

Test Report Date: 08 Jul 2016 No. TSNEC1601179901 Page 1 of 11

SHANDONG SINCHEM SILICA GEL CO.,LTD

XINXU INDUSTRIAL PARK DONGGUO TOWN TENGZHOU CITY SHANDONG PROVINCE CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as: SILICA GEL

SGS Job No.: TP16-004946 - TJ

Date of Sample Received: 04 Jul 2016

Testing Period: 04 Jul 2016 - 08 Jul 2016

Test Requested: Selected test(s) as requested by client.

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

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

Based on the performed tests on submitted sample(s), the results of Lead, Conclusion:

Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs),

Polybrominated diphenyl ethers (PBDEs) and Phthalates such as

Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl

phthalate (DBP), and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

When tested as specified, Dimethyl fumarate (DMF) content of the submitted

sample comply with the requirement of Commission Regulation (EU) No

412/2012 and Entry 61 of Annex XVII of REACH Regulation (EC) No 1907/2006.

Signed for and on behalf of

SGS-CSTC Standards Technical Services (Tianjin) Co., Ltd.

Reabeca Zhou

Approved Signatory



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Test Results:

### Test Part Description:

Specimen No. SGS Sample ID Description TSN16-011799.001 SN<sub>1</sub> translucent grains

#### Remarks:

(1) 1 mg/kg = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected ( < MDL )

(4) "-" = Not Regulated

## RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

(1) With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES. Test Method:

(2) With reference to IEC 62321-5:2013, determination of Lead by ICP-OES.

(3) With reference to IEC 62321-4:2013, determination of Mercury by ICP-OES.

(4) With reference to IEC 62321:2008, determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.

(5) With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.

(6) With reference to IEC 62321-8 (111/321/CD), determination of phthalates by GC-MS.

Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	2	ND
Sum of PBBs	1000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1000	mg/kg	-	ND



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Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>	
Monobromodiphenyl ether	-	mg/kg	5	ND	
Dibromodiphenyl ether	-	mg/kg	5	ND	
Tribromodiphenyl ether	-	mg/kg	5	ND	
Tetrabromodiphenyl ether	-	mg/kg	5	ND	
Pentabromodiphenyl ether	-	mg/kg	5	ND	
Hexabromodiphenyl ether	-	mg/kg	5	ND	
Heptabromodiphenyl ether	-	mg/kg	5	ND	
Octabromodiphenyl ether	-	mg/kg	5	ND	
Nonabromodiphenyl ether	-	mg/kg	5	ND	
Decabromodiphenyl ether	-	mg/kg	5	ND	
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND	
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND	
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND	
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND	

#### Notes:

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.

### <u>Halogen</u>

Test Method: With reference to EN 14582: 2007, analysis was performed by Ion Chromatograph (IC).

Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Fluorine (F)	mg/kg	50	ND
Chlorine (CI)	mg/kg	50	ND
Bromine (Br)	mg/kg	50	ND
Iodine (I)	mg/kg	50	ND

### Element(s)

Test Method: With reference to US EPA Method 3052:1996, analysis was performed by ICP-OES.

Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Cobalt (Co)	mg/kg	5	ND



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## Perfluorooctane Sulfonates (PFOS) and Perfluorooctanoic Acid (PFOA)

Test Method: With reference to CEN/TS 15968:2010, analysis was performed by LC-MS.

Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Perfluorooctane Sulfonates (PFOS)^	10	mg/kg	10	ND
Perfluorooctanoic Acid (PFOA)	-	mg/kg	10	ND

#### Notes:

- (1) Max. limit specified by commission regulation (EU) No. 757/2010 amending Regulation (EC) No. 850/2004 (previously restricted under entry 53 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006).
- (2) ^: PFOS refer to Perfluorooctanesulfonic acid and its derivatives including Perfluoroctanesulfonic acid, Perfluoroctane sulfonamide, N-Methylperfluoroctane sulfonamide, N-Ethylperfluoroctane sulfonamide, N-Methylperfluoroctane sulfonamidoethanol and N-Ethylperfluoroctane sulfonamidoethanol.

## Commission Regulation (EU) No 412/2012 and Entry 61 of Annex XVII of REACH Regulation (EC) No 1907/2006 - Dimethyl fumarate(DMF)

Test Method: Solvent extraction, analysis was performed by GC-MS.

Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Dimethyl fumarate(DMF)	0.1	mg/kg	0.1	ND



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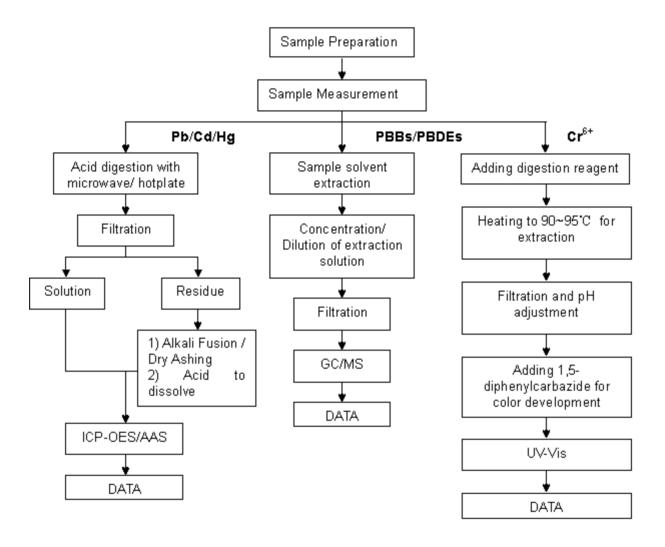
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#### **ATTACHMENTS**

## Cd/Pb/Hg/Cr<sup>6+</sup>/PBBs&PBDEs Flow Chart

- 1) Name of the person who made testing: Teresa Wei/Iwy Hou/Ray Liang
- 2) Name of the person in charge of testing: Aaron Wang/Angell Yao/Rex Zhu
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr6+ and PBBs/PBDEs test method excluded)





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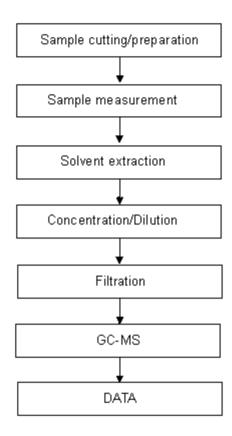
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### **ATTACHMENTS**

## Phthalate Testing Flow Chart

- 1) Name of the person who made testing: Cathy Cui
- 2) Name of the person in charge of testing: Rex Zhu





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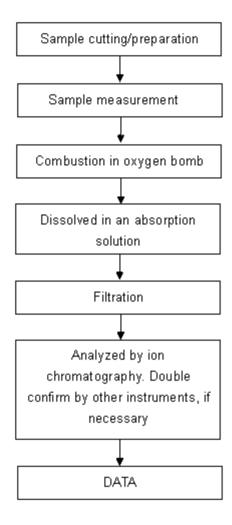
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### **ATTACHMENTS**

## **Halogen Testing Flow Chart**

1) Name of the person who made testing: Wang Jin

2) Name of the person in charge of testing: Rex Zhu





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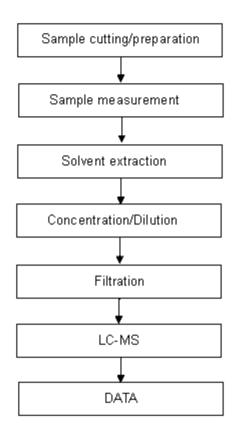
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## PFOS/PFOA Testing Flow Chart

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- 2) Name of the person in charge of testing: Rex Zhu





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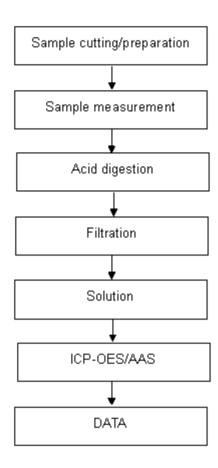
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### **ATTACHMENTS**

## **Elementary Testing Flow Chart**

- 1) Name of the person who made testing: Teresa Wei
- 2) Name of the person in charge of testing: Aaron Wang





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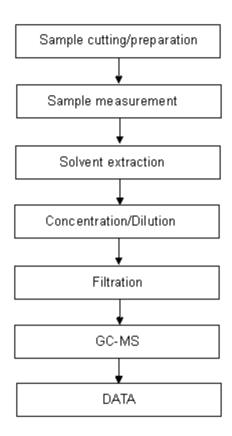
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## **DMF Testing Flow Chart**

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- 2) Name of the person in charge of testing: Rex Zhu





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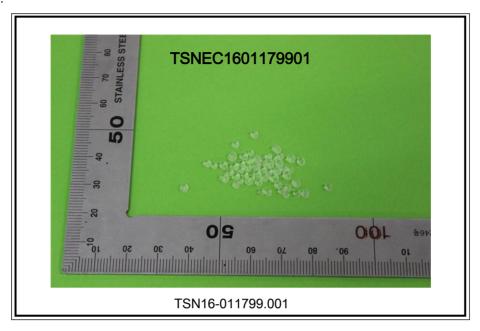
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Sample photo:



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