

Ships Bag for MB/L 721394006

Container: MRSU8953788	1
00044 MANIFEST 0945755.pdf	1
PL SHEET MRSU 895 378 8.pdf	5
document.pdf	6
HB/L: 27746780	11
TYP: Externes B/L	11
VER283764 HBL 309.pdf	11
HB/L: 28759982	13
TYP: Externes B/L	13
VER283797 HBL 123.pdf	13
HB/L: 83566645	16
TYP: Externes B/L	16
VER283716 HBL 95.pdf	16
HB/L: VER283592	18
TYP: B/L	18
SACO Shipping Line Ltd. B/L VER283592 VER28359	18
HB/L: VER283640	20
TYP: B/L	20
SACO Shipping Line Ltd. B/L VER283640 VER28364	20
HB/L: VER283650	21
TYP: MSDS	21
'VER283650 MSDS 1.pdf'	21
'VER283650 MSDS 2.pdf'	30
'VER283650 MSDS 3.pdf'	39
TYP: B/L	50
SACO Shipping Line Ltd. B/L VER283650 VER28365	50
HB/L: VER283666	52
TYP: MSDS	52
VER283599 MSD 25.pdf	52
VER283599 MSD 26.pdf	58
VER283599 MSD 27.pdf	62
VER283599 MSD 28.pdf	69
VER283670 MSD 39.pdf	76
VER283670 MSD 40.pdf	83

TYP: B/L	90
SACO Shipping Line Ltd. B/L VER283666 VER28366	90
HB/L: VER283683	92
TYP: B/L	92
SACO Shipping Line Ltd. B/L VER283683 VER28368	92
HB/L: VER283698	93
TYP: MSDS	93
VER283698 MSD 54.pdf	93
TYP: B/L	115
SACO Shipping Line Ltd. B/L VER283698 VER28369	115
HB/L: VER283737	116
TYP: B/L	116
SACO Shipping Line Ltd. B/L VER283737 VER28373	116
HB/L: VER283740	117
TYP: B/L	117
SACO Shipping Line Ltd. B/L VER283740 VER28374	117
HB/L: VER283750	118
TYP: B/L	118
SACO Shipping Line Ltd. B/L VER283750 VER28375	118
HB/L: VER283765	119
TYP: B/L	119
SACO Shipping Line Ltd. B/L VER283765 VER28376	119

Manifest

Page: 1

Container-No.: MRSU8953788 40' HIGH CUBE CONTAINER Seal-No.: B136835
Vessel: SAC0909 / GSL TEGEA
ETS:
Master-B/L.: 721394006

BL-Ref	Marks & Nos	Qty	Packing	Description of goods	Kos	Cbm
27746780	AQ WIRING SYSTEMS	5	PALLETS	CABLE DRUMS RED 1500 M + BLACK 600 M HS CODE: 85 44 4995	2603.000	2.704
28759982	28759982 VER283797 1/2-2/2	2	PALLETS	AUTOMOTIVE PARTS HS:85444995 1 PKG = THE PACKAGING IS NOT TRANSPORT RELATED PACKED. ACCORDING TO CHAPTER 11 / PARAGRAPH C OF THE SACO SHIPPING LINE LTD B/L TERMS AND CONDITIONS. THE CARRIER WILL NOT ASSUME ANY RESPONSIBILITY FOR DAMAGES INCURRES BETWEEN THE TIME OF RECEPTION OF THE CARGO AT HAMBURG CFS UNTIL DELIVERY TO THE CONSIGNEE AT POD.	384.900	1.574
83566645	83566645 VER283716 VERACRUZ	1	PALLET	ELECTROMAGNET DOME MOUNTED IN STARTERS HS:85119000	296.000	0.941

Manifest

Page: 2

Container-No.: MRSU8953788 40' HIGH CUBE CONTAINER Seal-No.: B136835
Vessel: SAC0909 / GSL TEGEA
ETS:
Master-B/L.: 721394006

BL-Ref	Marks & Nos	Qty	Packing	Description of goods	Kos	Cbm
VER283592	VER283592	1	PALLET	LOADED ONTO 1 PALLET LOADED INTO 1 LCL POWDERADD(TM) 9081, BOX DANGEROUS GOODS: NOT REGULATED. PLASTICS AND ARTICLES THEREOF POLYACETALS, OTHER POLYETHERS AND EPOXIDE RESINS, IN PRIMARYFORMS POLYCARBONATES, ALKYD RESINS, POLYALLYL ESTERS AND OTHER POLYESTERS, IN PRIMARY FORMS OTHER POLYESTERS OTHER NET WEIGHT :300.0000 KGS HS-NO 39079980 **HSCODE: 39079980**	317.000	0.950
VER283640	SEG AUTOMOTIVE 26EXP00073	1	PALLET	CONNECTION PART HS CODE: 850300	103.000	0.902

Manifest

Page: 3

Container-No.: MRSU8953788 40' HIGH CUBE CONTAINER Seal-No.: B136835

Vessel: SAC0909 / GSL TEGEA

ETS:

Master-B/L.: 721394006

BL-Ref	Marks & Nos	Qty	Packing	Description of goods	Kos	Cbm
VER283650	ABUS AUGUST BREMICKER SOHNE KG BICYCLE VISION STORE SA DE CV	11	PALLETS	BIKE HELMETS AND REAR LIGHTS CONTAINS UN 3481; LITHIUM IONBATTERIES CONTAINED IN EQUIPMENT; 9; P.I: 967 II; AS PER SV 188 AND UN3091; LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT; 9; P.I: 970 II; AS PER SV188 AS PER PROFORMA INVOICE: 1035694, 1007772, 1035693, 1007773, 1113059, 1007632, 1007633, 1017439, 1126550, 1007630, 1113057 HS-CODE: 392490, 420292, 570339, 650610, 830140, 853180	751.697	12.952
VER283666	HD 5002673032 HOSPITA1PE039106 12200537 MEXICO D.F. / MEXICO NR 1 - 2	2	PALLETS	MEDICAL EQUIPMENT HS CODE: 90189060, 39174000, 39173300, 90330090	484.000	3.953
VER283666	3001388774	2	PACKAGES	SAFETY EQUIPMENT HS CODE: 85065010, 90271010 S.P.	42.520	0.426

Manifest

Page: 4

Container-No.: MRSU8953788 40' HIGH CUBE CONTAINER Seal-No.: B136835

Vessel: SAC0909 / GSL TEGEA

ETS:

Master-B/L.: 721394006

BL-Ref	Marks & Nos	Qty	Packing	Description of goods	Kos	Cbm
VER283683	VER283713 KACO 73434, 73435 VERACRUZ SEAPORT	2	PACKAGES	AXIA MECHANICAL SEALS **HSCODE: 84842000** **HSCODE: 848420**	734.000	2.254
VER283698	AICON X-RAY GMBH F. ARMIDA Y CIA SUCS SA DE CV KP389, KP390	2	PACKAGES	SCANNER AS PER INVOICE: FS/1/04/2026, FS/2/04/2026 HS-CODE:902219	2255.000	23.210
VER283737	26GE0576	1	PALLET	VENTING EXIT VW MQB PZEV HS CODE 870899	156.000	0.924
VER283740	INV 2650564 DEL 2640935 + 2640934 WOREGG S. DE R.L. DE C.V. MEXICO	1	PALLET	CYLINDRICAL PIN H.S.CODE: 7318.2900	434.200	0.568
VER283750	DN 300712 INV 400588	1	PALLET	PLASTICS HS CODE 3926.9000	174.000	0.980
VER283765	AKWEL DN: 54019762	2	PALLETS	FITTINGS, JOINTS, ELBOWS INVOICE: 40045075 HS-CODE: 391740	384.000	1.824

Total**Quantity
34****Grossweight Measurement
9.119.317 54.162**

valid from March 1st 2026

Container:
MRSU 895 378-8

[illegible]

TOTAL AMOUNT:

CREDIT OR DEBIT TO INTERTAEI

Agreed special PLC :

SHIPPER	Consignee	Doc fee	Unstuffing	Admin	Tranmiss.	Port Transfer
Würth Hansa Gateway	Knipping/Globaltrans all	USD 50,- USD 70,-	USD 28,-w/m USD 33,-w/m			

