Thank you for giving UL the opportunity to partner with you.
Please note, Follow-Up Procedure Revisions or Report Revisions do not include Authorization Pages, Indices, Section General, and/or Appendices unless revisions were required or requested.

Should you have any questions, after reviewing the material, or need to report any inaccuracies, please reach out to your UL representative or find UL contact details for your local Customer Service Department at https://www.ul.com/about/locations.

Please find attached the related material on Project 4790853940

For your convenience, the below describes the related updates:

For revised/new documentation, please reference 2023-07-11 in the page headings.

E526148-vol1-Index
E526148-vol1-Appendix
E526148-20220322-CertificateofCompliance
E526148-20220322-Description
E526148-20220322-TestRecord

This material is provided on behalf of UL LLC (UL) or any authorized licensee of UL.

Times change, Trust Remains™

INDEX

COMPONENT - PHOTOVOLTAIC POLYMERIC MATERIALS (QIHE2, QIHE3)

TABLE B - SAMPLE SELECTION & INDEX TO TESTING

Category	Material Designation	Report Date	Generic Type	Thickness, mm	Color	Flame	IR Reference	TGA Reference	DSC Reference	Additional Info	Test Program Code
Encapsulants											
	PIX Fast Cure	2022-03-22	Ethylene Vinyl Acetate (EVA)	0.4-1.0	NC	-	T03-02-22 (TC50996)	T02-12-22	T06-12-22@	@2nd heat DSC.	I
	PIX POE	**2022-03-22**	**Polyolefin Elastomer**	**0.4-1.0**	**NC**	**-**	**T06-13-23**	**T02-21-23**	**T05-21-23@**	**@ 2nd Heat DSC**	**I**
	PIX Ultra Fast Cure	**2022-03-22**	**Ethylene Vinyl Acetate (EVA)**	**0.4-1.0**	**NC**	**-**	**T06-12-23**	**T02-20-23**	**T05-20-23**	**@ 2nd Heat DSC**	**I**

COMPONENT - PHOTOVOLTAIC POLYMERIC MATERIALS (QIHE2, QIHE3)

INDEX TO FOOTNOTES:

CERTIFICATE OF COMPLIANCE

Certificate Number	E526148
Report Reference	E526148-20220322
Date	2023-July-13
Issued to:	PIXON GREEN ENERGY PRIVATE LIMITED R.S. No. 157/1, 158/1, 158/2, 165/1 166 of Khijadiya Nana R.S. No. 15/1 of Depaliya, Rajkot - Jamnagar Highway Padadhari, Rajkot Gujarat, 360110 IN
This is to certify that representative samples of	PHOTOVOLTAIC POLYMERIC MATERIALS - COMPONENT See Addendum Page for Product Designation(s).
	Have been evaluated by UL in accordance with the component requirements in the Standard(s) indicated on this Certificate. UL Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for installation in complete equipment submitted for investigation to UL LLC.
Standard(s) for Safety:	Standard for Polymeric Materials - Short Term Property Evaluations, UL746A Standard for Polymeric Materials - Long Term Property Evaluations, UL746B
Additional Information:	See the UL Online Certifications Directory at https://iq.ulprospector.com for additional information

This Certificate of Compliance indicates that representative samples of the product described in the certification report have met the requirements for UL certification. It does not provide authorization to apply the UL Recognized Component Mark. Only the Authorization Page that references the Follow-Up Services Procedure for ongoing surveillance provides authorization to apply the UL Mark.

Only those products bearing the UL Recognized Component Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Recognized Component Mark on the product.

Deborah Jennings-Conner

Deborah Jennings-Conner, VP Regulatory Services

UL LLC

CERTIFICATE OF COMPLIANCE

Certificate Number	E526148
Report Reference	E526148-20220322
Date	2023-July-13

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements

Component - Photovoltaic Polymeric Materials: Ethylene Vinyl Acetate (EVA) and Polyolefin Elastomer.

