



## Test Report

No. GZ1009109490/CHEM Date: SEP 28, 2010

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HARMONY ELECTRONICS (SHEN ZHEN) CO., LTD  
QIAOTANG RD, TANGWEI VILLAGE, FUYONG TOWN, SHENZHEN CITY

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

SGS Job No. : SZ12739364  
SGS Internal Reference No. : 3.2  
Tested sample information : SMD-49S  
Date of Sample Received : SEP 21, 2010  
Testing Period : SEP 21, 2010 TO SEP 28, 2010

Test Requested A, C&D: Selected test(s) as requested by client.  
B: Selected test (s) with reference to EU COM(2008 ) 809/final as requested by client.

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

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

Signed for and on behalf of  
SGS-CSTC Ltd.

Manson Yang  
Approved Signatory

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Member of the SGS Group (SGS SA)

**Test Sample:**

Sample Description :

**Specimen No. Description**

- No.1 Black plastic
- No.2 Black part w/ silvery metal (mixed)

**A:**

**Test Method:**

SGS In-House method-RSTS-EE-SVHC-003, Analyzed by GC-MS.

**Test Result:**

Substance Name	CAS No.	EC No.	Concentration (%)	RL(%)
			No.1	
Benzyl butyl phthalate (BBP)	85-68-7	201-622-7	ND	0.050
Bis(2-ethylhexyl)phthalate (DEHP)	117-81-7	204-211-0	ND	0.050
Dibutyl phthalate (DBP)	84-74-2	201-557-4	ND	0.050
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified ( $\alpha$ -HBCDD, $\beta$ -HBCDD, $\gamma$ -HBCDD) $\Delta$	25637-99-4 and 3194-55-6	247-148-4 and 221-695-9	ND	0.050

Notes:

- (1) RL = Reporting Limit. All RL are based on homogenous material
- ND = Not detected (lower than RL), ND is denoted on the target compound.

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## B: RoHS Directive 2002/95/EC

Test Item(s)	Unit	Test Method (Reference)	No.1	MDL	Limit
Cadmium (Cd)	mg/kg	IEC 62321: 2008, ICP-OES	N.D.	2	100
Lead (Pb)	mg/kg	IEC 62321: 2008, ICP-OES	N.D.	2	1000
Mercury (Hg)	mg/kg	IEC 62321: 2008, ICP-OES	N.D.	2	1000
Hexavalent Chromium (CrVI) by alkaline extraction	mg/kg	IEC 62321: 2008, UV-Vis	N.D.	2	1000
Sum of PBBs	mg/kg	-	N.D.	-	1000
Monobromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Dibromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Tribromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Tetrabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Pentabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Hexabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Heptabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Octabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Nonabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Decabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Sum of PBDEs	mg/kg	-	N.D.	-	1000
Monobromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Dibromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Tribromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Tetrabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Pentabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Hexabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Heptabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Octabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Nonabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Decabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	

### Note:

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

## HBCDD & Phthalate(s)

Test Item(s)	Unit	Test Method (Reference)	No.1	MDL
Hexabromocyclododecane (HBCDD)	mg/kg	SGS In-House method-RSTS-EE-SVHC-003, GC-MS	N.D.	500
Dibutyl Phthalate (DBP)	%(w/w)	SGS In-House method-RSTS-EE-SVHC-003, GC-MS	N.D.	0.050
Benzylbutyl Phthalate (BBP)	%(w/w)	SGS In-House method-RSTS-EE-SVHC-003, GC-MS	N.D.	0.050
Di-(2-ethylhexyl) Phthalate (DEHP)	%(w/w)	SGS In-House method-RSTS-EE-SVHC-003, GC-MS	N.D.	0.050

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### Note :

- 1. mg/kg = ppm, 0.1% = 1000ppm
- 2. N.D. = Not detected (< MDL)
- 3. MDL= Method Detection Limit

### RoHS Directive 2002/95/EC

Test Item(s)	Unit	Test Method (Reference)	No.2	MDL	Limit
Cadmium (Cd)	mg/kg	IEC 62321: 2008, ICP-OES	N.D.	2	100
Lead (Pb)	mg/kg	IEC 62321: 2008, ICP-OES	8	2	1000
Mercury (Hg)	mg/kg	IEC 62321: 2008, ICP-OES	N.D.	2	1000
Hexavalent Chromium (CrVI) by alkaline extraction	mg/kg	IEC 62321: 2008, UV-Vis	N.D.	2	1000
Sum of PBBs	mg/kg	-	N.D.	-	1000
Monobromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Dibromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Tribromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Tetrabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Pentabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Hexabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Heptabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Octabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Nonabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Decabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Sum of PBDEs	mg/kg	-	N.D.	-	1000
Monobromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Dibromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Tribromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Tetrabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Pentabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Hexabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Heptabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Octabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Nonabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Decabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	

