

## Test Report

No. SH8055319/ CHEM

Date: Apr. 28, 2008

Page 1 of 6

ASAHI-DUPONT POM (ZHANGJIAGANG) COMPANY LIMITED  
NO.37 DONGHAI RD. YANGTZE RIVER INTERNATIONAL CHEMICAL PARK, ZHANGJIAGANG JIANGSU.

The following sample(s) was/were submitted and identified by/on behalf of the client as:

Sample Name : POLYACETAL RESIN  
SGS Ref No. : 10968165  
Model No. : TYSTRON®  
Main substance : POM

Sample Receiving Date : Apr.22, 2008  
Testing Period : Apr.22 – 25, 2008

Test Requested : (1) In accordance with the RoHS Directive 2002/95/EC, and its amendment directives,  
(2) To determine the Polynuclear Aromatic Hydrocarbons (PAHs) content of the submitted sample.  
(3) As specified by client, to determine the Organic-Tin compounds content of the submitted sample  
(4) To determine the Short Chain Chlorinated Paraffin content of the submitted sample.  
(5) To determine the Formaldehyde content of the submitted sample.  
(6) To determine the Halogen- Fluorine, Chlorine, Bromine, Iodine Content in the submitted sample.  
(7) To determine the PFOS (Perfluorooctane Sulfonates) content of the submitted samples.

Test Method/Test Results : Please refer to next pages

Signed for and on behalf of  
SGS-CSTC Chemical Laboratory



Ella Zhang  
Section Manager

Signed for and on behalf of  
SGS-CSTC Chemical Laboratory



Sandy Hao  
Lab Manager

## Test Report

No. SH8055319/ CHEM

Date: Apr. 28, 2008

Page 2 of 6

Test Method : (1-1) With reference to IEC 62321/2<sup>nd</sup> CDV (111/95/CDV) for Cadmium content  
Analysis was performed by ICP.  
(1-2) With reference to IEC 62321/2<sup>nd</sup> CDV (111/95/CDV) for Lead content  
Analysis was performed by ICP.  
(1-3) With reference to IEC 62321/2<sup>nd</sup> CDV (111/95/CDV) for Mercury content  
Analysis was performed by ICP.  
(1-4) With reference to IEC 62321/2<sup>nd</sup> CDV (111/95/CDV) for Hexavalent  
Chromium by Colorimetric Method.  
(1-5) With reference to IEC 62321/2<sup>nd</sup> CDV (111/95/CDV) for PBBs / PBDEs  
Content.  
Analysis was performed by GC/MS  
(2) With reference to ZEK 01-08, Analysis was performed by Gas Chromatograph /  
Mass Spectrometer (GC/MS)  
(3) With reference to ISO 17353: 2004 with Carbamate, Analysis was performed by  
Gas Chromatograph / Mass Spectrometer (GC/MS).  
(4) With reference to US EPA 8081B: 2000, Analysis was performed by Gas  
Chromatograph / Mass Spectrometer (GC/MS).  
(5) With reference to ISO 17226: 2003 (Update from DIN 53315:1996). Analysis  
was performed by High Performance Liquid Chromatograph-Photodiode Array  
Detection / Mass Spectrometer (HPLC-DAD/MS)  
(6) With reference to EN 14582: 2007.  
(6-1) Determination of Fluorine by Ion Chromatograph (IC) method.  
(6-2) Determination of Chlorine by Ion Chromatograph (IC) method.  
(6-3) Determination of Bromine by Ion Chromatograph (IC) method.  
(6-4) Determination of Iodine by Ion Chromatograph (IC) method.  
(7) With reference to EPA 3550C: 2000.  
Analysis was performed by High Performance Liquid Chromatograph-Mass  
Spectrometer (HPLC-MS).

# Test Report

No. SH8055319/ CHEM

Date: Apr. 28, 2008

Page 3 of 6

Test results by chemical method (Unit: mg/kg)

(1) Cadmium, Lead, Mercury, Hexavalent Chromium and PBBs/PBBEs Content

Test Item(s):	Method (refer to)	1	MDL	RoHS Limit
Cadmium(Cd)	(1-1)	ND	2	100
Lead (Pb)	(1-2)	ND	2	1000
Mercury (Hg)	(1-3)	ND	2	1000
Hexavalent Chromium (CrVI)	(1-4)	ND	2	1000
Sum of PBBs		ND	-	1000
Monobromobiphenyl		ND	5	-
Dibromobiphenyl		ND	5	-
Tribromobiphenyl		ND	5	-
Tetrabromobiphenyl		ND	5	-
Pentabromobiphenyl		ND	5	-
Hexabromobiphenyl		ND	5	-
Heptabromobiphenyl		ND	5	-
Octabromobiphenyl		ND	5	-
Nonabromobiphenyl		ND	5	-
Decabromobiphenyl		ND	5	-
Sum of PBDEs (Note 4)	(1-5)	ND	-	1000
Monobromodiphenyl ether		ND	5	-
Dibromodiphenyl ether		ND	5	-
Tribromodiphenyl ether		ND	5	-
Tetrabromodiphenyl ether		ND	5	-
Pentabromodiphenyl ether		ND	5	-
Hexabromodiphenyl ether		ND	5	-
Heptabromodiphenyl ether		ND	5	-
Octabromodiphenyl ether		ND	5	-
Nonabromodiphenyl ether		ND	5	-
Decabromodiphenyl ether		ND	5	-
Sum of PBDEs (Mono to Deca)		ND	-	-