MATERIAL DESIGNATIONS: Grade designated
PIX Fast Cure
PIX ULTRA FAST CURE
PIX POE

Deborah Jennings-Conner

Deborah Jennings-Conner, VP Regulatory Services

UL LLC

File E526148
Project 4790250946

Issued: March 22, 2022
Revised: April 12, 2022

Report

On

* Component - **Photovoltaic Polymeric Materials**

PIXON GREEN ENERGY PRIVATE LIMITED
Rajkot, Gujarat, 360110, INDIA

DESCRIPTION

PRODUCT COVERED:

Component - Photovoltaic Polymeric Materials: Ethylene Vinyl Acetate (EVA) **and Polyolefin Elastomer.**

* MATERIAL DESIGNATIONS: Grade designated
PIX Fast Cure
PIX ULTRA FAST CURE
PIX POE

GENERAL DESCRIPTION OF MATERIAL:

Grades PIX Fast Cure **and PIX Ultra fast cure** are Ethylene Vinyl Acetate (EVA) sheet **materials** for use as an encapsulant in PV modules.

Grade PIX POE is Polyolefin Elastomer sheet material for use as an encapsulant in PV modules.

MATERIAL MODIFICATIONS - There shall be no changes in the formulation or composition of the material unless previously cleared through Underwriters Laboratories Inc.

FORM OF SHIPMENT - The materials are produced and shipped in the form of rolls.

COLOR (NOT FOR UL REPRESENTATIVE USE):

The materials covered by this report may be pigmented in the colors shown on Table I. Maximum pigment loading of the materials does not exceed 0.5 percent organic or 5.0 percent inorganic by weight unless otherwise indicated below.

Material Designation	Maximum Pigment Loading by Weight	
	Percent Organic	Percent Inorganic
PIX Fast Cure	(Reserved for future use)	
PIX Ultra Fast Cure	**(Reserved for future use)**	
PIX POE	**(Reserved for future use)**	

GENERAL DESCRIPTION OF INVESTIGATION (NOT FOR UL REPRESENTATIVE USE):

Flammability – No tests to evaluate the flammability characteristics were conducted.

Performance Indexing Data – Tests related to the mechanical, thermal, electrical characteristics, and resistance to ignition properties, were conducted as indicated in Table I.

Weathering Data – No tests were conducted to evaluate the suitability for use when exposed to weathering

Thermal Aging – Samples were assigned relative thermal index of 50 deg C.

TECHNICAL CONSIDERATIONS (NOT FOR UL REPRESENTATIVE USE):

USE - For use only in products where the acceptability of the combination is determined by Underwriters Laboratories Inc.

CONDITIONS OF ACCEPTABILITY - The following are among the considerations to be made in judging the use of this material in an end-use product.

1. The material is identified in the accordance with the marking requirements outlined.

2. The materials have not been evaluated for flammability, as indicated in Table I. The flammability classification with consideration to color and thickness should comply with the flammability level acceptable for the applicable UL end-product standard or requirements outlined in the Standard for Polymeric Materials - use in Electrical Equipment Evaluations, UL 746C.

3. The engineer must consider the need to investigate the part for other than the properties investigated, in accordance with the applicable UL end-product standard and/or the requirements outlined in the Standard for Polymeric Materials - use in Electrical Equipment Evaluations, UL 746C.

4. Unless otherwise noted in the material footnote, suitability for use when exposed to ultraviolet light, water, oils, soaps, chemicals, X-rays, and the like has not been determined by this investigation.

5. The Follow-Up Services Procedure for a device employing parts molded of this material should specify these parts to have wall thickness, color and material identification and traceability in compliance with the above.

TABLE I
MATERIAL PROPERTIES

Material Designation	Color	Min. thk mm	UL94 Flame Class	R.T.I.°C Elec	R.T.I.°C Mech with Imp	R.T.I.°C Mech w/o Imp	HWI	HAI	HVTR	D495	CTI/IECCTIV	HVAR	Diel Str+ Kv/ mm	Vol Res ohm-cm	Dim Stab %	$H_2 0$ Abs. %	HDT °C	Ten Imp kJ/m^2	Ten Str MPa	Izod Imp J/M	Flex Str MPa	GWI °C	GWF °C	Ball Pres °C
*PIX Fast Cure	NC	**0.4-1.0**	-	50	50	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PIX Ultra fast cure	**NC**	**0.4-1.0**	-	50	50	50																		
PIX POE	**NC**	**0.4-1.0**	**-**	**50**	**50**	**50**																		

TEST RECORD NO. 1

SAMPLES:

* Specimens of Ethylene Vinyl Acetate (EVA) encapsulant material grade **PIX Fast Cure** noted below have been found to comply with the requirements of the following Standards.

