

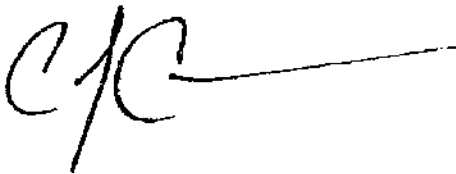
Report Date: 27 September 2016

File Number: 316G2882.001

Client: **Trina Solar (U.S.), Inc.**
100 Century Center Court, Suite 501
San Jose, CA 94595 USA
Test Model(s) Identification: Framed Solar Cell Module / DD05A.08(II)

Customer Test Instructions:

Test specification:	Test result:
Toxicity Characteristic Leaching Procedure (TCLP) –	Pass

Checked by:
Tested by:



9/27/2016
 Date Name Signature
 Cody Carson
 Laboratory Technician

9/27/2016
 Date Name Signature
 Mark Smith
 Laboratory Manager

Testing Period: September 15, 2016 - September 27, 2016

Test Sample: DD05A.08(II) Framed Solar Cell Module

Associated Products:

72-cell [DD14A(II)] and 60-cell [DD05A.08(II) & DD05A.05(II)] MONO framed modules

RESULTS:

Toxicity Characteristic Leaching Procedure (TCLP)

METHOD SUMMARY:

An aliquot of sample is leached with an acetic acid / sodium hydroxide solution at a 1:20 mix of sample to solvent. The leachate mixture is sealed in extraction vessel and tumbled for 18 hours to simulate an extended leaching time in the ground. It is then filtered and the solution is then analyzed for contaminants listed in Table 1.

RESULTS SUMMARY

See attached Addendum

See attached Addendum**TABLE 1 – TCLP – Maximum Concentrations**

EPA Waste Number	Contaminant	Regulatory Level (mg/l)
D004	Arsenic	5.000
D005	Barium	100.000
D006	Cadmium	1.000
D007	Chromium	5.000
D008	Lead	5.000
D009	Mercury	0.200
D010	Selenium	1.000
D011	Silver	5.000

Sample Photos:

--END--

Addendum



Analytical Report

1702 East Central Avenue Suite 10
 Bentonville, AR 72712
 479-271-7996 phone
 479-271-8394 fax

09/27/16 08:58

Client: TUV Rheinland Of North America Inc
 2709 SE Otis Corley Suite 11
 Bentonville AR, 72712
 Attn: Mark Smith

Work Order: BI60078
 Project Name: TCLP
 Project Number: [none]
 Date Received: 09/15/16

Environmental Testing Group

Metals by EPA 6000 Series Methods

Analyte	Result	Q	Units	PQL	Dil Factor	Analyzed Date/Time	Analyst	Method	Batch
BI60078-01 (Solid) Sampled: 09/14/16 13:30					Client Sample Name: DD05-316G2882.001 TCLP				
Arsenic	ND		mg/L	0.0250	25	09.22.16 16:30	MBM	SW846-6020A	B612103
Barium	0.486		"	0.0500	50	"	MBM	"	"
Cadmium	ND		"	0.0500	"	"	MBM	"	"
Chromium	ND		"	0.0500	"	"	MBM	"	"
Lead	4.48		"	0.0500	"	"	MBM	"	"
Mercury	ND		"	0.00100	"	09.23.16 16:55	MBM	"	B612207
Selenium	ND		"	0.0500	"	09.22.16 16:30	MBM	"	B612103
Silver	ND		"	0.0500	"	"	MBM	"	"

TCLP Extraction by EPA 1311

Analyte	Result	Q	Units	PQL	Dil Factor	Analyzed Date/Time	Analyst	Method	Batch
BI60078-01 (Solid) Sampled: 09/14/16 13:30					Client Sample Name: DD05-316G2882.001 TCLP				
TCLP Filterable Solids	100		% by Weight	0.00100	1	09.22.16 16:30	MBM	EPA 1311	B612103