 MAERSK		NON-NEGOTIABLE WAYBILL		SCAC MAEU B/L No. 721394006
Shipper (As principal, where "care of", "c/o", or other variants used.) SACO SHIPPING GMBH AS AGENT OF SACO SHIPPING LINE LIMITED WOLLKAEMMEREISTR. 1 D-21107 HAMBURG / GERMANY TAX-ID. DE-118597456		Booking No. 721394006		Svc Contract 299542652
Consignee (Negotiable only if consigned "to order", "to order of" a named Person or "to order of bearer". As principal, where "care of", "c/o", or other variants used.) INTERTEAM, S.A. DE C.V. COLIMA 114, INT 201 COLONIA ROMA, C.P. 06700 MEXICO CITY. TEL: +525555149897 TAX ID: INT961206ES7 CTC: MARCELA GODINEZ		Export references 604HAM1669GECH		
Notify Party (see clause 22) SAME AS CONSIGNEE EMAIL: IMPORT@INTERTEAM.COM.MX		This contract is subject to the terms, conditions and exceptions, including the law & jurisdiction clause and limitation of liability & declared value clauses, of the current Maersk Bill of Lading (available from the Carrier, its agents and at terms.maersk.com/carriage), which are applicable with logical amendments (mutatis mutandis). To the extent necessary to enable the Consignee to sue and to be sued under this contract, the Shipper on entering into this contract does so on his own behalf and as agent for and on behalf of the Consignee and warrants that he has the authority to do so. The shipper shall be entitled to change the Consignee at any time before delivery of the goods provided he gives the Carrier reasonable notice in writing. Delivery will be made to the Consignee or his authorised agent on production of reasonable proof of identity (and, in the case of an agent, reasonable proof of authority) without production of this waybill. The Carrier shall be under no liability whatsoever for misdelivery unless caused by the Carrier's negligence.		
		Onward inland routing (Not part of Carriage as defined in clause 1. For account and risk of Merchant)		
Vessel GSL TEGEA	Voyage No. 616W	Place of Receipt. Applicable only when document used as Multimodal Waybill Hamburg		
Port of Loading Hamburg	Port of Discharge Veracruz *	Place of Delivery. Applicable only when document used as Multimodal Transport B/L. (see clause 1)		

PARTICULARS FURNISHED BY SHIPPER

Kind of Packages; Description of goods; Marks and Numbers; Container No./Seal No. 1 Container Said to Contain 34 PACKAGE MRSU 895378-8 40/DRY 9'6 1 PALLET GROSS WEIGHT: 317.000 KGS MEASUREMENT: 0.950 CBM LOADED ONTO 1 PALLET LOADED INTO 1 LCL POWDERADD(TM) 9081, BOX DANGEROUS GOODS: NOT REGULATED. PLASTICS AND ARTICLES THEREOF POLYACETALS, OTHER POLYETHERS AND EPOXIDE RESINS, IN PRIMARYFORMS POLYCARBONATES, ALKYD RESINS, POLYALLYL	Weight 9119.317 KGS	Measurement 54.162 CBM
--	-------------------------------	----------------------------------

VERIFY COPY

Below freight details will not be part of Original Bill of Lading unless requested by customer
 Above particulars as declared by Shipper, but without responsibility of or representation by Carrier.

Freight & Charges		Rate	Unit	Currency	Prepaid	Collect
Charges Name Basic Ocean Freight Container Protect Essential Documentation fee - Destination	Prepaid/Collect Prepaid Collect Collect	Invoice Party SACO SHIPPING GMBH	Customer Code 11314343	Collection Business Unit Maersk Deutschland (Hamburg)		
Carrier's Receipt. Total number of containers or packages received by Carrier. 1 container	Place of Issue of Waybill Mumbai		Shipped, as far as ascertained by reasonable means of checking, in apparent good order and condition unless otherwise stated herein the total number or quantity of Containers or other packages or units indicated in the box opposite entitled "Carrier's Receipt"			
Shipped on Board Date (Local Time)	Date Issue of Waybill					
Declared Value Charges (see clause 7.3 of the Maersk Bill of Lading) for Declared Value of US\$						
Signed for the Carrier Maersk A/S						
This transport document has one or more numbered pages						

As Agent(s)

ESTERS AND OTHER
 POLYESTERS,
 IN PRIMARY FORMS OTHER
 POLYESTERS OTHER
 NET WEIGHT :300.0000 KGS
 HS-NO 39079980
 HSCODE: 39079980
 2 PACKAGES GROSS WEIGHT: 42.520 KGS MEASUREMENT: 0.426 CBM
 SAFETY EQUIPMENT
 HS CODE: 85065010,
 90271010
 S.P.
 1 PALLET GROSS WEIGHT: 103.000 KGS MEASUREMENT: 0.902 CBM
 CONNECTION PART
 HS CODE: 850300
 11 PALLETS GROSS WEIGHT: 751.697 KGS MEASUREMENT: 12.952 CBM
 BIKE HELMETS AND REAR
 LIGHTS
 CONTAINS UN 3481; LITHIUM
 IONBATTERIES CONTAINED IN
 EQUIPMENT; 9; P.I: 967
 II;
 AS PER SV 188
 AND UN3091; LITHIUM ION
 BATTERIES CONTAINED IN
 EQUIPMENT; 9; P.I: 970
 II;
 AS PER SV188
 AS PER PROFORMA INVOICE:
 1035694, 1007772,
 1035693,
 1007773, 1113059,
 1007632, 1007633,
 1017439,
 1126550, 1007630, 1113057

Freight & Charges		Rate	Unit	Currency	Prepaid	Collect
Charges Name		Prepaid/Collect	Invoice Party	Customer Code	Collection Business Unit	
Terminal Handling Service - Destination		Collect				
Emergency Bunker Surcharge		Prepaid	SACO SHIPPING GMBH	11314343	Maersk Deutschland (Hamburg)	
Export Intermodal Fuel Fee		Prepaid	SACO SHIPPING GMBH	11314343	Maersk Deutschland (Hamburg)	
Equipment Handling Import		Collect				
Emission Surcharge		Prepaid	SACO SHIPPING GMBH	11314343	Maersk Deutschland (Hamburg)	
Inland Haulage Export		Prepaid	SACO SHIPPING GMBH	11314343	Maersk Deutschland (Hamburg)	
Value Protect Starter		Prepaid	SACO SHIPPING GMBH	11314343	Maersk Deutschland (Hamburg)	

HS CODE:. 85 44 4995
2 PALLETS GROSS WEIGHT: 384.000 KGS MEASUREMENT: 1.824 CBM
FITTINGS, JOINTS, ELBOWS
INVOICE: 40045075
HS-CODE: 391740
2 PALLETS GROSS WEIGHT: 384.900 KGS MEASUREMENT: 1.574 CBM
AUTOMOTIVE PARTS
HS:85444995
1 PKG =
THE PACKAGING IS NOT
TRANSPORT
RELATED PACKED. ACCORDING
TO
CHAPTER 11 / PARAGRAPH C
OF
THE SACO SHIPPING LINE LTD
B/L TERMS AND
CONDITIONS. THE CARRIER
WILL
NOT ASSUME ANY
RESPONSIBILITY
FOR DAMAGES INCURRES
BETWEEN
THE TIME OF RECEPTION OF
THE
CARGO AT HAMBURG CFS
UNTIL
DELIVERY TO THE CONSIGNEE
AT
POD.

MRSU8953788 40 DRY 9'6 34 PACKAGE 9119.317 KGS 54.162 CBM
Shipper Seal : B136835
The Merchant(s) warrant and represent that this shipment and/or Goods will comply at all

Freight & Charges		Rate	Unit	Currency	Prepaid	Collect
Charges Name		Prepaid/Collect	Invoice Party	Customer Code	Collection Business Unit	

times with European Union, United States and United Nations sanctions and/or export control laws (Sanctions Laws), and that this shipment and/or Goods do not involve, whether directly or indirectly, any entity or person identified, or owned or controlled by any such entity or person identified, on the U.S. Treasury Departments Office of Foreign Asset Control (OFAC) list of Specially Designated Nationals and Blocked Persons, or any other similar list maintained by the European Union, or as promulgated by the United Nations Security Council (Designated Person). If, in the Carriers reasonable opinion, this shipment and/or Goods are in violation of the Carriers policy on Russia [<https://www.maersk.com/news/articles/2022/02/24/russia-ukraine-situation-update>], Sanctions Laws or involves any Designated Person, the shipment and/or Goods will be returned to the origin at Carriers sole and unfettered discretion, and the Merchant(s) shall indemnify and hold harmless the Carrier, its servants and agents, for any breach of this clause. The Merchant(s) agree that the Carrier may stop the shipment and/or Goods in transit or withhold release of the shipment and/or Goods pending any investigation into compliance with this clause by the Merchant(s).

SHIPPER'S LOAD, STOW, WEIGHT AND COUNT
FREIGHT PREPAID
SD/CY

Freight & Charges		Rate	Unit	Currency	Prepaid	Collect
Charges Name	Prepaid/Collect	Invoice Party		Customer Code	Collection Business Unit	

SHIPPER/EXPORTER (COMPLETE NAME AND ADDRESS)		BOOKING NO.	BILL OF LADING NO.
A.HARTRODT DENMARK A/S GRØNLANDSVEJ 5 8660 SKANDERBORG DENMARK		27746780	27746780
		EXPORT REFERENCES BOOKING; GRIMSÅS TO VERACRUZ,	
CONSIGNEE (NOT NEGOTIABLE UNLESS CONSIGNED TO ORDER)		FORWARDING AGENT, F.M.C. NO.	
A. HARTRODT MEXICO SA DE CV FLOOR 9, AVENIDA INSURGENTES SUR 800, COLONIA DEL VALLE ALCALDIA BENITO JUAREZ CIUDAD DE MEXICO MEXICO, CP 03100 MEXICO		A. HARTRODT DENMARK A/S GRØNLANDSVEJ 5 SKANDERBORG SKANDERBORG 8660 DK-DENMARK	
		POINT AND COUNTRY OF ORIGIN OF GOODS	
NOTIFY PARTY (COMPLETE NAME AND ADDRESS)		FOR DELIVERY PLEASE APPLY TO	
SAME AS CONSIGNEE EMAIL:???		INTERTEAM SA DE CV SERVICIOS INTERN. DE COMERCIO COLIMA 114 DESP 201 COL ROMA C.P. MEXICO D.F. 06700 PHONE: 00525555149897	
PRE-CARRIAGE BY*	PLACE OF RECEIPT BY PRE-CARRIER*	TRANSHIPMENT PORT	
	DOOR GRIMSÅS, 514 70		
EXPORT CARRIER (VESSEL/VOY/FLAG)	PORT OF LOADING	LOADING PIER/TERMINAL	
MAERSK DANUBE 615W	HAMBURG	DOOR / CFS	
PORT OF DISCHARGE	PLACE OF DELIVERY BY ON CARRIER*	NUMBER OF ORIGINALS	
VERACRUZ	VERACRUZ	0/EXPRESS	