### Note:

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

### HBCDD & Phthalate(s)

Test Item(s)	Unit	Test Method (Reference)	No.2	MDL
Hexabromocyclododecane (HBCDD)	mg/kg	SGS In-House method-RSTS-EE-SVHC-003, GC-MS	N.D.	500
Dibutyl Phthalate (DBP)	%(w/w)	SGS In-House method-RSTS-EE-SVHC-003, GC-MS	N.D.	0.050

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Benzylbutyl Phthalate (BBP)	%(w/w)	SGS In-House method-RSTS-EE-SVHC-003, GC-MS	N.D.	0.050
Di-(2-ethylhexyl) Phthalate (DEHP)	%(w/w)	SGS In-House method-RSTS-EE-SVHC-003, GC-MS	N.D.	0.050

### Note :

1. mg/kg = ppm, 0.1% = 1000ppm
2. N.D. = Not detected (< MDL)
3. MDL= Method Detection Limit

### C: PFOS (Perfluorooctane sulfonates)

Test Item(s)	Unit	Test Method (Reference)	No.1	No.2	MDL
Perfluorooctane sulfonates (PFOS)					
PFOS – Acid	mg/kg	EPA 3550C: 2007, LC-MS	N.D.	N.D.	10
PFOS – Metal Salt					
PFOS – Amide					

### Note:

1. mg/kg = ppm
2. N.D. = Not Detected (< MDL)
3. MDL = Method Detection Limit

For reference: Entry 53 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2006/122/EC):

- (1) 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.
- (2) 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 1µg /m<sup>2</sup> of the coated material.

### D: Halogen

Test Item(s)	Unit	Test Method (Reference)	No.1	No.2	MDL
Fluorine (F)	mg/kg	BS EN 14582:2007, IC	763	139	50
Chlorine (Cl)	mg/kg	BS EN 14582:2007, IC	569	N.D.	50
Bromine (Br)	mg/kg	BS EN 14582:2007, IC	N.D.	N.D.	50
Iodine (I)	mg/kg	BS EN 14582:2007, IC	N.D.	N.D.	50

### Note:

1. mg/kg = ppm
2. N.D. = Not Detected (< MDL)
3. MDL = Method Detection Limit

Remark 1: Results of specimen 2 shown are of the total weight of mixed samples.

Remark 2: The specimen 2 was/were analyzed on behalf of the applicant as mixing sample in one testing. The above result(s) was/were only given as the informality value and only for reference.

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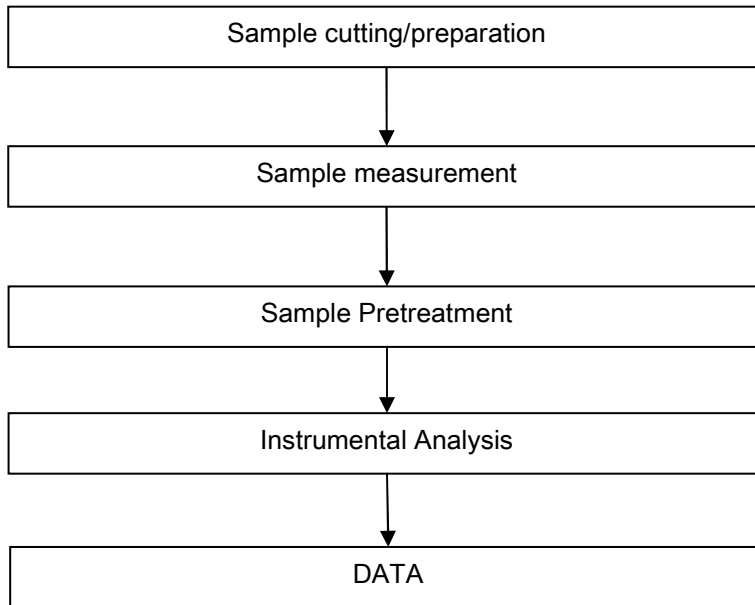
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## ATTACHMENTS

### Testing Flow Chart

- 1) Name of the person who made testing: Bella Wang / Tina Zhao
- 2) Name of the person in charge of testing: Adams Yu / Ryan Yang