Report Date: 19 July 2016


File Number: 316G2244.001

Client: **JinkoSolar (U.S.) Inc.**
 595 Market Street, Suite 2200
 San Francisco, CA 94105 USA

Model(s) Identification: JK06D – 60 & 72 Cell Modules with Junction Box

Customer Test Instructions:

<i>Test specification:</i>	<i>Test result:</i>
Toxicity Characteristic Leaching Procedure (TCLP) –	Pass

Checked by:
Tested by:



 7/19/2016
 Date

 Cody Carson
 Laboratory Technician
 Name Signature

 7/19/2016
 Date

 Mark Smith
 Laboratory Manager
 Name Signature

Testing Period: July 11, 2016 - July19, 2016

RESULTS
Test Samples: JK06D – 60 Cells Standard Module JB
 JK06D – 72 Cells Standard Module JB

Toxicity Characteristic Leaching Procedure (TCLP)

METHOD SUMMARY:

An aliquot of sample is leached with an acetic acid / sodium hydroxide solution at a 1:20 mix of sample to solvent. The leachate mixture is sealed in extraction vessel and tumbled for 18 hours to simulate an extended leaching time in the ground. It is then filtered and the solution is then analyzed for contaminants listed in Table 1.

RESULTS SUMMARY

No analyte concentrations exceeded the maximums allowed. (see addendum report)

TABLE 1 – TCLP – Maximum Concentrations

EPA Waste Number	Contaminant	Regulatory Level (mg/l)
D004	Arsenic	5.000
D005	Barium	100.000
D006	Cadmium	1.000
D007	Chromium	5.000
D008	Lead	5.000
D009	Mercury	0.200
D010	Selenium	1.000
D011	Silver	5.000

Sample Photos:

--END--



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Analytical Report

07/18/16 13:29

Client: TÜV Rheinland Of North America Inc
 2709 SE Otis Corley Suite 11
 Bentonville AR. 72712
 Attn: Mark Smith

Work Order: BG60047
 Project Name: TCLP 7-8-16
 Project Number: TCLP 7-8-16
 Date Received: 07/12/16

Environmental Testing Group

Metals by EPA 6000 Series Methods

Analyte	Result	Q	Units	PQL	Dil Factor	Analyzed Date/Time	Analyst	Method	Batch
BG60047-01 (Solid) Sampled: 07/08/16 12:45			Client Sample Name: Jinko Solar JK06D 60 Cell Standard TC						
Arsenic	ND		mg/L	0.100	100	07-15-16 09:32	MBM	SW846-6020A	B6G1401
Barium	ND		"	0.100	"	"	MBM	"	"
Cadmium	ND		"	0.100	"	"	MBM	"	"
Chromium	ND		"	0.100	"	"	MBM	"	"
Lead	ND		"	0.100	"	"	MBM	"	"
Mercury	ND		"	0.000500	25	07-15-16 12:20	MBM	"	B6G1501
Selenium	ND		"	0.100	100	07-15-16 09:32	MBM	"	B6G1401
Silver	ND		"	0.100	"	"	MBM	"	"
BG60047-02 (Solid) Sampled: 07/08/16 12:45			Client Sample Name: Jinko Solar JK06D 72 Cell Standard TC						
Arsenic	ND		mg/L	0.100	100	07-15-16 09:32	MBM	SW846-6020A	B6G1401
Barium	ND		"	0.100	"	"	MBM	"	"
Cadmium	ND		"	0.100	"	"	MBM	"	"
Chromium	ND		"	0.100	"	"	MBM	"	"
Lead	ND		"	0.100	"	"	MBM	"	"
Mercury	ND		"	0.000500	25	07-15-16 12:20	MBM	"	B6G1501
Selenium	ND		"	0.100	100	07-15-16 09:32	MBM	"	B6G1401
Silver	ND		"	0.100	"	"	MBM	"	"
BG60047-03 (Solid) Sampled: 07/08/16 12:45			Client Sample Name: Jinko Solar JK07B 60 Cell MX JB TCLP						
Arsenic	ND		mg/L	0.100	100	07-15-16 09:32	MBM	SW846-6020A	B6G1401
Barium	ND		"	0.100	"	"	MBM	"	"
Cadmium	ND		"	0.100	"	"	MBM	"	"
Chromium	ND		"	0.100	"	"	MBM	"	"
Lead	ND		"	0.100	"	"	MBM	"	"
Mercury	ND		"	0.000500	25	07-15-16 12:20	MBM	"	B6G1501
Selenium	ND		"	0.100	100	07-15-16 09:32	MBM	"	B6G1401
Silver	ND		"	0.100	"	"	MBM	"	"

