable
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.
Viscosity (dynamic) :	Not applicable
Viscosity (kinematic) :	Not applicable
Explosive properties :	Explosive according to EU supply regulations : no data Explosive according transport regulation : no data
Oxidizing properties :	not available

9.2. Other information

Density :	not tested.
Surface tension :	not relevant for safety
Thermal conductivity :	not tested.
Specific resistance / electrical conductivity :	not tested.

Further information

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.

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:

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.

ADR	not restricted
ADN	not restricted
RID	not restricted
IATA	not restricted
IMDG	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.

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.

KUMHO PETROCHEMICAL

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Website : http://www.kkpc.co.kr

Email : kyoungmi@kkpc.com

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

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

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.

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℃	ND	3.0	10
50% Ethanol (V/V) Aqueous Solution	10 days at 40℃	ND	3.0	10
Rectified Olive Oil	10 days at 40℃	ND	3.0	10
Comment	--	PASS	--	--

Sample Description :
1. White Plastic

Note : 1. mg/dm^2 = milligram per square decimeter
2. ℃ = degree Celsius
3. ND = Not Detected

Remark :
1. Test condition & simulant were specified by client.

Test Results (Con't) :

b) Plastic – Specific Migration of Heavy Metals

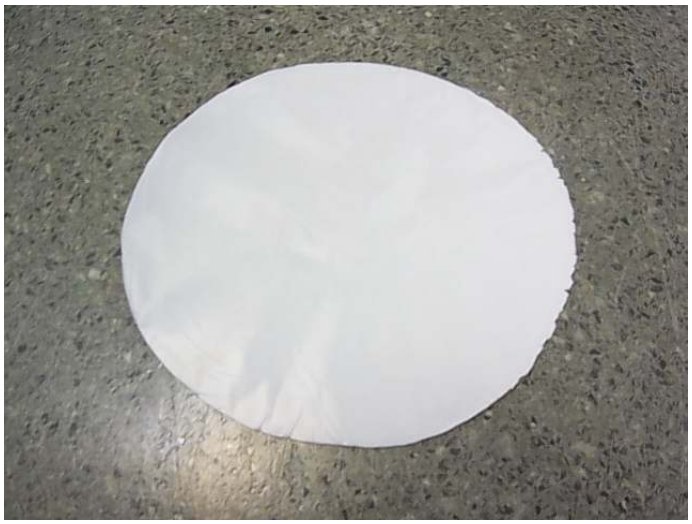
Method: Sample preparation in 3% acetic acid (w/v) in aqueous solution at 40℃ for 10 days with reference to EN 13130-1:2004; followed by analysis using Inductively Coupled Argon Plasma Spectrometry (ICP).

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. ℃ = degree Celsius
3. ND = Not Detected

Remark :
1. Test condition & simulant were specified by client.



*** End of Report ***