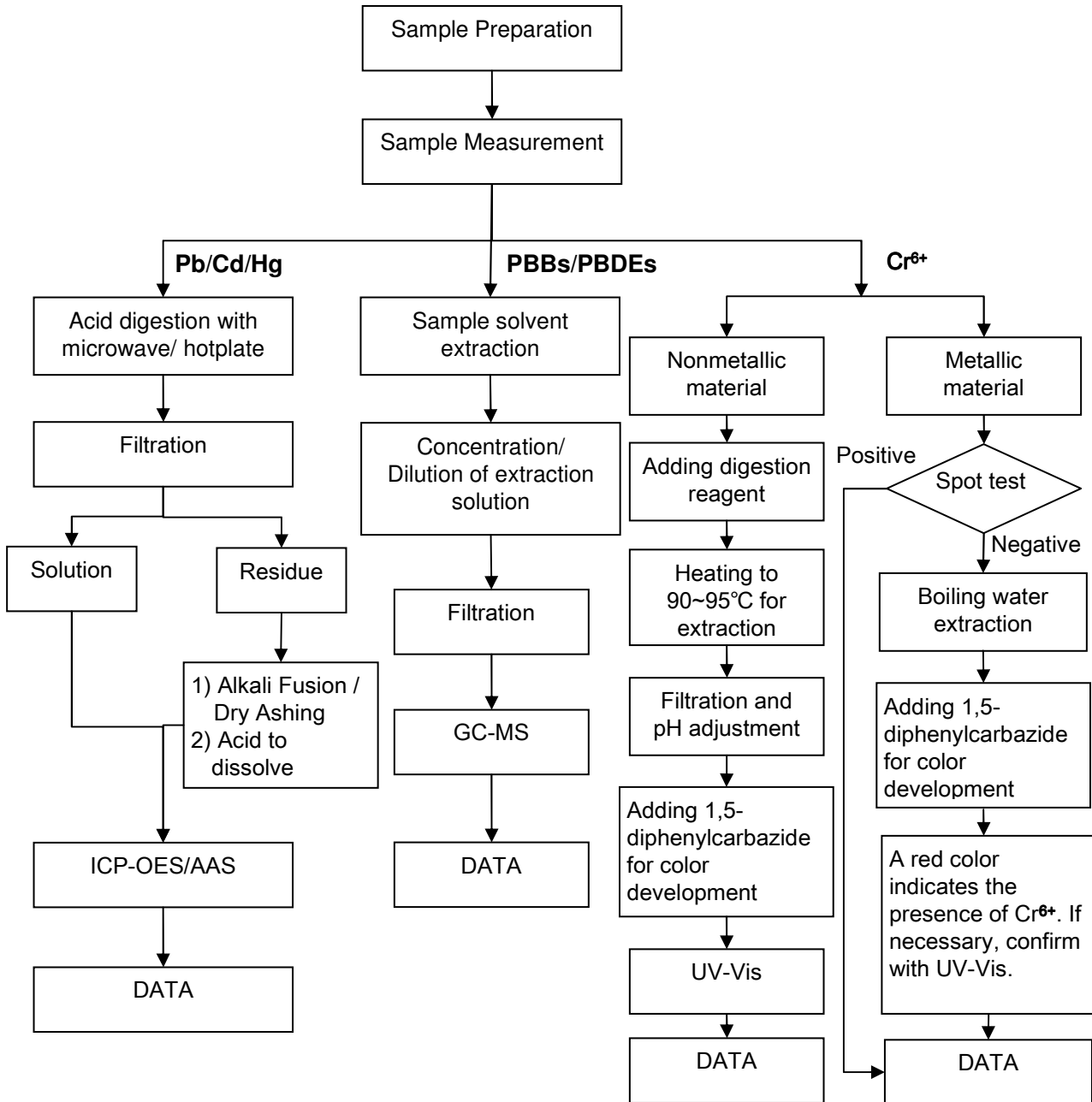
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ATTACHMENTS

**RoHS Testing Flow Chart**

- 1) Name of the person who made testing: Bella Wang / Cutey Yu / Ross Zhan
- 2) Name of the person in charge of testing: Adams Yu / Ryan Yang
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr6+ and PBBs/PBDEs test method excluded).