PARTICULARS FURNISHED BY SHIPPER				
MARKS & NOS/CONTAINER NOS	NO. OF PKGS	DESCRIPTION OF PACKAGES AND GOODS	GROSS WEIGHT	MEASUREMENT
AQ WIRING SYSTEMS	5	PALLETS CABLE DRUMS RED 1500 M + BLACK 600 M HS CODE:. 85 44 4995	5738.633 Lbs 2603.000 Kgs	95.491 Cbf 2.704 Cbm
SHIPPER'S LOAD AND COUNT		FREIGHT PREPAID		
For notification purpose only Page 1 of 1			Total:	95.491 Cbf 2.704 Cbm

SHIPPERS DECLARED VALUE \$
SUBJECT TO EXTRA FREIGHT AS PER TARIFF AND CLAUSE 8 (3) OF THIS B/L

FREIGHT & CHARGES		BASIS	RATE	PREPAID	COLLECT
					
RECEIVED by Carrier, so far as can be reasonably ascertained, in external apparent good order and condition (unless otherwise stated herein) the Goods as specified above for carriage from the Place of Receipt or Port of Loading to the Port of Discharge or Place of Delivery, whichever is applicable. Notwithstanding any local customs or privileges to the contrary, Merchant agrees on acceptance of contract or acceptance or notice of this Bill to be bound, and that the Goods and Services as evidenced herein are subject to, all terms of the Bill including but not limited to Defences (as defined), indemnities, liberties and the law & jurisdiction provisions hereof whether appearing on the front or reverse or whether printed or stamped or otherwise incorporated herein and in the Carrier's Tariff, as if all signed by the Merchant. Above particulars of the Goods and address details are as provided and as declared by Merchant				TOTAL	TOTAL

RECEIVED by Carrier, so far as can be reasonably ascertained, in external apparent good order and condition (unless otherwise stated herein) the Goods as specified above for carriage from the Place of Receipt or Port of Loading to the Port of Discharge or Place of Delivery, whichever is applicable. **Notwithstanding any local customs or privileges to the contrary, Merchant agrees on acceptance of contract or acceptance or notice of this Bill to be bound, and that the Goods and Services as evidenced herein are subject to, all terms of the Bill including but not limited to Defences (as defined), Indemnities, Liabilities, Limitations of Remedies, and the Carrier's Tariff, as if all signed by the Merchant.** Above particulars of the Goods and address details are as provided and as declared by Merchant and are stated without warranty, liability or responsibility as to correctness by Carrier. Where the Bill is non-negotiable and unless Merchant gives written notice of and Carrier has given written agreement to the contrary prior to Carrier's acceptance of a Bill of Lading, if this is an Express Bill, then Carrier may give delivery to the consignee or to the order of the consignee, notwithstanding any Bill of Lading issued by Merchant, and without the surrendering of any Original Bill. Where the Bill is negotiable (To Order / or) in accordance with the terms of this Bill, one original Bill of Lading, duly endorsed, must be surrendered by the Merchant to the Carrier (together with payment of outstanding Freight and Charges) in exchange for the Goods or a copy of the Bill of Lading. **Notwithstanding to the contrary of anything stated or implied above, all of this tenor and date, and where required by this Bill, copies of the Bill of Lading have been surrendered, all other Bills of Lading shall be void.**

DATED
AT GOTHENBURG ON APR 19, 2026
BY SHIPCO TRANSPORT

SHIPPER/EXPORTER (COMPLETE NAME AND ADDRESS) MANEX SKAWINA UL. PILSUDSKIEGO 57B, 32-050 SKAWINA, POLAND		BOOKING NO. 28759982	BILL OF LADING NO. 28759982
CONSIGNEE (NOT NEGOTIABLE UNLESS CONSIGNED TO ORDER) AQ WIRING SYSTEMS SA DE CV TAX ID: DME051116H2A AV. RECURSOS HIDRAULICOS NO. 80- BODEGA 8,9,10,COL. LAZARO CARDENAS TULTITLAN, ESTADO DE MEXICO 54916 MEXICO 5586051035/ 5580001400 EXT 107 ABRAHAM BRISENO ABRAHAM.BRISENO@AQGROUP.COM		EXPORT REFERENCES 28759982/KRK	
		FORWARDING AGENT, F.M.C. NO SEACARGO SP. Z O.O. UL. LUZYCKA 6D GDYNIA 81-537 PL-POLAND	
NOTIFY PARTY (COMPLETE NAME AND ADDRESS) SAME AS CONSIGNEE		POINT AND COUNTRY OF ORIGIN OF GOODS	
PRE-CARRIAGE BY*		FOR DELIVERY PLEASE APPLY TO INTERTEAM S.A. DE C.V. COLIMA 114 DESPACHO 201, D.F.COLONIA ROMA 6700	
		TRANSSHIPMENT PORT	
EXPORT CARRIER (VESSEL/VOY/FLAG) MAERSK DANUBE 615W	PLACE OF RECEIPT BY PRE-CARRIER* KRAKOW	LOADING PIER/TERMINAL CFS / CFS	2604313017
PORT OF DISCHARGE MEXICO CITY	PORT OF LOADING HAMBURG	NUMBER OF ORIGINALS 0/EXPRESS	

PARTICULARS FURNISHED BY SHIPPER					
MARKS & NOS/CONTAINER NOS	NO. OF PKGS	DESCRIPTION OF PACKAGES AND GOODS	GROSS WEIGHT		MEASUREMENT
28759982 VER283797 1/2-2/2	2	PALLETS AUTOMOTIVE PARTS HS:85444995 THE PACKAGING IS NOT TRANSPORT RELATED PACKED. ACCORDING TO CHAPTER 11 / PARAGRAPH C OF THE CARRIERS B/L TERMS AND CONDITIONS. THE CARRIER WILL NOT ASSUME ANY RESPONSIBILITY FOR DAMAGES INCURRES BETWEEN THE TIME OF RECEPTION OF THE CARGO AT KRAKOW CFS UNTIL DELIVERY TO THE CONSIGNEE AT POD.	848.559	Lbs	55.599 Cbf
			384.900	Kgs	1.574 Cbm

For notification purpose only

Page 1 of 2

SHIPPERS DECLARED VALUE \$ SUBJECT TO EXTRA FREIGHT AS PER TARIFF AND CLAUSE 8 (3) OF THIS B/L				
FREIGHT & CHARGES	BASIS	RATE	PREPAID	COLLECT
RECEIVED by Carrier, so far as can be reasonably ascertained, in external apparent good order and condition (unless otherwise stated herein) the Goods as specified above for carriage from the Place of Receipt or Port of Loading to the Port of Discharge or Place of Delivery, whichever is applicable. Notwithstanding any local customs or privileges to the contrary, Merchant agrees on acceptance of contract or acceptance or notice of this Bill to be bound, and that the Goods and Services as evidenced herein are subject to, all terms of the Bill including but not limited to Defences (as defined), indemnities, liberties and the law & jurisdiction provisions hereof whether appearing on the front or reverse or whether printed or stamped or otherwise incorporated herein and in the Carrier's Tariff, as if all signed by the Merchant. Above particulars of the Goods and address details are as provided and as declared by Merchant			TOTAL	TOTAL

RECEIVED by Carrier, so far as can reasonably be ascertained, in external apparent good order and condition (unless otherwise stated herein) the Goods as specified above for carriage from the Place of Receipt or Port of Loading to the Port of Discharge or Place of Delivery, whichever is applicable. **Notwithstanding** any local customs or privileges to the contrary, Merchant agrees on acceptance of contract or acceptance or notice of this Bill to be bound, and that the Goods and the Carriage thereon shall remain in and subject to the control, management and handling but not to the direction of the Carrier, and that the Carrier shall be and shall remain the sole and exclusive owner of the Goods and shall be entitled to dispose of them in any manner and in any jurisdiction hereafter appearing on the front or reverse of the bill of lading, whether printed or otherwise, in accordance with the bill and in the Carrier's Tariff, as if all signed by the Merchant. Above particulars of the Goods and address details are as provided and as declared by Merchant and are stated without warranty, liability or responsibility as to correctness by Carrier. Where the Bill is non-negotiable and unless Merchant gives written notice to the carrier, the carrier agrees to the contrary provisions of the bill of lading, as far as they relate to the liability of the carrier for loss or damage to the Goods to the named consignee. Where the bill of lading is negotiable, above subject to payment of outstanding Freight and Charges), upon reasonable notice of identity and without the surrendering of any Original Bill. Where the Bill is (subject to Toler / or / in accordance with the terms of this Bill, one original Bill of Lading, duly endorsed, must be surrendered by the Merchant to the Carrier (together with payment of outstanding Freight and Charges) in exchange for the Goods or a receipt therefor. Where the Bill is negotiable, the original Bill of Lading must be surrendered by the Merchant to the Carrier, together with payment of outstanding Freight and Charges, as required by this Bill. One original Bill of Lading has been surrendered and all other Bills of Lading shall be void.