(2)PAHs (Polynuclear Aromatic Hydrocarbons) content

Test Item(s)	Method (refer to)	1	MDL
Naphthalene	(2)	ND	0.2
Acenaphthylene		ND	0.2
Acenaphthene		ND	0.2
Fluorene		ND	0.2
Phenanthrene		ND	0.2
Anthracene		ND	0.2
Fluoranthene		ND	0.2
Pyrene		ND	0.2
Benzo(a)anthracene		ND	0.2
Chrysene		ND	0.2
Benzo(b)fluoranthene		ND	0.2
Benzo(k)fluoranthene		ND	0.2
Benzo(a)pyrene		ND	0.2
Indeno(1,2,3-c,d)pyrene		ND	0.2
Dibenzo(a,h)anthracene		ND	0.2
Benzo(g,h,i)perylene		ND	0.2
Sum of 16 PAHs	ND	0.2	

ZEK 01-08 : Restraining maximum values for products

Parameter	Category 1	Category 2	Category 3
	Materials in contact with foodstuff or materials which are meant to put in the mouth as well as toys for children <36 months	Materials with foreseeable skin contact >30 s (prolonged skin contact) and toys not covered by category 1	Materials with foreseeable skin contact <30 s (short time skin contact) or without skin contact
Benzo[a]pyrene (mg/kg)	<MDL (<0.2)**	1	20
Sum of 16 EPA-PAH (mg/kg)*	<MDL (<0.2)**	10	200

Remark : \* = Only PAH substances >0.2 mg/kg are taken into account while calculating the sum of PAHs

\*\* = In case that the maximum values exceed the limits of category 1, but are within the limits of category 2, one may confirm the suitability of the tested material for contact with foodstuff or oral mucosa by additional specific migration tests of PAH components based on DIN EN 1186ff and §64 LFGB 80.30-1. The conclusion of the migration test results must be made based on food law criteria.

## Test Report

No. SH8055319/ CHEM

Date: Apr. 28, 2008

Page 5 of 6

### (3) Organic-tin compounds content(Unit: mg/kg)

Test Item(s):	Method (refer to)	1	MDL
Organic-Tin compounds content	(3)	-	-
Tributyl tin (TBT)		ND	0.5
Triphenyl tin (TPT)		ND	0.5

### (4) Short Chain Chlorinated Paraffin content

Test Item(s):	Method (refer to)	1	MDL
Short Chain Chlorinated Paraffin	(4)	ND	30

### (5) Formaldehyde content

Test Item(s):	Method (refer to)	1	MDL
Formaldehyde	(5)	ND	10

### (6) Fluorine, Chlorine, Bromine, Iodine Content

Test Item(s):	Method (refer to)	1	MDL
Fluorine(F)	(6-1)	ND	50
Chlorine(Cl)	(6-2)	ND	50
Bromine(Br)	(6-3)	ND	50
Iodine(I)	(6-4)	ND	50

### (7) PFOS (Perfluorooctane Sulfonates) content

Test Items	Test method (refer to)	1	MDL	Limit
Perfluorooctane Sulfonates (PFOS) PFOS – Acid PFOS – Metal Salt	(7)	ND	10	See Note (7)

#### Test Part Description:

1. White solid pellet

## Test Report

No. SH8055319/ CHEM

Date: Apr. 28, 2008

Page 6 of 6

### Note:

- (1) mg/kg = ppm
- (2) ND = Not Detected
- (3) MDL = Method Detection Limit
- (4) Sum of Mono to NonaBDE & according to 2005/717/EC DecaBDE is exempt.
- (5) "-" = Not Regulated
- (6) The maximum permissible limit is quoted from the document 2005/618/EC amending RoHS directive 2002/95/EC
- (7) Reference Information: Directive 2006/122/EC
  - (i) May not be placed on the market or used as a substance or constituent of preparations in a concentration equal to or higher than 0,005 % by mass.
  - (ii) May not be placed on the market in semi-finished products or articles, or parts thereof, if the concentration of PFOS is equal to or higher than 0,1 % by mass calculated with reference to the mass of structurally or microstructurally distinct parts that contain PFOS or, for textiles or other coated materials, if the amount of PFOS is equal to or higher than  $1 \mu\text{g}/\text{m}^2$  of the coated material.

### Sample photo:



SGS authenticate the photo on original report only

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