

Test Report No. : Q00284708a 001

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Client: LION CHEMTECH CO., LTD.

41-5, Moonpyong-Dong,
Daeduk-Ku, Daejeon,
Republic of Korea

Test Item(s): Plate

**Identification/
Model No(s):** ACRYL SOLID SURFACE

Sample Receiving date: 2013-11-27

Delivery condition: Apparent good, Samples tested as received

Test Specification:

Test Result:

Selected tests for the suitability for contact with foodstuffs complied with the following regulations:
- German §31 LFGB (Lebensmittel-, Bedarfsgegenstände- und Futtermittelgesetzbuch)

PASS

Other Information:

Testing period: 2013-11-29 - 2013-12-06

For and on behalf of
TÜV Rheinland (Hong Kong) Ltd.

2013-12-13

Date



Kenny Liu / Senior Project Chemist

Name / Position

Test result is drawn according to the kind and extent of tests performed.

This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.

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Material List

Item: ACRYL SOLID SURFACE

Material No.	Material	Color	Location
M001	Acrylic plastic	White	Plate (smooth side)

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1. Sensorial Examination

It is examined to the extent of food simulant being used, which comes into contact with the product, undergoes detectable changes in taste and smell. For this purpose, the food simulant was stored in the product under the below mentioned time and temperature. Afterwards, the food simulant was examined by appropriate number of tasters with regard to any divergence in smell and taste. Another test sample, which was used as a reference, was treated by the same way except that it had no contact with the product to be tested.

Before testing, the product had been cleaned according to the product's instruction manual or in the absence of such manual, with hot water (60°C).

The test is carried out on the basis of DIN 10955 by paired comparison test.

Evaluation scheme for the transfer of taste and smell:

- 0 = No discernible deviation
- 1 = Barely discernible deviation
- 2 = Weak deviation
- 3 = Clear deviation
- 4 = Strong deviation

Limit: 3 (Failed)

The following simulation solvents and test conditions were stipulated

Food Simulant	Test Duration / Temperature	
Water	2 hours at 70°C	
	Test No:	T001
	Material No:	M001
Parameter	Result (Average)	
Transfer of smell into foodstuffs	0	< 3
Transfer of taste into foodstuffs	0	< 3

Remark:

*1 The submitted product is inconspicuous with regard to the transfer of smell and taste to the food simulant.

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2. Global Migration

The migratory behaviour is examined in accordance with Directive 82/711/EEC and Council Directive 85/572/EEC and its corresponding regulations. Deviating to the regulations the following tests were performed as orientating single tests.

Limit: Commission Regulation (EU) No 10/2011

The following simulation solvents and test conditions were stipulated

Food Simulant	Test Duration / Temperature
3% Acetic acid	2 hours at 70°C
Isooctane	30 mins at 40°C
95% Ethanol	2 hours at 60°C

Material No:	M001		Limit
Parameter	Unit	Result	
3% Acetic acid	mg/dm ²	2.8	10
Isooctane	mg/dm ²	3.0	10
95% Ethanol (Third Migration)	mg/dm ²	5.6	10

Abbreviation: mg/dm² = milligram per square decimeter

Remark:

*1 Ratio of food contact surface area to volume used to establish the compliance of the material is 1dm²:167ml .

*2 The examined item meets the requirement.

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3. Migration of metals, Metal-release from Plastic

The testing of migration was performed with reference to Directive 82/711/EEC and Council Directive 85/572/EEC and its corresponding regulations. The determination of the amounts of metal that were released is done via ICP-OES.

Limit: Commission Regulation (EU) No 10/2011

The following simulation solvents and test conditions were stipulated

Food Simulant	Test Duration / Temperature
3% Acetic acid	2 hours at 70°C

Test No:	T001		Limit
Material No:	M001		
Parameter	Unit	Result	
Barium	mg/kg	<0.1	1
Cobalt	mg/kg	<0.01	0.05
Copper	mg/kg	<0.1	5
Iron	mg/kg	<1	48
Lithium	mg/kg	<0.1	0.6
Manganese	mg/kg	<0.1	0.6
Zinc	mg/kg	<1	25

Abbreviation: mg/kg = milligram per kilogram
 < = less than

Remark:

*1 The examined item meets the requirement.

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4. Volatile Organic Substances

The test was performed according to the 19th Communication on the testing of plastics, (Bundesgesundheitsbl., 14, (1971), page 265).

Limit: Recommendation of Plastics Intended to Come into Contact with Food in BfR, "Kunststoffempfehlungen", Part XXII, 2001 "Polymers Based on Esters of Acrylic and Methacrylic Acids, their Copolymers, and Mixtures of these with other Polymers".

Test No:	T001		Limit
Material No:	M001		
Parameter	Unit	Result	
Volatile organic substances	%	<0.1	0.5

Abbreviation: % = percentage
 < =less than

Remark:

*1 The examined item meets the requirement.

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5. Migration of Polycyclic Aromatic Hydrocarbons (PAHs)

The testing of migration was performed following Directive 82/711/EEC and Council Directive 85/572/EEC and its corresponding regulations. The presence of PAHs is detected by means of GC-MS.

The following simulation solvents and test conditions were stipulated

Food Simulant	Test Duration / Temperature
Isooctane	30 mins at 40°C

Test No:	T001		Limit
Material No:	M001		
Parameter	Unit	Result	
Sum PAHs	µg/L	<10	n.d.

Abbreviation: µg/L = microgram per liter
 n.d. = not detected
 < = less than
 Detection limit: 10 µg/L

Remark:

*1 The examined item meets the requirement.

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6. Migration of Methyl methacrylic acid

Test Method: The migratory behaviour is examined with reference to Directive 82/711/EEC and Council Directive 85/572/EEC and its corresponding regulations. Presence of Methyl methacrylic acid is detected by means of GCMS.

Limit: Commission Regulation (EU) No 10/2011

The following simulation solvents and test conditions were stipulated

Food Simulant	Test Duration / Temperature
3% Acetic acid	2 hours at 70°C

Test No:	T001		Limit
Material No:	M001		
Parameter	Unit	Result	
Methyl methacrylic acid	mg/kg	<1	6

Abbreviation: mg/kg = milligram per kilogram
 < = less than

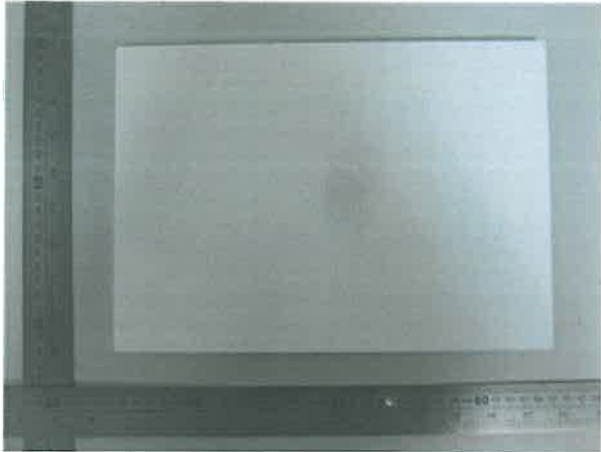
Remark:

*1 The examined item meets the requirement.

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Sample photo:



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