



TÜVRheinland®
Precisely Right.

TUV Rheinland Korea Ltd.
Mr. HwangHyun No Project Engineer
Products/Electrical/BATT
E&C Venture Dream Tower 6
41, Digital-ro 31-gil, Guro-gu,
Seoul 08375
Rep. of Korea

Date : 01.12.2017
Our ref. : HHN ZOL
Your ref.: 386141

Ref : R1 TÜV-Mark Approval - local

Type of Equipment : Secondary System, LiNiMnCoO₂, as page 0001
Model Designation : See Certificate
Certificate No. : R1 50358560 0002
Report No. : 50055056 002

Dear Mr. HwangHyun No,

Please find enclosed certification documents as specified above.

Please forward these originals to the certificate holder.

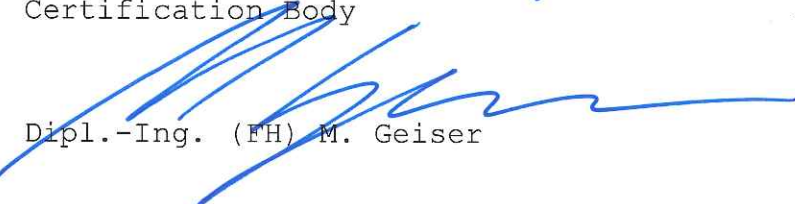
If you contact our office, please quote our reference above.

We thank you for your cooperation.

The license holder is: LG Chem, Ltd.
128, Yeoui-daero,
Yeongdeungpo-gu, Seoul 150-721
Rep. of Korea

With kind regards,

Certification Body


Dipl.-Ing. (FH) M. Geiser

Enclosure

TÜV Rheinland Japan Ltd.
Global Technology Assessment Center
4-25-2 Kita-Yamata
Tsuzuki-ku
Yokohama 224-0021, Japan

CSC : +81-45-470-1850
Tel : +81-45-914-3888
Fax : +81-45-914-3377
e-mail: info@jpn.tuv.com
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デュフ ラインランド ジャパン株式会社
テクノロジーセンター (GTAC)
〒224-0021
横浜市都筑区北山田4-25-2

カスタマーサービスセンター: 045-470-1850
Tel : 045-914-3888
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e-mail: info@jpn.tuv.com
www.jpn.tuv.com

LG Chem, Ltd.
Mr. Eohyun Yoo Assistant Manager
Global Standard Certification Part
128, Yeoui-daero,
Yeongdeungpo-gu, Seoul 150-721
Rep. of Korea

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Type of Equipment : Secondary System, LiNiMnCoO₂, as page 0001
Model Designation : See Certificate
Certificate No. : R1 50358560 0002
Report No. : 50055056 002

Dear Mr. Eohyun Yoo,

Enclosed please find the revised certificate as specified above.

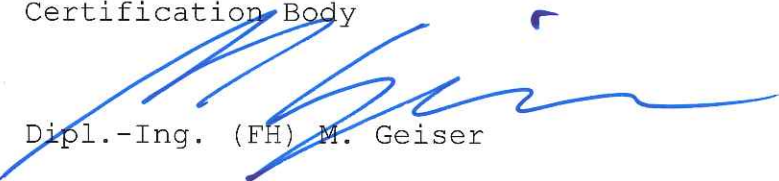
Please return to us the original of the old certification sheet, which contains an error and is hereby revised. Please keep all other sheets of that certificate, as well as attachments, if any. We apologize for any inconvenience in this matter.

We would like to take the opportunity to offer you our assistance in the approval of your future products through our extensive range of technical services.

Please, feel free to contact us, whatever your requirements may be.

With kind regards,

Certification Body



Dipl.-Ing. (FH) M. Geiser

cc: TÜV Rheinland Korea Ltd.