Environmental Testing Group

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



1702 East Central Avenue Suite 10
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Analytical Report

07/18/16 13.29

Client TLV Rheinland Of North America Inc,
 2709 SE Otis Corley Suite 11
 Bentonville AR. 72712

Work Order: BG60047
 Project Name: TCLP 7-8-16
 Project Number: TCLP 7-8-16

Attn Mark Smith

Date Received: 07/12/16

Environmental Testing Group

Metals by EPA 6000 Series Methods

Analyte	Result	Q	Units	PQL	Dil Factor	Analyzed Date/Time	Analyst	Method	Batch
BG60047-04 (Solid) Sampled: 07/08/16 12:45					Client Sample Name: Jinko Solar JK07B 72 Cell MX JB TCLP				
Arsenic	ND		mg/L	0.100	100	07-15-16 09:32	MBM	SW846-6620A	B6G1401
Barium	ND		"	0.100	"	"	MBM	"	"
Cadmium	ND		"	0.100	"	"	MBM	"	"
Chromium	ND		"	0.100	"	"	MBM	"	"
Lead	ND		"	0.100	"	"	MBM	"	"
Mercury	ND		"	0.000500	25	07-15-16 12:20	MBM	"	B6G1501
Selenium	ND		"	0.100	100	07-15-16 09:32	MBM	"	B6G1401
Silver	ND		"	0.100	"	"	MBM	"	"

TCLP Extraction by EPA 1311

Analyte	Result	Q	Units	PQL	Dil Factor	Analyzed Date/Time	Analyst	Method	Batch
BG60047-01 (Solid) Sampled: 07/08/16 12:45					Client Sample Name: Jinko Solar JK06D 60 Cell Standard TC				
TCLP Filterable Solids	100		% by Weight	0.00100	1	07-15-16 09:32	MBM	EPA 1311	B6G1401
BG60047-02 (Solid) Sampled: 07/08/16 12:45					Client Sample Name: Jinko Solar JK06D 72 Cell Standard TC				
TCLP Filterable Solids	100		% by Weight	0.00100	1	07-15-16 09:32	MBM	EPA 1311	B6G1401
BG60047-03 (Solid) Sampled: 07/08/16 12:45					Client Sample Name: Jinko Solar JK07B 60 Cell MX JB TCLP				
TCLP Filterable Solids	100		% by Weight	0.00100	1	07-15-16 09:32	MBM	EPA 1311	B6G1401
BG60047-04 (Solid) Sampled: 07/08/16 12:45					Client Sample Name: Jinko Solar JK07B 72 Cell MX JB TCLP				
TCLP Filterable Solids	100		% by Weight	0.00100	1	07-15-16 09:32	MBM	EPA 1311	B6G1401



1702 East Central Avenue Suite 10
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Analytical Report

07/18/16 13:29

Client TUV Rheinland Of North America Inc
 2709 SE Otis Corley Suite 11
 Bentonville AR, 72712
 Attn: Mark Smith

Work Order BG60047
 Project Name: TCLP 7-8-16
 Project Number: TCLP 7-8-16
 Date Received 07/12/16

Metals by EPA 6000 Series Methods - Quality Control Environmental Testing Group

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B6G1401 - EPA 200.8 v 5.4

Blank (B6G1401-BLK1)