DATED _____
AT _____ ON _____
BY _____

SHIPPER/EXPORTER (COMPLETE NAME AND ADDRESS) MANEX SKAWINA UL. PILSUDSKIEGO 57B, 32-050 SKAWINA, POLAND		BOOKING NO. 28759982	BILL OF LADING NO. 28759982
CONSIGNEE (NOT NEGOTIABLE UNLESS CONSIGNED TO ORDER) AQ WIRING SYSTEMS SA DE CV TAX ID: DME051116H2A AV. RECURSOS HIDRAULICOS NO. 80- BODEGA 8,9,10,COL. LAZARO CARDENAS TULTITLAN, ESTADO DE MEXICO 54916 MEXICO 5586051035/ 5580001400 EXT 107 ABRAHAM BRISENO ABRAHAM.BRISENO@AQGROUP.COM		EXPORT REFERENCES 28759982/KRK	
		FORWARDING AGENT, F.M.C. NO SEACARGO SP. Z O.O. UL. LUZYCKA 6D GDYNIA 81-537 PL-POLAND	
NOTIFY PARTY (COMPLETE NAME AND ADDRESS) SAME AS CONSIGNEE		POINT AND COUNTRY OF ORIGIN OF GOODS	
PRE-CARRIAGE BY*		FOR DELIVERY PLEASE APPLY TO INTERTEAM S.A. DE C.V. COLIMA 114 DESPACHO 201, D.F.COLONIA ROMA 6700	
		TRANSSHIPMENT PORT	
EXPORT CARRIER (VESSEL/VOY/FLAG) MAERSK DANUBE 615W	PLACE OF RECEIPT BY PRE-CARRIER* KRAKOW	LOADING PIER/TERMINAL CFS / CFS	2604313017
PORT OF DISCHARGE MEXICO CITY	PLACE OF DELIVERY BY ON CARRIER* MEXICO CITY	NUMBER OF ORIGINALS 0/EXPRESS	

PARTICULARS FURNISHED BY SHIPPER				
MARKS & NOS/CONTAINER NOS	NO. OF PKGS	DESCRIPTION OF PACKAGES AND GOODS	GROSS WEIGHT	MEASUREMENT
SHIPPER'S LOAD, STOW AND COUNT		FREIGHT PREPAID		
For notification purpose only Page 2 of 2			Total: 848.559 Lbs 384.900 Kgs	55.599 Cbf 1.574 Cbm

SHIPPERS DECLARED VALUE \$
SUBJECT TO EXTRA FREIGHT AS PER TARIFF AND CLAUSE 8 (3) OF THIS B/L

FREIGHT & CHARGES	BASIS	RATE	PREPAID	COLLECT
RECEIVED by Carrier, so far as can be reasonably ascertained, in external apparent good order and condition (unless otherwise stated herein) the Goods as specified above for carriage from the Place of Receipt or Port of Loading to the Port of Discharge or Place of Delivery, whichever is applicable. Notwithstanding any local customs or privileges to the contrary, Merchant agrees on acceptance of contract or acceptance or notice of this Bill to be bound, and that the Goods and Services as evidenced herein are subject to, all terms of the Bill including but not limited to Defences (as defined), indemnities, liberties and the law & jurisdiction provisions hereof whether appearing on the front or reverse or whether printed or stamped or otherwise incorporated herein and in the Carrier's Tariff, as if all signed by the Merchant. Above particulars of the Goods and address details are as provided and as declared by Merchant			TOTAL	TOTAL

[illegible]

DATED
AT GDYNIA ON APR 19, 2026
BY SHIPCO TRANSPORT AS CARRIER

SHIPPER/EXPORTER (COMPLETE NAME AND ADDRESS) SCAN GLOBAL LOGISTICS SP. Z O.O., PASAZ POKOYHOF SWIETEGO ANTONIEGO 2/4, WROCLAW, POLAND, 50-073, POLAND OPERATIONS.WRO@SCANGL.COM, PHONE : +48 - 532969624		BOOKING NO. 83566645	BILL OF LADING NO. 83566645
		EXPORT REFERENCES SEG #21	
CONSIGNEE (NOT NEGOTIABLE UNLESS CONSIGNED TO ORDER) SGL TRANSGROUP DE MÉXICO S.A. DE C.V. AV. PASEO DE LAS PALMAS 405, INT 501 Y 504 , CIUDAD DE MÉXICO, MEXICO, 11000, MEXICO,		FORWARDING AGENT, F.M.C. NO SCAN GLOBAL LOGISTICS SP. Z O.O. PASAZ POKOYHOF UL. SW. ANTONIEGO 2/4 WROCLAW 50-073 PL-POLAND	
		POINT AND COUNTRY OF ORIGIN OF GOODS	
NOTIFY PARTY (COMPLETE NAME AND ADDRESS) SAME AS CONSIGNEE MEX.OCEANIMPORT@SCANGL.COM, PHONE : +52 - 5580679153		FOR DELIVERY PLEASE APPLY TO INTERTEAM S.A. DE C.V. COLIMA 114 DESPACHO 201, D.F.COLONIA ROMA 6700	
PRE-CARRIAGE BY*	PLACE OF RECEIPT BY PRE-CARRIER* GDYNIA, POLAND	TRANSSHIPMENT PORT	
EXPORT CARRIER (VESSEL/VOY/FLAG) MAERSK DANUBE 615W	PORT OF LOADING HAMBURG, GERMANY	LOADING PIER/TERMINAL CFS / CFS	
PORT OF DISCHARGE VERACRUZ, MEXICO	PLACE OF DELIVERY BY ON CARRIER* VERACRUZ, MEXICO	NUMBER OF ORIGINALS 0/EXPRESS	

PARTICULARS FURNISHED BY SHIPPER				
MARKS & NOS/CONTAINER NOS	NO. OF PKGS	DESCRIPTION OF PACKAGES AND GOODS	GROSS WEIGHT	MEASUREMENT
83566645 VER283716 VERACRUZ	1	PALLET ELECTROMAGNET DOME MOUNTED IN STARTERS HS:85119000	652.568 Lbs 296.000 Kgs	33.224 Cbf 0.941 Cbm
SHIPPER'S LOAD, STOW AND COUNT		FREIGHT PREPAID		
Container: MISC0000000/MIS12345 Size/Type: 40' High Cube Dry Container Page 1 of 1 Total: 652.568 Lbs 296.000 Kgs 33.224 Cbf 0.941 Cbm				

SHIPPERS DECLARED VALUE \$
SUBJECT TO EXTRA FREIGHT AS PER TARIFF AND CLAUSE 8 (3) OF THIS B/L

FREIGHT & CHARGES	BASIS	RATE	PREPAID	COLLECT
RECEIVED by Carrier, so far as can be reasonably ascertained, in external apparent good order and condition (unless otherwise stated herein) the Goods as specified above for carriage from the Place of Receipt or Port of Loading to the Port of Discharge or Place of Delivery, whichever is applicable. Notwithstanding any local customs or privileges to the contrary, Merchant agrees on acceptance of contract or acceptance or notice of this Bill to be bound, and that the Goods and Services as evidenced herein are subject to, all terms of the Bill including but not limited to Defences (as defined), indemnities, liberties and the law & jurisdiction provisions hereof whether appearing on the front or reverse or whether printed or stamped or otherwise incorporated herein and in the Carrier's Tariff, as if all signed by the Merchant. Above particulars of the Goods and address details are as provided and as declared by Merchant			TOTAL	TOTAL

RECEIVED by Carrier, so far as can reasonably be ascertained, in external apparent good order and condition (unless otherwise stated herein) the Goods as specified above for carriage from the Place of Receipt or Port of Loading to the Port of Discharge or Place of Delivery, whichever is applicable. **Notwithstanding** any local customs or privileges to the contrary, Merchant agrees on acceptance of contract or acceptance or notice of this Bill to be bound, and that the Goods and the Carriage thereon shall remain in and subject to the control, handling but not to the disposal or Discharge (as defined in the Bill of Lading) of the Carrier and the Jurisdiction hereof, whether appearing on the front or reverse of the bill, printed or otherwise, in inland or foreign trade, and in the Carrier's Tariff, as if all signed by the Merchant. Above particulars of the Goods and address details are as provided and as declared by Merchant and are stated without warranty, liability or responsibility as to correctness by Carrier. Where the Bill is non-negotiable and unless Merchant gives written notice to the carrier, the carrier agrees to the contrary party's signature on the bill of lading as a bill of lading, and the carrier agrees to give the goods of the Goods to the named consignee, as shown above, subject to payment of outstanding Freight and Charges, upon reasonable proof of identity and without the surrendering of any Original Bill. Where the Bill is negotiable (To order / or) in accordance with the terms of this Bill, one original Bill of Lading, duly endorsed, must be surrendered by the Merchant to the Carrier (together with payment of outstanding Freight and Charges) in exchange for the Goods or a receipt for the Goods, as the case may be. Where the Bill is negotiable, the original Bill of Lading must be surrendered above, all of this tenor and date, and wherever as required by this Bill one original Bill of Lading has been surrendered all other Bills of Lading shall be void.