Enclosure

Zertifikat

Certificate



Zertifikat Nr. *Certificate No.*
R1 50358560

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0002

Ihr Zeichen <i>Client Reference</i>	Unser Zeichen <i>Our Reference</i>	Ausstellungsdatum <i>Date of Issue</i>
386141	ZOL-HHN-50055056 002	01.12.2017 (day/mo/yr)

Genehmigungsinhaber *License Holder*
LG Chem, Ltd.
128, Yeoui-daero,
Yeongdeungpo-gu, Seoul 150-721
Rep. of Korea

Fertigungsstätte *Manufacturing Plant*
PEOPLEWORKS
225, Suchul-daero,
Gumi-si, Gyeongsangbuk-do 39270
Rep. of Korea

Prüfzeichen *Test Mark*



Geprüft nach *Tested acc. to*
IEC 62619:2017

Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Lithium-ion battery Secondary System, LiNiMnCoO₂, as page 0001

Changes

BMU Identification: RESU-JH3
changed to: JH3, R4 (1.1.0.0, V10)
BMU version: 1.1.0.0, V03
changed to: 1.4.6.0, 1.0

Addition

Type Designations:	(1) RESU10H / R15563P3SSEG	1
	(2) RESU7H / R11163P3SSEG	1
System Configuration:	(1) [1P_42S] Cells(2) [1P_30S] Cells	
Nominal Voltage:	Charge: 440 V, Discharge: 400 V, (1) (CMA: 155.4 V); (2) (CMA: 110 V)	
Nominal Charging Voltage:	450 V, (1) (CMA: 176.4 V); (2) (CMA: 126 V)	
Watt-hour Rating:	(1) 9.8 kWh; (2) 7.0 kWh	
BMU Identification:	(1) JH3, R4 (1.1.0.0, V10) (2) JH3, R3 (1.1.0.0, V10)	

Remarks: Replaces R1 50358560 page 0002 dated 08.02.2017
For altered standard, see page 0003.

ANLAGE (Appendix): 1.1

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde und es bestätigt die Konformität des Produktes mit den oben genannten Standards und Prüfgrundlagen. Zusätzliche Anforderungen in Ländern, in denen das Produkt in Verkehr gebracht werden soll, müssen zusätzlich betrachtet werden. Die Herstellung des zertifizierten Produktes wird überwacht.

This certificate is based on our Testing and Certification Regulation and states the conformity of the product with the standards and testing requirements as indicated above. Any additional requirements in countries where the product is going to be marketed have to be considered additionally. The manufacturing of the certified product is subject to surveillance.

TÜV Rheinland Japan Ltd., 3-19-5 Shin Yokohama, Yokohama 222-0033, Japan

Tel.: (+81/45)470-1850 e-mail: info@jpn.tuv.com
Fax: (+81/45)473-5221 http://www.tuv.com/jp

Dipl.-Ing. (FH) M. Geiser

TUV Rheinland Korea Ltd.
Mr. HwangHyun No Project Engineer
Products/Electrical/BATT
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41, Digital-ro 31-gil, Guro-gu,
Seoul 08375
Rep. of Korea

Date : 01.12.2017
Our ref. : HHN ZOL
Your ref.: 386141

Ref : R1 TÜV-Mark Approval - local

Type of Equipment : Secondary System, LiNiMnCoO2, as page 0001
Model Designation : See Certificate
Certificate No. : R1 50358560 0003
Report No. : 50055056 003

Dear Mr. HwangHyun No,

Please find enclosed certification documents as specified above.

Please forward these originals to the certificate holder.

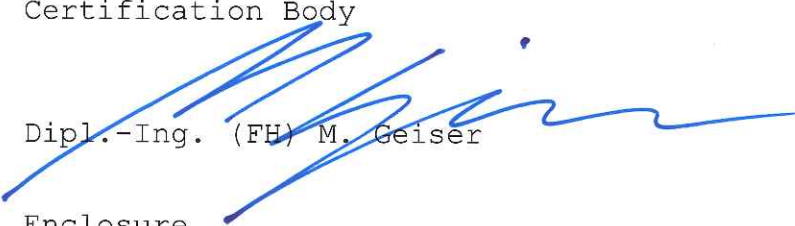
If you contact our office, please quote our reference above.

We thank you for your cooperation.