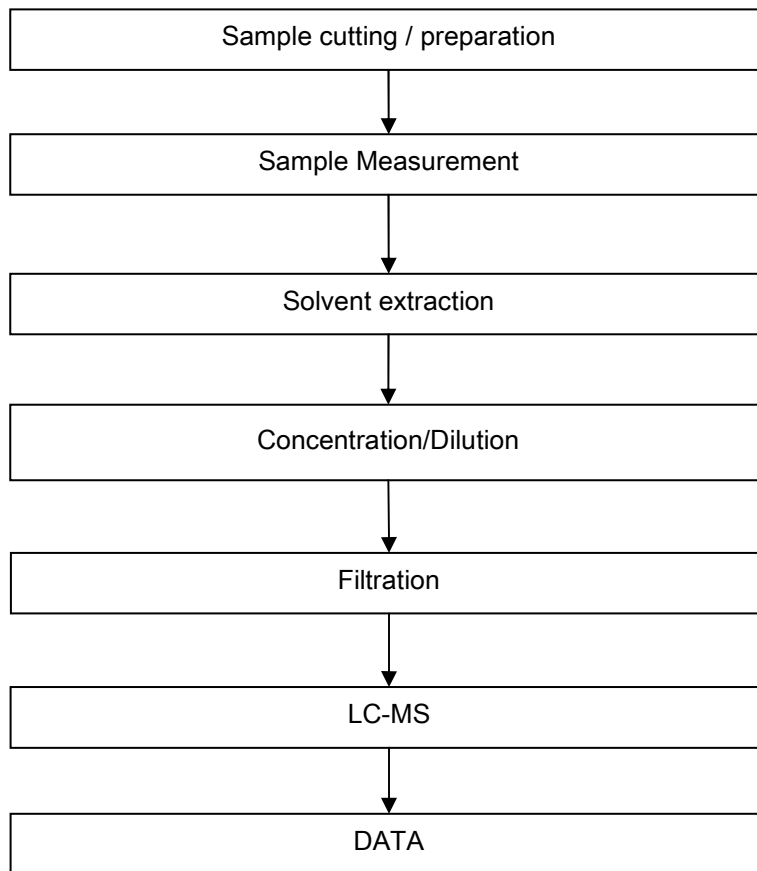
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### PFOA / PFOS Testing Flow Chart

- 1) Name of the person who made testing: Cindy Huang
- 2) Name of the person in charge of testing: Ryan Yang

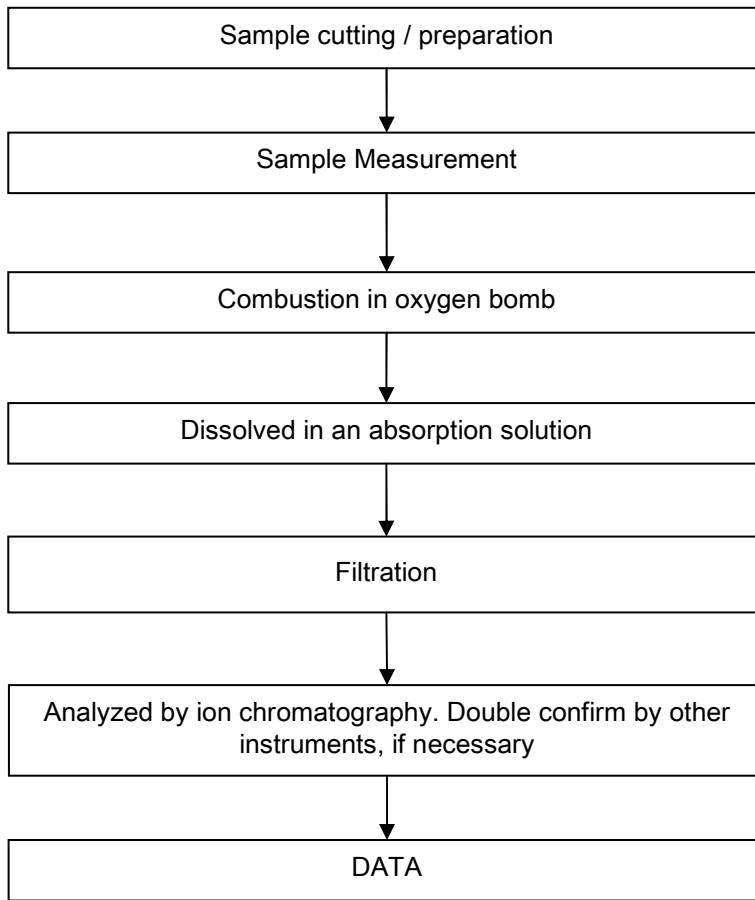


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## ATTACHMENTS

### Halogen Testing Flow Chart

- 1) Name of the person who made testing: Liang Wang
- 2) Name of the person in charge of testing: Michelle Song



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Sample photo:



SGS authenticate the photo on original report only

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