DATED AT GDYNIA ON APR 19, 2026

BY SHIPCO TRANSPORT AS CARRIER

Shipper
LUBRIZOL DEUTSCHLAND GMBH
MAX-PLANCK-STR.6
27721 RITTERHUDE
GERMANY

B/L No.
VER283592



SACO SHIPPING LINE LTD

SACO SHIPPING LINE LIMITED
44, Kroytser
PANORAMA Residence
Block A, Flat 01
3120 Limassol CYPRUS
FMC Organization No. 025875

6/04/HAM/169707

Copy

Consigned to order of
LUBRIZOL DE MEXICO COM S DE RL CV
MONTE IRAZU 159
LOMAS DE CHAPULTEPEC
11000 MIGUEL HIDALGO,
MEXICO D.F., MEXICO
RFC:LMC960320-843RAGO

Notify Party and address
RAGO S.C.
RAGO AGENCIAS ADUANALES
AGUILES SERDAN NO. 690 1ER PISO
91700 DESP. 102, COL.
CENTRO, VERACRUZ, MEXICO

	Place of receipt HAMBURG CFS
--	---------------------------------

Ocean vessel GSL TEGEA 616W	Port of loading HAMBURG, GERMANY
--------------------------------	-------------------------------------

Port of discharge VERACRUZ, MEXICO	Place of delivery VERACRUZ CFS	Freight payable HAMBURG	Number of original Bills of Lading 0/ZERO
---------------------------------------	-----------------------------------	----------------------------	--

Marks and Nos.	Quantity of Goods	Description of Goods	Said to contain	Gross weight, kg.	Measurement, m ³
CARGO DETAILS AS PER ATTACHED STATEMENT					

FREIGHT PREPAID - SHIPPED ON BOARD - EXPRESS RELEASE

All particulars above declared by Merchant

For delivery of cargo please apply to:

INTERTEAM, S.A. DE C.V.
SERVICIOS INTERNACIONALS DE
COMERCIO, COLIMA 114 DESPACHO 201,
COLONIA ROMA,C.P. 06700 MEXICO D.F.
TEL:005255146915,FAX:005252087989
DANIELA.BORJA@INTERTEAM.COM.MX

RECEIVED for shipment the above mentioned Goods in apparent good order and condition as far as could be ascertained by exercising reasonable means of checking or as stated above.

The Carrier in accordance with the provisions contained on this side and on the reverse side of this document;

- undertakes to perform or to procure the performance of the entire transport from the place at which the Goods are taken in charge to the place designated for delivery in this document, and
- assumes liability as prescribed in this document for such transport.

One of the Bills of Lading to be surrendered duly endorsed in exchange for the Goods or delivery order.

IN WITNESS whereof three (3) original Bills of Lading have been signed, if not otherwise stated above, one of which being accomplished the other(s) to be void.

Place and date of issue
HAMBURG 25.04.2026

Signed on behalf of the Carrier SACO SHIPPING LINE LIMITED

SACO Shipping GmbH
Wollkämmerstraße 1
21107 Hamburg
Germany



As agent only for SACO SHIPPING LINE LIMITED LIMASSOL



Declared Value of the Goods (see clause 12)
US\$
Ad valorem freight paid:

Note:

The Merchant's attention is called to the fact that according to Clauses 11 to 13 of this Bill of Lading, the liability of the Carrier is, in most cases, limited in respect of loss of or damage to the goods and delay

Marks and Nos.	Quantity of Goods	Description of Goods	Said to contain	Gross weight, kg.	Measurement, m ³
VER283592	1 PALLET	LOADED ONTO 1 PALLET LOADED INTO 1 LCL POWDERADD(TM) 9081, BOX DANGEROUS GOODS: NOT REGULATED. PLASTICS AND ARTICLES THEREOF POLYACETALS, OTHER POLYETHERS AND EPOXIDE RESINS, IN PRIMARYFORMS POLYCARBONATES, ALKYD RESINS, POLYALLYL ESTERS AND OTHER POLYESTERS, IN PRIMARY FORMS OTHER POLYESTERS OTHER NET WEIGHT :300.0000 KGS HS-NO 39079980 **HSCODE: 39079980**		317,000	0,950
STOWED INTO CONTAINER NO.: MRSU8953788				SEAL : B136835	
TOTAL		1 PALLET		317,000 KGS	0,950 CBM

Shipper
SCAN GLOBAL LOGISTICS KFT.
C/6 59. LORINCI UT
2220 VECSES
HUNGARY

B/L No.
VER283640



SACO SHIPPING LINE LTD

Consigned to order of

SGL TRANSGROUP DE MEXICO S.A. DE CV
AV. PASEO DE LAS PALMAS 405, INT
501 Y 504 COL. LOMAS DE CHAPULTEPEC
III SECCION ALC. MIGUEL HIDALGO,
CDMX CP 11000 RFC#STM2012087C3
E:ALFREDO FUENTES AFUEN@SCANGL.COM

Notify Party and address

SGL TRANSGROUP DE MEXICO S.A. DE CV
AV. PASEO DE LAS PALMAS 405, INT
501 Y 504 COL. LOMAS DE CHAPULTEPEC
III SECCION ALC. MIGUEL HIDALGO,
CDMX CP 11000 RFC#STM2012087C3
E:ALFREDO FUENTES AFUEN@SCANGL.COM

SACO SHIPPING LINE LIMITED

44, Kroytser
PANORAMA Residence
Block A, Flat 01
3120 Limassol CYPRUS
FMC Organization No. 025875

ALL COSTS, CHARGES,
LIABILITIES AND DELAYS
RESULTING FROM EMERGENCY
QUARANTINE FOR WOOD AND
WOODEN PACKAGING OR FROM
INSUFFICIENT OR IMPROPER
LABELLING OF NON-WOODEN
PACKAGING ARE FOR
CUSTOMER'S ACCOUNT

6/04/HAM/169715

Copy

		Place of receipt BUDAPEST CFS	
Ocean vessel GSL TEGEA 616W		Port of loading HAMBURG	
Port of discharge VERACRUZ	Place of delivery VERACRUZ CFS		Freight payable BUDAPEST
		Number of original Bills of Lading 0/ZERO	
Marks and Nos. SEG AUTOMOTIVE 26EXP00073 STOWED INTO CONTAINER NO.: MRSU8953788	Quantity of Goods 1 PALLET	Description of Goods CONNECTION PART HS CODE: 850300	Said to contain Gross weight, kg. 103,000 Measurement, m ³ 0,902
		SEAL : B136835	
TOTAL		1 PALLET	103,000 KOS 0,902 CBM

FREIGHT PREPAID - SHIPPED ON BOARD - EXPRESS RELEASE

All particulars above declared by Merchant

For delivery of cargo please apply to:

INTERTEAM, S.A. DE C.V.
SERVICIOS INTERNACIONALS DE
COMERCIO, COLIMA 114 DESPACHO 201,
COLONIA ROMA, C.P. 06700 MEXICO D.F.
TEL:005255146915, FAX:005252087989
DANIELA.BORJA@INTERTEAM.COM.MX

RECEIVED for shipment the above mentioned Goods in apparent good order and condition as far as could be ascertained by exercising reasonable means of checking or as stated above.

The Carrier in accordance with the provisions contained on this side and on the reverse side of this document;

- undertakes to perform or to procure the performance of the entire transport from the place at which the Goods are taken in charge to the place designated for delivery in this document, and
- assumes liability as prescribed in this document for such transport.

One of the Bills of Lading to be surrendered duly endorsed in exchange for the Goods or delivery order.

IN WITNESS whereof three (3) original Bills of Lading have been signed, if not otherwise stated above, one of which being accomplished the other(s) to be void.

Place and date of issue

BUDAPEST 25.04.2026

Signed on behalf of the Carrier SACO SHIPPING LINE LIMITED

SACO Shipping GmbH
Wollkämmerstraße 1
21107 Hamburg
Germany



As agent only for SACO SHIPPING LINE LIMITED LIMASSOL



Declared Value of the Goods (see clause 12)
US\$
Ad valorem freight paid:

Note:

The Merchant's attention is called to the fact that according to Clauses 11 to 13 of this Bill of Lading, the liability of the Carrier is, in most cases, limited in respect of loss of or damage to the goods and delay



中国认可
检验
INSPECTION
CNAS IB0071



NO.2625020236

SAFETY DATASHEET

Product Name: Rechargeable Lithium Ion Battery
102187 3.7V 1600mAh 5.92Wh

Effective Date: 2025-02-25

Compiler: Xia Baoyue

Checker: Liu Wangping

Approver: Dongxuesheng



Shanghai Institute of Chemical Industry Testing Co., Ltd.