Tested Grade	Color	Maximum Pigment Loading(wt.%)$		Thk (mm)
		Organic	Inorganic	
PIX Fast Cure	NC	-	-	0.45

GENERAL:

Test results relate only to the items tested.

The test methods and results stated below have been reviewed and found to be in accordance with the requirements within the Standards noted in the Summary.

METHOD:

UL746A – Polymeric Materials – Short Term Property Evaluations

- Infrared Spectroscopy (IR) - Sec. 43
- Thermogravimetry (TGA) - Sec. 46
- Differential Scanning Calorimetry (DSC) - Sec. 47

Grade	Material	Reference Dates		
		IR	TGA	DSC
PIX Fast Cure	EVA	T03-02-22 (TC50996)	T02-12-22	T06-12-22@

@2nd heat DSC.

UL746B - Polymeric Materials - Long Term Property Evaluations

- Relative Thermal Index based upon Historical Record – Sec. 7

Test Record Summary:

The results of this investigation indicate that the product(s) evaluated comply with the applicable requirements in

- the Standard for Polymeric Materials - Short Term Property Evaluations, UL746A, Sixth Edition, revised June 28, 2021
- the standard for Polymeric Materials - Long Term Property Evaluations, UL746B, Fifth Edition, revised October 15, 2021

and therefore, such products are judged eligible to bear UL's Mark as described on the Conclusion Page of this Report. Any information and documentation involving UL Mark services are provided on behalf of UL LLC or any authorized licensee of UL.

The project no. reference for this test record is 4790250946.

TEST RECORD NO. 2

General

Based on client’s request and declaration that the formulation has not been changed for higher thicknesses, the new thickness 0.8 has been added with a thickness range 0.45 to 0.8 mm to the already recognized grade PIX Fast Cure. No testing was considered necessary for this change.

Test Record Summary:

The results of the investigation indicate that the products evaluated comply with the applicable requirements, and therefore, such products are judged eligible to bear UL’s Mark as described on the Conclusion Page of this Report.

Any information and documentation involving UL Mark services are provided on behalf of UL LLC or any authorized licensee of UL.

This Test Record was processed under the project no. 4790853940.

Test Record By:	Reviewed By:
PATIL LATA SU./ARAI,AKIKO	V.V.Ray
Associate Project Engineer/ Senior Project Engineer	Staff Engineer

TEST RECORD NO. 3

General

Based on client’s request and declaration that the formulation has not been changed for higher thicknesses, the thickness range is updated from 0.4 to 1.0 mm to the already recognized grade PIX Fast Cure. No testing was considered necessary for this change.

Test Record Summary:

The results of the investigation indicate that the products evaluated comply with the applicable requirements, and therefore, such products are judged eligible to bear UL’s Mark as described on the Conclusion Page of this Report.

Any information and documentation involving UL Mark services are provided on behalf of UL LLC or any authorized licensee of UL.

This Test Record was processed under the project no. 4790853940.1.1.

Test Record By:	Reviewed By:
PATIL LATA SU./ARAI,AKIKO	V.V.Ray
Associate Project Engineer/ Senior Project Engineer	Staff Engineer

TEST RECORD NO. 4

SAMPLES:

Specimens of Ethylene Vinyl Acetate (EVA) encapsulant material grade PIX Ultra Fast Cure noted below have been found to comply with the requirements of the following Standards.

Tested Grade	Color	Maximum Pigment Loading(wt.%)$		Thk (mm)
		Organic	Inorganic	
PIX Ultra Fast Cure	NC	-	-	0.4

GENERAL:
Test results relate only to the items tested.
The test methods and results stated below have been reviewed and found to be in accordance with the requirements within the Standards noted in the Summary.

METHOD:

UL746A – Polymeric Materials – Short Term Property Evaluations

- Infrared Spectroscopy (IR) - Sec. 43
- Thermogravimetry (TGA) - Sec. 46
- Differential Scanning Calorimetry (DSC) - Sec. 47

Grade	Material	Reference Dates		
		IR	TGA	DSC
PIX Ultra Fast Cure	EVA	T06-12-23	T02-20-23	T05-20-23@

@2nd heat DSC.

