

## Test Report

No. TSNEC1200423401

Date: 18 May 2012

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**ZHAOYUAN HUIYUAN SILICA GEL CO., LTD.**  
**530, JINHUI ROAD, ZHAOYUAN, SHANDONG, CHINA**

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

(1) SILICA GEL WHITE (2) SILICA GEL ORANGE (3) SILICA GEL BLUE COBALT FREE

SGS Job No. : TP12-005817 - TJ  
Composition : SiO<sub>2</sub>  
Model No : 2-4MM  
Date of Sample Received : 14 May 2012  
Testing Period : 14 May 2012 - 17 May 2012

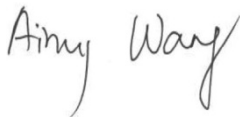
Test Requested : Selected test(s) as requested by client.

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

Test Results : Please refer to next Page(s)

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead Mercury, Cadmium, Hexavalent Chromium, Polybrominated biphenyls (PBB) Polybrominated diphenyl ethers (PBDE) comply with the limites as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of  
SGS-CSTC Chemical Laboratory



Aimy Wang  
Approved signatory

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### Test Results:

#### Test Part Description:

Specimen No.	SGS Sample ID	Description
	TSN12-004234.001	white grains
	TSN12-004234.002	Orange grains
	TSN12-004234.003	Blue grains

RoHS Directive 2011/65/EU

Test Method: With reference to IEC 62321:2008

1. Determination of Cadmium by ICP-OES.
2. Determination of Lead by ICP-OES.
3. Determination of Mercury by ICP-OES.
4. Determination of Hexavalent Chromium by Colorimetric Method using UV-VIS.
5. Determination of PBBs/PBDEs content by GC-MS.

Test Item(s)	Unit	Result	MDL	Limit
Cadmium (Cd)	mg/kg	N.D.		100
Lead (Pb)	mg/kg	N.D.		1000
Mercury (Hg)	mg/kg	N.D.		1000
Hexavalent Chromium (CrVI) by	mg/kg	N.D.		1000
Sum of PBBs	mg/kg	N.D.	-	1000
Monobromobiphenyl	mg/kg	N.D.		-
Dibromobiphenyl	mg/kg	N.D.		-
Tribromobiphenyl	mg/kg	N.D.		-
Tetrabromobiphenyl	mg/kg	N.D.		-
Pentabromobiphenyl	mg/kg	N.D.		-
Hexabromobiphenyl	mg/kg	N.D.		-
Heptabromobiphenyl	mg/kg	N.D.		-
Octabromobiphenyl	mg/kg	N.D.		-
Nonabromobiphenyl	mg/kg	N.D.		-
Decabromobiphenyl	mg/kg	N.D.		-
Sum of PBDEs	mg/kg	N.D.	-	1000
Monobromodiphenyl ether	mg/kg	N.D.		-

#### Note:

1. 1mg/kg = 1ppm=0.0001%
2. N.D. = Not Detected (<MDL)
3. MDL = Method Detection Limit
4. "-" = Not regulated

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Test Item(s)	Unit	Result	MDL	Limit
Dibromodiphenyl ether	mg/kg	N.D.		-
Tribromodiphenyl ether	mg/kg	N.D.		-
Tetrabromodiphenyl ether	mg/kg	N.D.		-
Pentabromodiphenyl ether	mg/kg	N.D.		-
Hexabromodiphenyl ether	mg/kg	N.D.		-
Heptabromodiphenyl ether	mg/kg	N.D.		-
Octabromodiphenyl ether	mg/kg	N.D.		-
Nonabromodiphenyl ether	mg/kg	N.D.		-
Decabromodiphenyl ether	mg/kg	N.D.		-

### Notes:

1. The maximum permissible limit is quoted from directive 2011/65/EU, Annex II.

### Dimethyl Fumarate (DMF)

#### Commission Decision 2012/48/EU (previously restricted under 2011/135/EU, 2010/153/EU and 2009/251/EC) - Dimethyl Fumarate (DMF)

Test Item(s)	Unit	Test Method (Reference)	Result	MDL	Limit
Dimethyl fumarate(DMF)	mg/kg	Solvent extraction, GC-MS	N.D.	0.1	0.1

### Note:

1. mg/kg = ppm
2. N.D. = Not Detected (<MDL)
3. MDL = Method Detection Limit
4. Recommended Max limit is with reference to Commission Decision 2011/135/EU (previously restricted under 2010/153/EU and 2009/251/EC)