NO.2625020236

NINGBO TIANQI TECHNOLOGY CO.,LTD

SAFETY DATA SHEET

Rechargeable Lithium Ion Battery 102187 3.7V 1600mAh 5.92Wh

SECTION1 PRODUCT AND COMPANY IDENTIFICATION

Product name: Rechargeable Lithium Ion Battery 102187 3.7V 1600mAh 5.92Wh
Company: NINGBO TIANQI TECHNOLOGY CO.,LTD
Address: No.688 Hengshan West Road, Dagang Industrial Zone, Beilun District, Ningbo,
315800, P.R.China
Email: Shipping@tianqitech.com
Fax: 86-574-86802188
Emergency Phone: 86-574-86802076
Recommend use of the chemical and restrictions on use: /

SDS Number: 2625020236

Effective Date: 2025-02-25

SECTION2 HAZARDS IDENTIFICATION

The product is outside of the scope of GHS system.

Main Hazards:

Fire or Explosion Hazards:

Lithium ion battery contains flammable liquid electrolyte that may vent, ignite and produce sparks when subjected to high temperatures (>150℃), when damaged or abused (e.g., mechanical damage or electrical overcharging). May burn rapidly with flare-burning effect. May ignite other batteries in close proximity.

Health Hazards:

Contact with the electrolyte of battery may be irritating to skin, eyes and mucous membranes. Fire will produce irritating, corrosive and/or toxic gases. Fumes may cause dizziness or suffocation.

SECTION3 INFORMATION ON INGREDIENTS

Product name: Rechargeable Lithium Ion Battery 102187 3.7V 1600mAh 5.92Wh

Ingredient	Concentration	CAS No.	EC No.
Cobalt lithium dioxide	40-45%	12190-79-3	235-362-0

NO.2625020236

Graphite	20-25%	7782-42-5	231-955-3
Electrolyte	13-18%	21324-40-3	244-334-7
Copper foil	5-8%	7440-50-8	231-159-6
Aluminium foil	4-8%	7429-90-5	231-072-3
Diaphragm	2-5%	9002-88-4	618-339-3
Aluminium plastic film	2-3%	9003-07-0/7429-90-5/2618-352-4/231-072	
Conductive agent	0.5-1%	4937-16-4	-3/607-456-5
		7440-44-0	231-153-3

SECTION4 FIRST-AID MEASURES

Skin Exposure:

If in contact with the internal materials of battery, remove the contaminated clothing, shoes and socks, immediately flush with plenty of water for at least 20 minutes. Call a physician.

Eye Exposure:

If in contact with the internal materials of battery, lift your eyelids immediately and rinse them with running water for more than 20 minutes. Call a physician.

Inhalation Exposure:

If the internal materials of battery are inhaled, immediately remove to fresh air. If breathing is difficult give oxygen. If not breathing, give artificial respiration. Call a physician.

Oral Exposure:

Do not induce vomiting if the internal materials of battery are swallowed. Call a physician immediately.

Most Important Symptoms/Effects, Acute and Delayed:

No data available.

Indication of Immediate Medical Attention and Special Treatment Needed, if Necessary:

No data available.

SECTIONS FIRE FIGHTING MEASURES

Suitable Extinguishing Media:

Suitable:Water spray or regular foam.

Specific Hazards Arising from the Chemical:

May decompose upon combustion to generate irritating, corrosive or toxic fumes. Fumes may cause dizziness or suffocation.

Special Protective Action for Fire-fighters:

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Fire-extinguishing work is done from the windward. Uninvolved persons should evacuate to a safe place.

SECTION6 ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:

Use personal protective equipment. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Entry to noninvolved personnel should be controlled around the leakage area by roping off.Remove all sources of ignition.

Environmental Precautions:

Avoid leakage getting into the earth, ditches or waters.Avoid directly releasing the washing waste-water into the environment.

NO.2625020236

Methods and Materials for Containment and Cleaning up:

If the electrolyte leaks, use soil, sand or other non-combustible materials to absorb. The leaked batteries and dirty adsorbents should be placed in metal containers.

SECTION7 HANDLING AND STORAGE**Precautions for Safe Handling:**

Operators should be trained and strictly abide by operating procedures. Wear appropriate protective clothing and safety gloves. Keep away from ignition sources, heat and flame. No smoking at working site. Handling is performed in a well ventilated place. Avoid disassembling the battery at will and reversing battery polarity within the battery assembly. The battery must be firmly packed in inner packaging so as to effectively prevent short circuits and short circuits caused by movement. If the electrolyte leaks, avoid directly contacting with eyes and skin. Avoid inhalation. Incompatibilities: Strong oxidizing agents, combustible materials and corrosives.

Conditions for Safe Storage, Including Any Incompatibilities:

Store in a cool, dry, and well-ventilated area. Keep away from ignition sources, heat and flame. Incompatibilities: Strong oxidizing agents, combustible materials and corrosives. The battery must be firmly packed in inner packaging so as to effectively prevent short circuits and short circuits caused by movement. Storage place should be equipped with appropriate varieties and quantities of fire fighting equipment and leakage emergency treatment equipment.

SECTION8 EXPOSURE CONTROL/PPE**Control Parameters:**

GBZ 2.1-2019 Occupational Exposure Limits for Hazardous Agents in the Workplace - Part 1: Chemical Hazardous Agents:

Cobalt and compounds, as Co: PC-TWA 0.05 mg/m³; PC-STEL 0.1 mg/m³, G2B, Sensitization

Graphite dust: PC-TWA 4 mg/m³ (Total dust); PC-TWA 2 mg/m³ (Respirable dust)

Copper (calculated as Cu): Copper dust PC-TWA 1 mg/m³; Copper smoke PC-TWA 0.2 mg/m³

Aluminum metal, aluminum alloy dust: PC-TWA 3 mg/m³ (Total dust)

Diaphragm: Polyethylene dust: PC-TWA 5mg/m³ (Total dust)

Aluminium plastic film: Polypropylene dust: PC-TWA 5 mg/m³ (Total dust)

ACGIH:

Graphite: TLV-TWA 2 mg/m³

Copper: TLV-TWA 1 mg (Cu) /m³ Dust, smoke; TLV-TWA 0.2 mg (Cu) /m³ Smoke

Aluminum: TLV-TWA 1 mg/m³

Appropriate Engineering Controls:

Mechanical exhaust required. Safety shower and eye bath.

Individual Protection Measures:**Eye/Face Protection:**

Wear chemical safety glasses if needed.

Skin Protection:

Hand Protection: Wear safety gloves.

Body Protection: Wear appropriate protective clothing.

Respiratory Protection:

Wear government approved respirator if needed.

Thermal Hazards:

No data available.

Other Protect:

No smoking, drinking and eating at working site. Wash thoroughly after handling.

NO.2625020236

SECTION9 PHYSICAL/CHEMICAL PROPERTIES

Appearance: Blue plastic film shell
 Odor: Odorless
 pH Value: 8-9
 Solubility: Partial soluble in water
 Boiling Point, No data available
 Initial Boiling
 Point and Boiling
 Range:
 Melting >300°C
 Point/Freezing
 Point:
 Flash Point No data available
 (Closed Cup):
 Density/Relative No data available
 Density:
 Kinematic No data available
 Viscosity:
 Lower/Upper No data available
 Explosion
 Limit/Flammabili
 ty Limit:
 Vapour Pressure: No data available

 Relative Vapor No data available
 Density:
 Partition No data available
 Coefficient
 N-Octanol/Water(
 Log Value):
 Autoignition No data available
 Temperature:
 Decomposition No data available
 Temperature:
 Particle No data available
 Characteristics:

 Flammability No data available
 (Solid, Gas):

SECTION10 STABILITY AND REACTIVITY

Reactivity:
 No data available.
 Chemical Stability:
 Stable under normal temperatures and pressures.
 Possibility of Hazardous Reactions:
 No data available.
 Conditions to Avoid:
 Avoid misoperation, exposure to heat and open flame. Avoid mechanical or electrical abuse and overcharge.
 Prevent short circuits and short circuits caused by movement.
 Incompatible Materials:
 Strong oxidizing agents, combustible materials and corrosives.
 Hazardous Decomposition Products:
 Carbon oxides, metal oxides, etc.

NO.2625020236

SECTION11 TOXICOLOGICAL INFORMATION**Acute Toxicity:**

No data available.

Skin Corrosion/Irritation:

The electrolyte in the battery causes skin irritation.

Serious Eye Damage/Irritation:

The electrolyte in the battery causes eye irritation.

Respiratory Sensitization:

No data available.

Carcinogenicity:

No data available.

Skin Sensitization:

No data available.

Germ Cell Mutagenicity:

No data available.

Reproductive Toxicity:

No data available.

Specific Target Organ Toxicity -Single Exposure:

No data available.

Specific Target Organ Toxicity -Repeated Exposure:

No data available.

Aspiration Hazard:

No data available.

SECTION12 ECOLOGICAL INFORMATION**Toxicity:**

No data available.

Persistence and Degradability:

No data available.

Bioaccumulative Potential:

No data available.

Mobility in Soil:

No data available.

Other Adverse Effects:

No data available.