Prepared: 07/14/16 Analyzed: 07/15/16

Cadmium	ND	0.00100	mg/L							
Silver	ND	0.00100	"							
Arsenic	ND	0.100	"							
Selenium	ND	0.00100	"							
Chromium	ND	0.00100	"							
Barium	ND	0.00100	"							
Lead	ND	0.00100	"							

ICS (B6G1401-BS1)

Prepared: 07/14/16 Analyzed: 07/15/16

Silver	0.1994	0.0100	mg/L	0.200		99.7	90-110			
Arsenic	0.204	1.00	"	0.200		102	90-110			
Cadmium	0.208	0.0100	"	0.200		104	90-110			
Chromium	0.206	0.0100	"	0.200		103	80-120			
Selenium	0.197	0.0100	"	0.200		98.3	80-120			
Barium	0.206	0.0100	"	0.200		103	90-110			
Lead	0.207	0.0100	"	0.200		103	90-110			

Matrix Spike (B6G1401-MS1)

Source: BG60047-01

Prepared: 07/14/16 Analyzed: 07/15/16

Selenium	0.198	0.100	mg/L	0.200	ND	99.0	75-125			
Chromium	0.199	0.100	"	0.200	ND	99.5	75-125			
Arsenic	0.211	10.0	"	0.200	ND	106	75-125			
Silver	0.1900	0.100	"	0.200	ND	95.0	75-125			
Cadmium	0.204	0.100	"	0.200	ND	102	75-125			
Barium	0.267	0.100	"	0.200	ND	104	75-125			
Lead	0.208	0.100	"	0.200	ND	92.5	75-125			

Matrix Spike Dup (B6G1401-MSD1)

Source: BG60047-01

Prepared: 07/14/16 Analyzed: 07/15/16

Chromium	0.206	0.100	mg/L	0.200	ND	103	75-125	3.16	20	
Selenium	0.199	0.100	"	0.200	ND	99.5	75-125	0.504	20	
Silver	0.1850	0.100	"	0.200	ND	92.5	75-125	2.67	20	
Cadmium	0.205	0.100	"	0.200	ND	102	75-125	0.489	20	
Arsenic	0.210	10.0	"	0.200	ND	105	75-125	0.475	20	
Barium	0.263	0.100	"	0.200	ND	102	75-125	1.51	20	
Lead	0.209	0.100	"	0.200	ND	93.0	75-125	0.480	20	

Environmental Testing Group

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Report Date: 13 March 2017

File Number: 317G0608.001R

Client: Trina Solar (U.S.), Inc.
 100 Century Center Court, Suite 501
 San Jose, CA 94595 USA

Model(s) Identification: TSM-PD14 72-Cell Multicrystalline Module

Customer Test Instructions:

Test specification:	Test result:
Toxicity Characteristic Leaching Procedure (TCLP) –	Pass

Checked by:
Tested by:



3/10/2017
 Date Name Signature

Cody Carson
 Laboratory Technician

3/10/2017
 Date Name Signature

Mark Smith
 Laboratory Manager

Testing Period: March 2, 2017 - March 10, 2017

Test Sample: TSM-PD14 72-Cell Multicrystalline Module
Associated Products: 60-cell [PD05, PD05.05 & PD05.08], 72-cell [PD14] polycrystalline framed modules

RESULTS SUMMARY

Toxicity Characteristic Leaching Procedure (TCLP)

METHOD SUMMARY:

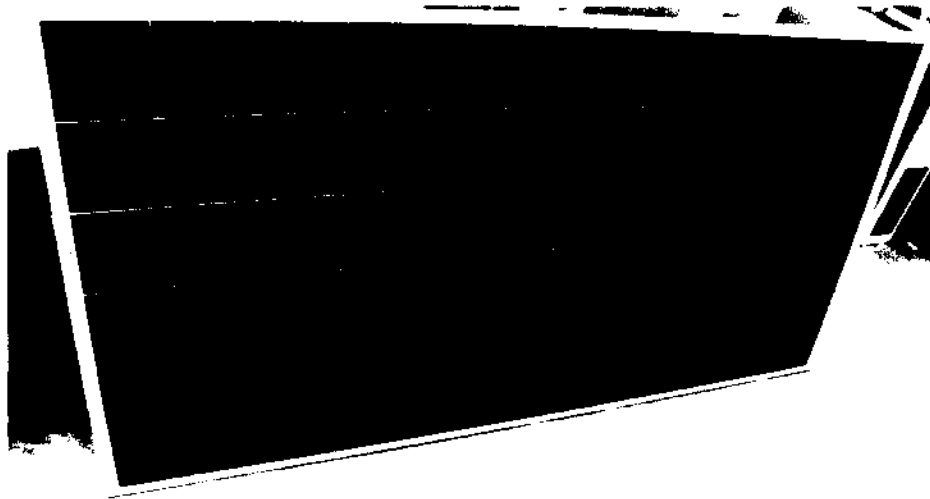
An aliquot of sample is leached with an acetic acid / sodium hydroxide solution at a 1:20 mix of sample to solvent. The leachate mixture is sealed in extraction vessel and tumbled for 18 hours to simulate an extended leaching time in the ground. It is then filtered and the solution is then analyzed for contaminants listed in Table 1.

RESULTS SUMMARY

No analyte levels are at a concentration greater than or equal to those referenced in **Table 1**

See Analytical Report in Addendum

EPA Waste Number	Contaminant	Regulatory Level (mg/l)
D004	Arsenic	5.000
D005	Barium	100.000
D006	Cadmium	1.000
D007	Chromium	5.000
D008	Lead	5.000
D009	Mercury	0.200
D010	Selenium	1.000
D011	Silver	5.000

Sample Photos:

TSM-PD14 72-Cell Multicrystalline Module

See Notes for Attached Addendum Below:

ND = None Detected above the Limits of Detection (LOD)

PQL = Practical Quantitation Limits that includes the LOD with any dilution factors (Dil Factor)

mg/L = milligrams per liter

--END--



Analytical Report

1702 East Central Avenue Suite 10
 Bentonville, AR 72712
 479-271-7996 phone
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03/08/17 13:10

Client TUV Rheinland Of North America Inc
 2709 SE Onis Corley Suite 11
 Bentonville AR, 72712
 Attn Mark Smith

Work Order: BC70015
 Project Name TCLP
 Project Number TCLP 9-16-16
 Date Received: 03/02/17

Environmental Testing Group

Metals by EPA 6000 Series Methods

Analyte	Result	Q	Units	PQL	Dil Factor	Analyzed Date-Time	Analyst	Method	Batch
BC70015-01 (Solid) Sampled: 03/02/17 11:20					Client Sample Name: TSM-PD14 72-Cell Multi-Crystalline -				
Arsenic	ND		mg/L	0.0250	25	03.06.17 16:01	MBM	SW846.6020A	B7C0601
Barium	0.0460		"	0.0250	"	"	MBM	"	"
Cadmium	ND		"	0.0250	"	"	MBM	"	"
Chromium	ND		"	0.0250	"	"	MBM	"	"
Lead	1.75		"	0.0250	"	"	MBM	"	"
Mercury	ND		"	0.0250	"	03/07/17 11:31	MBM	"	B7C0701
Selenium	ND		"	0.0250	"	03.06.17 16:01	MBM	"	B7C0601
Silver	ND		"	0.0250	"	"	MBM	"	"

TCLP Extraction by EPA 1311

Analyte	Result	Q	Units	PQL	Dil Factor	Analyzed Date-Time	Analyst	Method	Batch
BC70015-01 (Solid) Sampled: 03/02/17 11:20					Client Sample Name: TSM-PD14 72-Cell Multi-Crystalline -				
TCLP Filterable Solids	100		% by Weight	0.00100	1	03.06.17 16:01	MBM	EPA 1311	B7C0601