### Halogen

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

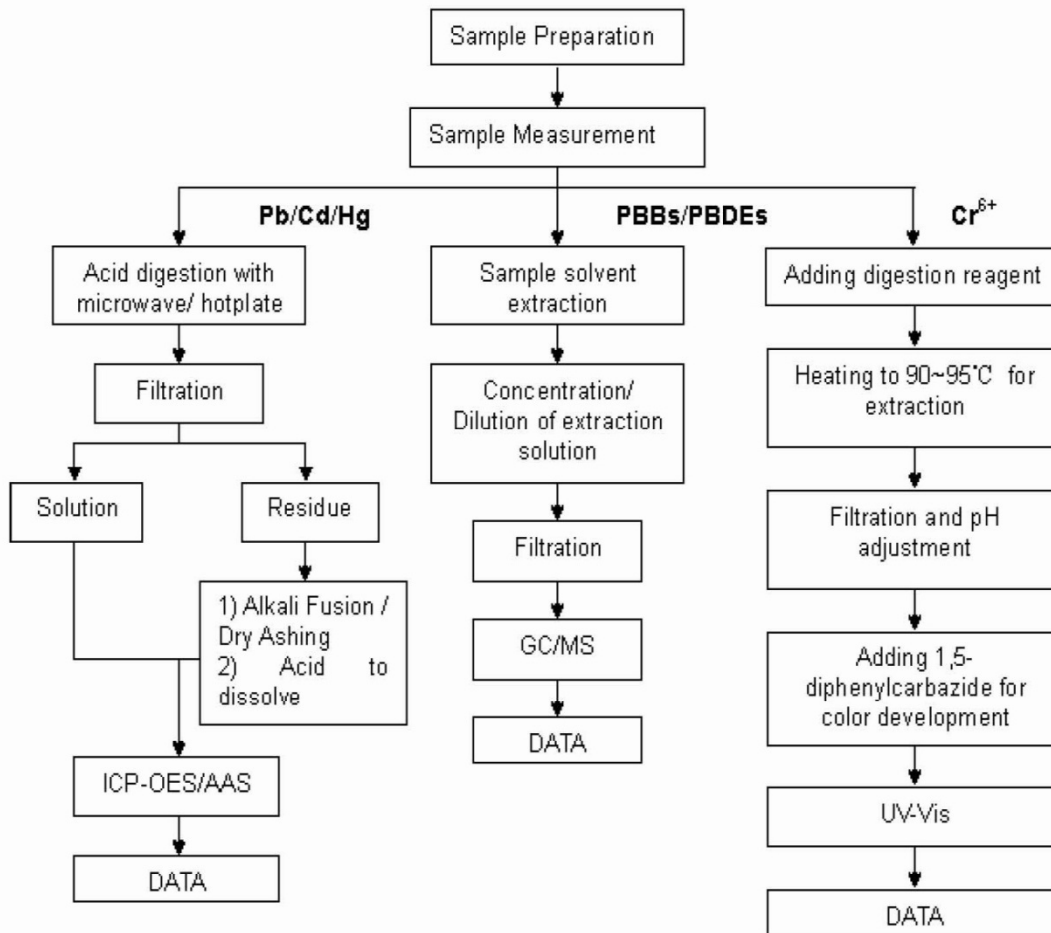
Test item(s)	Unit	Result	MDL
Fluorine(F)	mg/kg	N.D.	50
Chlorine(Cl)	mg/kg	N.D.	50
Bromine(Br)	mg/kg	N.D.	50
Iodine(I)	mg/kg	N.D.	50

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**ATTACHMENTS**

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

- 1) Name of the person who made testing: Sky Shi/Aaron Wang/Winnie Zhang/Angell Yao
- 2) Name of the person in charge of testing: Cindy Yin/Rex Zhu
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> and PBBs/PBDEs test method excluded)



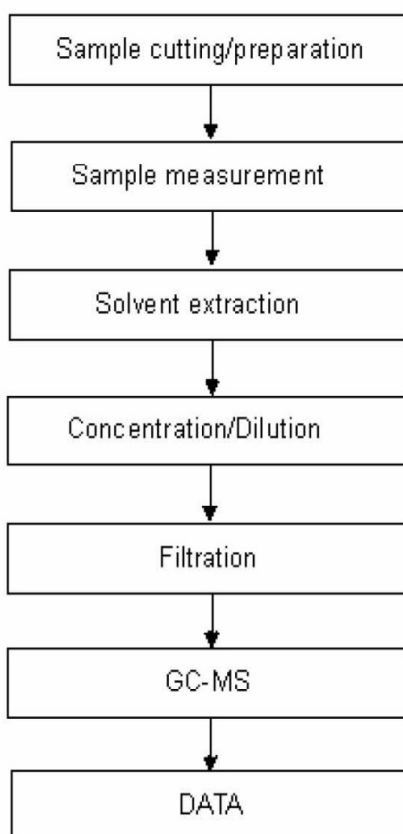
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## ATTACHMENTS