SECTION13 DISPOSAL CONSIDERATION**Disposal Methods:**

The disposal of discarded battery shall comply with the requirements of relevant laws, regulations, policies and standards such as the "Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste" and "Technical Policy for the Prevention and Control of Waste Battery Pollution". Contact a licensed professional waste disposal service to dispose of wastes. Used battery being transported for disposal or reclamation should be carefully checked prior to shipment to ensure the integrity of each battery and its suitability for transport.

SECTION14 TRANSPORT INFORMATION

NO.2625020236

**Lithium Battery
Contained in
HELMETS during
Transport:**

The product has passed the test items of Manual of Tests and Criteria Section UN 38.3.
The total net weight of the lithium batteries is less than 5 kg.

**RID/ADR (2023
Edition) :**

The product is not subject to the other provisions of RID/ADR according to special provision 188.

According to 2.2.9.1.7(g), Manufacturers and subsequent distributors of cells or batteries manufactured shall make available the test summary as specified in the Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5.

**IATA DGR (66th
Edition) :**

The product shall meet the General Requirements and section II of Packaging Instruction 967.

The package must be capable of withstanding the stacking test required in PI 967-II.
According to 3.9.2.6.1(g) , Manufacturers and subsequent distributors of cells or batteries manufactured after 30 June 2003 shall make available the test summary as specified in the Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5.

**IMO IMDG CODE
(2022 Edition) :**

The product is not subject to the other provisions of IMO IMDG CODE according to special provision 188.

According to 2.9.4.7, Manufacturers and subsequent distributors of cells or batteries manufactured shall make available the test summary as specified in the Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5.

SECTION15 REGULATORY INFORMATION

Domestic Regulations:

Lithium Battery Contained in the Equipment during Transport:

Regulations Concerning Road Transportation of Dangerous Goods (JT/T 617-2018) :

UN Number: UN3481

Name and Description: Lithium ion batteries contained in equipment

The product has passed the test items of Manual of Tests and Criteria Section 38.3.

The product is not subject to JT/T 617-2018 according to special provision 188.

List of Dangerous Goods (GB 12268-2012) :

UN Number: UN3481

Shipping Name: Lithium ion batteries contained in equipment

Packing Group: II

The product has passed the test items of Manual of Tests and Criteria Section 38.3.

The product is not subject to GB 12268-2012 according to special provision 188.

List of Dangerous Goods by Rail(TB/T 30006-2022):

Number: 91046

Name of Product: Lithium ion batteries contained in equipment

The product has passed the test items of Manual of Tests and Criteria Section 38.3.

The product is not subject to TB/T 30006-2022 according to special provision 78, 79.

International Regulations:

Directive (EU) 2023/1542 and 2013/56/EU:

The label, disposal and recycling of the battery shall meet the requirements of EU Directive (EU) 2023/1542 and 2013/56/EU.

NO.2625020236

ICAO TI:

1. Unless be exempted according to ICAO TI, the lithium ion cell/batteries (UN 3480, PI 965) and lithium metal cell/batteries (UN 3090, PI 968) are forbidden for carriage on passenger aircraft.
2. Unless be approved according to ICAO TI, Lithium ion cells/batteries (UN 3480, PI 965) must be offered for transport at a state of charge (SoC) not exceeding 30% of their rated design capacity.

SECTION16 OTHER INFORMATION**Preparation Date:**

2025-02-25

Preparation Department:

Shanghai Institute of Chemical Industry Testing Co., Ltd.

Tel(Fax):+86-21-52815377/31765555

Revision:

0

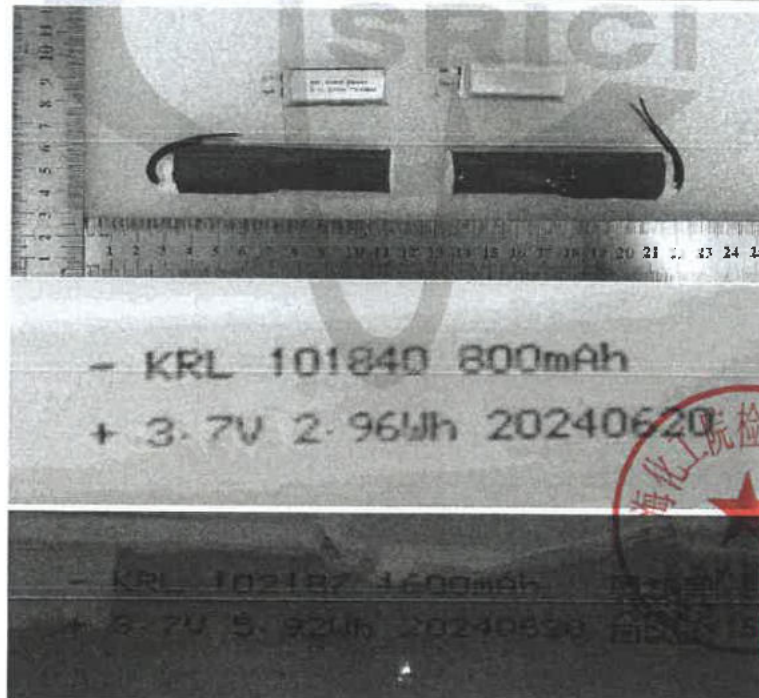
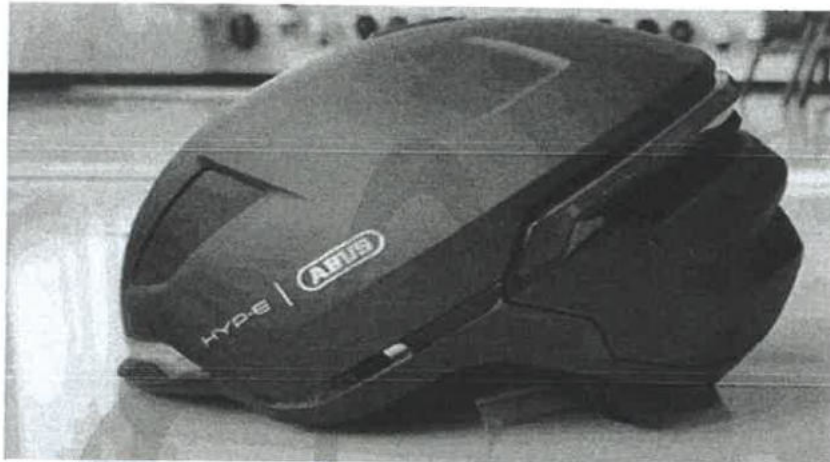
Abbreviations and Acronyms:

CAS: Chemical Abstracts Service EC: European Commission ACGIH: American Conference of Governmental Industrial Hygienists PC-TWA: Permissible concentration-time weighted average PC-STEL: Permissible concentration-short term exposure limit TLV-TWA: Time weighted average threshold limit G2B: Possibly carcinogenic to humans Sensitization: The substance may have allergenic effects ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road RID: Regulations concerning the International Carriage of Dangerous Goods by Rail IMD CODE: International Maritime Organization International Maritime Code for Dangerous Goods EmS: Emergency schedule IATA DGR: International Air Transport Association Dangerous Goods Regulations EU: European Union ICAO TI: International Civil Aviation Organization Technical Instructions for the Safe Transport of Dangerous Goods by Air PI:Packaging Instruction

Other Information:

This SDS is only compiled for battery and based on the information such as ingredients provided by the applicant and our current knowledge. This SDS shall be used only as a guide. If the battery is used as a component in another product, the information in this SDS may not be applicable. The users of this SDS must make independent judgments on the correctness and completeness and then decide its suitability according to the actual situation. The users should take the relevant legal responsibilities for the consequences of use.

NO.2625020236



END OF REPORT

宁波海马电子有限公司

Ningbo Seahorse Electronics Co. , Ltd

Material Safety Data Sheet

产品安全技术说明书

Ningbo Seahorse Electronics Co., Ltd

MSDS No: 202506-25A

Product Name: Lithium Ion Battery Cell

Issued and Revised Date:25-June-2025

Section 1 Chemical Product and Company Identification

第一部分：产品名称及企业标识

Product information 产品信息

Lithium-Ion battery 锂离子充电电池

Model name: 500830 型号: 500830

Norminal Voltage: 3.70 V

额定电压: 3.70V

Watt-hour Rating: $\leq 0.37\text{Wh}$ 额定瓦特小时: $\leq 0.37\text{Wh}$

Size (L*W*T): (30.5*8.5*5.2)mm

尺寸 (长*宽*厚): (30.5*8.5*5.2)mm

Manufacturer: Ningbo Seahorse Electronics Co., Ltd

生产厂家: 宁波海马电子有限公司

Address: Dajiahe Town, Ninghai county, Ningbo, Zhejiang

地址: 浙江省宁波市宁海县大佳何镇工业小区

Telephone: +86-574-65159999

电话: +86-574-65159999

第二部分 成分/组成信息

Section 2 Composition/Information on Ingredient

危险成分 (化学名称) Hazardous Ingredients (Chemical Name)	含量及含量百分比(%) Concentration or concentration ranges (%)	CAS 编号 CAS Number
钴酸锂 Lithium Cobalt Oxide	49.5	12190-79-3
聚偏氟乙烯 PVDF	0.33	24937-79-9
铝 Aluminium	7.6	7429-90-5
石墨 Graphite	16.3	7782-42-5
丁苯橡胶 SBR	0.05	9003-55-8
羧甲基纤维素 Carboxymethylcellulose	0.28	9000-11-7

铜 Copper	6.96	7440-50-8
镍 Nickel	0.06	7440-02-0
六氟磷酸锂 Lithium Hexafluorophosphate	10.96	21324-40-3
聚乙烯 Polyethylene	4.03	9002-88-4
尼龙 Nylon	3.93	24937-16-4

第三部分 主要危险性鉴定

Section 3 Hazards Identification

爆炸危险性 Explosive risk	该物品不属于爆炸危险品 This article does not belong to the explosion dangerous goods
易燃危险性 Flammable risk	该物品不属于易燃危险品 This article does not belong to the flammable material
氧化危险性 Oxidation risk	该物品不属于氧化危险品 This article does not belong to the oxidation of dangerous goods
毒害危险性 Toxic risk	该物品不属于毒害危险品 This article does not belong to the toxic dangerous goods
放射危险性 Radioactive risk	该物品不属于放射危险品 This article does not belong to the radiation of dangerous goods
腐蚀危险性 Mordant risk	该物品不属于腐蚀危险品 This article does not belong to the corrosion of dangerous goods
其他危险性 other risk	该物品为锂聚合物电池，瓦时率为 0.37Wh。 This article is the Li-Polymer Battery, Watt hour rate 0.37Wh.