The license holder is: LG Chem, Ltd.
128, Yeoui-daero,
Yeongdeungpo-gu, Seoul 150-721
Rep. of Korea

With kind regards,

Certification Body



Dipl.-Ing. (FH) M. Geiser

Enclosure

LG Chem, Ltd.
Mr. Eohyun Yoo Assistant Manager
Global Standard Certification Part
128, Yeoui-daero,
Yeongdeungpo-gu, Seoul 150-721
Rep. of Korea

Date : 01.12.2017
Our ref. : HHN ZOL
Your ref.: 386141

Ref : R1 TÜV-Mark Approval - local

Type of Equipment : Secondary System, LiNiMnCoO₂, as page 0001
Model Designation : See Certificate
Certificate No. : R1 50358560 0003
Report No. : 50055056 003

Dear Mr. Eohyun Yoo,

The above specified technical equipment has been tested and found to be in accordance with the relevant requirements.

Please find enclosed your certificate.

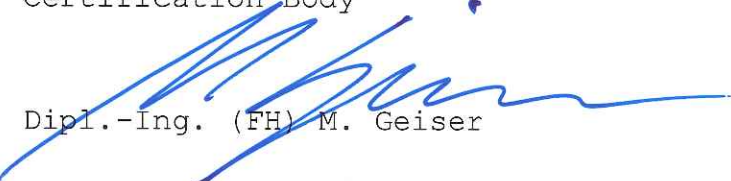
As the photo documentation is the evidence of certification, you need to keep the authorized copy for reference purposes as long as your certificate remains valid and the products are being sold.

If cancellation of the certificate is submitted by 15 November in a given year, no fee will be charged for the following year.

We appreciate your support and would like to offer our assistance in the approval of your future products through our extensive range of technical services. Please feel free to contact us whatever your requirements may be.

With kind regards,

Certification Body



Dipl.-Ing. (FH) M. Geiser

cc: TÜV Rheinland Korea Ltd.

Enclosure

Zertifikat

Certificate



Zertifikat Nr. *Certificate No.*
R1 50358560

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0003

Ihr Zeichen <i>Client Reference</i>	Unser Zeichen <i>Our Reference</i>	Ausstellungsdatum <i>Date of Issue</i>
386141	ZOL-HHN-50055056 003	01.12.2017 (day/mo/yr)

Genehmigungsinhaber *License Holder*
LG Chem, Ltd.
128, Yeoui-daero,
Yeongdeungpo-gu, Seoul 150-721
Rep. of Korea

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Prüfzeichen *Test Mark*



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IEC 62619:2017

Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Lithium-ion battery Secondary System, LiNiMnCoO₂, as page 0001

Change

Test Requirement: IEC 62619:2012/NP (21A/499/NP)
changed to: (see above)

Addition

Type Designation:	RESU7H / EH111063P3S3	1
System Configuration:	[1P_30S] Cells	

Nominal Voltage: Charge: 507 V, Discharge: 498 V,
(CMA: 111 V)

Nominal Charging Voltage: 550 V, (CMA: 126 V)

Watt-hour Rating: 7.0 kWh

BMU Identification: JH3, R3

BMU version: HW: 1.0 / SW: 1.5.4.4



1

ANLAGE (Appendix): 1.2

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde und es bestätigt die Konformität des Produktes mit den oben genannten Standards und Prüfgrundlagen. Zusätzliche Anforderungen in Ländern, in denen das Produkt in Verkehr gebracht werden soll, müssen zusätzlich betrachtet werden. Die Herstellung des zertifizierten Produktes wird überwacht.
This certificate is based on our Testing and Certification Regulation and states the conformity of the product with the standards and testing requirements as indicated above. Any additional requirements in countries where the product is going to be marketed have to be considered additionally. The manufacturing of the certified product is subject to surveillance.

Zertifizierungsstelle

TÜV Rheinland Japan Ltd., 3-19-5 Shin Yokohama, Yokohama 222-0033, Japan

Tel.: (+81/45)470-1850 e-mail: info@jpn.tuv.com

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Dipl.-Ing. (FH) M. Geiser