UL746B - Polymeric Materials - Long Term Property Evaluations

- Relative Thermal Index based upon Historical Record – Sec. 7

Test Record Summary:

The results of this investigation indicate that the product(s) evaluated comply with the applicable requirements in

- the Standard for Polymeric Materials - Short Term Property Evaluations, UL746A, Sixth Edition, revised March 17th, 2023
- the standard for Polymeric Materials - Long Term Property Evaluations, UL746B, Fifth Edition, revised October 3rd , 2022

and therefore, such products are judged eligible to bear UL's Mark as described on the Conclusion Page of this Report. Any information and documentation involving UL Mark services are provided on behalf of UL LLC or any authorized licensee of UL.

The project no. reference for this test record is 4790853940.1.1 and Lab project is 1001946659.

Test Record By:	Reviewed By:
LATA PATIL SU/ AKIKO ARAI	V.V.Ray
Associate Project Engineer/ Senior Project Engineer	Staff Engineer

TEST RECORD NO. 5
SAMPLES:

Specimens of Polyolefin encapsulant material grade PIX POE noted below have been found to comply with the requirements of the following Standards.

Tested Grade	Color	Maximum Pigment Loading(wt.%)$		Thk (mm)
		Organic	Inorganic	
PIX POE	NC	-	-	0.40

GENERAL:

Test results relate only to the items tested.
The test methods and results stated below have been reviewed and found to be in accordance with the requirements within the Standards noted in the Summary.

METHOD:
UL746A – Polymeric Materials – Short Term Property Evaluations

- Infrared Spectroscopy (IR) - Sec. 43
- Thermogravimetry (TGA) - Sec. 46
- Differential Scanning Calorimetry (DSC) - Sec. 47

Grade	Material	Reference Dates		
		IR	TGA	DSC
PIX POE	POE	T06-13-23	T02-21-23	T05-21-23@

@2nd heat DSC.
UL746B - Polymeric Materials - Long Term Property Evaluations

- Relative Thermal Index based upon Historical Record – Sec. 7

Test Record Summary:
The results of this investigation indicate that the product(s) evaluated comply with the applicable requirements in

- the Standard for Polymeric Materials - Short Term Property Evaluations, UL746A, Sixth Edition, revised March 17th, 2023
- the standard for Polymeric Materials - Long Term Property Evaluations, UL746B, Fifth Edition, revised October 3rd, 2022

and therefore, such products are judged eligible to bear UL's Mark as described on the Conclusion Page of this Report. Any information and documentation involving UL Mark services are provided on behalf of UL LLC or any authorized licensee of UL.

The project no. reference for this test record is 4790853940.1.1 and Lab project is 1001946659.

Test Record By:	Reviewed By:
LATA PATIL SU/ AKIKO ARAI	V.V.Ray
Associate Project Engineer/ Senior Project Engineer	Staff Engineer

CONCLUSION

Samples of the component covered by this Report have been found to comply with the requirements covering the category and the components are found to comply with UL's applicable requirements. The description and test result in this Report are only applicable to the sample(s) investigated by UL and does not signify the product(s) described as being covered under UL's Follow-Up Service Program. When covered under UL's Follow-Up Service Program, the manufacturer is authorized to use the Recognized Marking on such products which comply with UL's Follow-Up Service Procedure and any other applicable requirements of UL LLC. The Recognized Component Mark of UL LLC on the product, or the Recognized Marking symbol on the product and the Recognized Component Mark on the smallest unit container in which the product is packaged, is the only method to identify products investigated by UL to published requirements and manufactured under UL's Recognition and Follow-Up Service.

This Report is intended solely for the use of UL and the Applicant for establishment of UL certification coverage of the product under UL's Follow-Up Service. Any use of the Report other than to indicate that the sample(s) of the product covered by the Report has been found to comply with UL's applicable requirements is not authorized and renders the Report null and void. UL shall not incur any obligation or liability for any loss, expense, or punitive damages, arising out of or in connection with the use or reliance upon the contents of this Report to anyone other than the Applicant as provided in the agreement between UL and Applicant. Any use or reference to UL's name or certification mark(s) by anyone other than the Applicant in accordance with the agreement is prohibited without the express written approval of UL. Any information and documentation involving UL Mark services are provided on behalf of UL LLC or any authorized licensee of UL.

REPORT BY:	REVIEWED BY:
V V RAY	AKIKO ARAI
Staff Engineer	Project Engineer