### DMF Testing Flow Chart

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



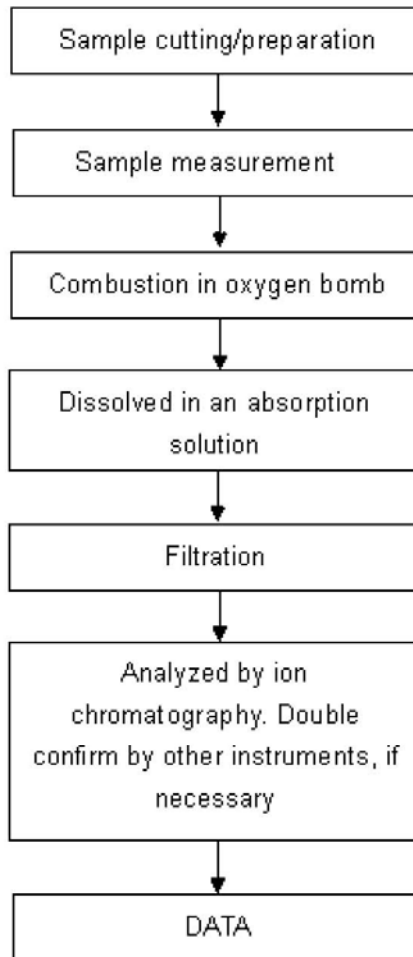
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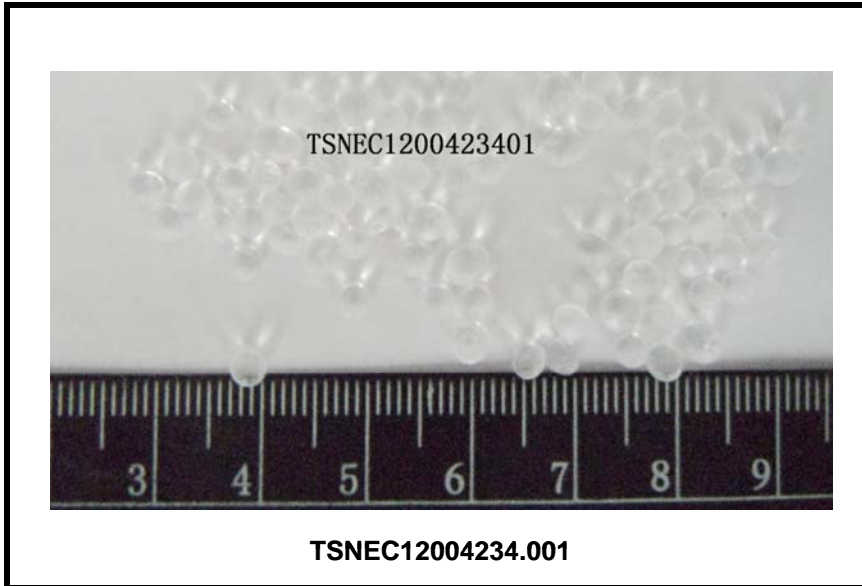
### Halogen Testing Flow Chart

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



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Sample(s) photo: (1) SILICA GEL WHITE



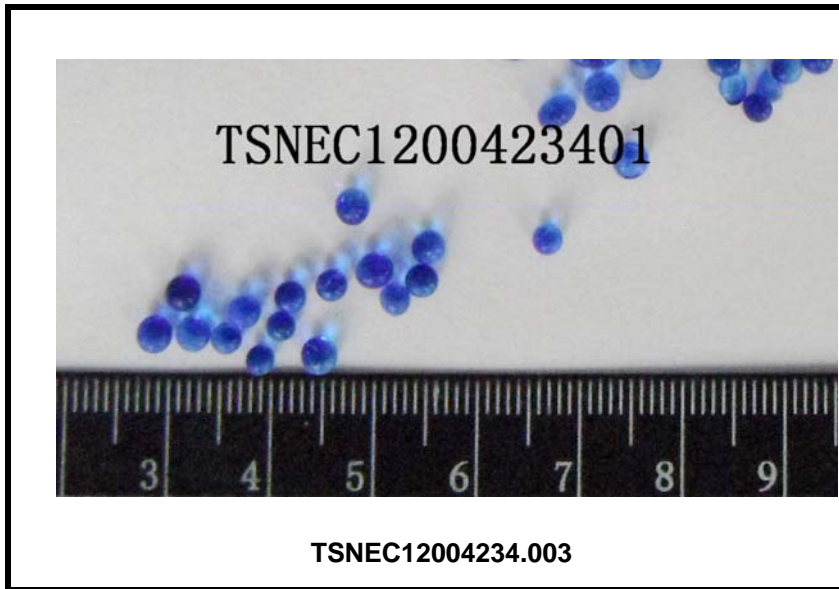
(2) SILICA GEL ORANGE



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(3) SILICA GEL BLUE COBALT FREE



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

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