第四部分 急救措施

Section 4 First aid measures

眼睛接触：提起眼皮用大量水冲洗眼睛至少 15 分钟，立即就医。

After Eye Contact： Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

皮肤接触：脱掉被污染的衣服，并用大量水或淋浴冲洗皮肤 15 分钟，立即就医。

After Skin Contact： Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.

吸入：如有吸入，迅速脱离现场至新鲜空气处，如果停止呼吸，进行人工呼吸。如果呼吸困难，供给氧气。

After Inhalation: If inhaled, quickly leave the site to fresh air. If you stop breathing, perform artificial respiration. If breathing is difficult, supply oxygen.

食入：如有知觉，请用水冲洗口腔，就医。

After Ingestion: If swallowed, wash out mouth with water provided person is conscious Call a physician.

第五部分 消防措施

Section 5 Fire-fighting measures

危险特性：在火灾时可释放有害浓烟、气体或者蒸汽。

Characteristics of Hazard: Toxic fumes; gases or vapors may evolve on burning.

有害燃烧产物：一氧化碳和二氧化碳、HF、氟磷化物。

Hazardous Combustion Products: CO,CO₂, HF, phosphorus fluoride.

灭火方法及灭火剂：对锂电池，大量冷水是一个有效的灭火剂。不要使用温或热水。不要使用哈龙类灭火材料。可使用干粉、沙、土。

Fire-extinguishing Methods and Extinguishing Media: Copious amounts of cold water are an effective extinguishing medium for lithium batteries. Don't use warm or hot water. Don't use Halon type extinguishing material.

May use dry powder, sand, earth.

灭火注意事项：消防人员须佩戴防毒面具、穿全身消防服。

Attention in Fire-extinguishing: The Firemen should put on antigas masks and full fire-fighting suits.

第六部分 泄漏应急处理

Section 6 Accidental release measures

当电池发生泄漏，液体可以用砂，土，或其他惰性物质吸收，受污染的区域应同时通风。

When leakage of batteries happens, liquid could be absorbed with sands, earth, or other inert substance, and the contaminated area should be ventilated meantime.

未放热或燃烧的破损电池，应装入密封的塑料袋或容器。

Damaged batteries that are not hot or burning should be placed in a sealed plastic bag or container.

第七部分 操作处置和储存

Section 7 Handling and storage

操作注意事项：储存时远离食物和水源。吃饭喝水前彻底清洗双手。储有化学物的容器搬用时需防止静电的产生和积聚。

Precautions for safe handling: Consumption of food and beverage should be avoided in work areas. Wash hands with soap and water before eating, drinking. Ground containers when transferring liquid to prevent static accumulation and discharge.

有关火灾及防止爆炸的资料：电池在拆开、挤压、遇火或高温情况下，会引起起火或爆炸，严禁短路或非正确操作。

Information about fire and explosion protection: Batteries may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity.

储存注意事项：储存在一个低温，干燥，通风良好的环境。远离热源，避免长时间阳光照射。未使用时密封容器。

Conditions for safe storage, including any incompatibilities: Requirements to be met by storerooms and receptacles. Store in a cool, dry, well-ventilated place. Keep away from heat, avoiding the long time of sunlight.

第八部分 接触控制 / 个人防护

Section 8 Exposure controls/personal protection

最高容许浓度：没有适用标准

Maximum Allowable Concentration: No Standard available

工程控制：操作未破损的电池，没有工程控制要求。对于破损的电池，个人防护用品应包括 化学品防护手套和安全眼镜。

Engineering Controls: no engineering controls are required for handling batteries that have not been damaged. Personal protective equipment for damaged batteries should include chemical resistant gloves and safety glasses.

第九部分 理化特性

Section 9 Physical and Chemical Properties

有关基本物理及化学特性的信息 Information on basic physical and chemical properties	
外观 Appearance	银色 Silvery
形状 Form	方形 Prismatic
气味 Odour	无味 Odorless

第十部分 稳定性和反应活性

Section 10 Stability and reactivity

稳定性： 常温常压稳定。

Stability: Stable under normal temperatures and pressures.

禁配物： 氧化剂。

Incompatibility: Oxidizing agents.

避免接触的条件： 热和明火、短路和水。

Conditions to Avoid: Heat and open flame, short circuit, and water.

聚合危害： 不会发生。

Hazardous polymerization: Will not occur.

分解产物： 一氧化碳、二氧化碳、HF、氟磷化物。

Decomposition Products: CO, CO₂, HF, Phosphorus fluoride.

第十一部分 毒理性资料

Section 11 Toxicological information

标志及症状： 无，除非电池破裂。

Signs & symptoms: None, unless battery ruptures.

内部物质暴露的情况下，蒸汽烟雾可能对眼睛和皮肤的刺激性。

In the event of exposure to internal contents, vapour fumes may be very irritating to the eyes and skin.

吸入： 对肺有刺激性。

Inhalation: Lung irritant.

皮肤接触： 对皮肤有刺激性。

Skin contact: Skin irritant.

眼睛接触： 对眼睛有刺激性。

Eye contact: Eye irritant.

食入： 吞下中毒。

Ingestion: Poisoning if swallowed.

下列情况下会危险人员身体健康：如果与电池内部材料直接接触，皮肤可能会出现干燥、灼烧等 轻微或严重的刺激，并且损坏靶器官的神经，肝脏和肾脏。

Medical conditions generally aggravated by exposure: In the event of exposure to internal contents, moderate to server irritation, burning and dryness of the skin may occur, Target organs nerves, liver and kidneys.

第十二部分 生态学资料

Section 12 Ecological information

生态毒性： 无

Ecological Toxicity: N/A

生物降解性： 无

Biodegradability: N/A

非生物降解性： 无

Non-biodegradability: N/A

其它有害作用： 该物质对环境有无明显危害。

Other Hazardous: Will not effect environmental evidently.

第十三部分 废弃处置

Section 13 Disposal consideration

废弃处置方法： 建议遵照国家和地方法规处置或再利用。

Waste Treatment: Recycle or dispose of in accordance with government, state & local regulations.

废弃注意事项： 废电池不能被当作普通垃圾。不能扔进火中或置于高温下。不能解体，刺穿，破碎或类似的处理。最好的办法是回收利用。

Attention for Waste Treatment: Deserted batteries couldn't be treated as ordinary trash.

Couldn't be thrown into fire or placed in high temperature. Couldn't be dissected, pierced, crushed or treated similarly. Best way is recycling.

第十四部分 运输信息

Section 14 Transport information

UN 编号 UN NO.	UN3480 UN3481
运输专有名称 Proper Shipping Name	UN3480 锂离子电池 UN3480 Lithium Ion Batteries UN3481 锂离子电池与设备打包 UN3481 Lithium Ion Batteries Packed With Equipment UN3481 锂离子电池装在设备中 UN3481 Lithium Ion Batteries Contained In Equipment
运输标签 Label for conveyance	锂电池操作标签 Lithium Battery Label 9 类危险品标签 Class 9 Hazard Label 仅限货机标签 Cargo aircraft Only Label

危险品规例规定，运输前，每一个电池设计通过联合国《试验和标准手册》第七版第 38.3 节所载的测试。

The dangerous goods regulations require that each battery design be subject to tests contained in UNITED NATIONS the "Manual of Test and Criteria" (ST/SG/AC.10/11/Rev.7) Section 38.3.

危险性分类：

该电池包装应遵守 IATA DGR 65 版包装说明 965/966/967 的运输要求。

The package of battery should be complied with the requirements of Packing Instruction 965/966/967 of IATA DGR 65rd Edition for transportation.

该电池包装应遵守 IMDG-CODE（41-22）特殊规定 SP188。

The package of battery should be complied with the requirements Special Provisions 188 of IMDG-CODE (41-22) .

第十五部分 法规信息

Section 15 Regulation information

法规信息：

联合国《关于危险货物运输的建议书规章范本》（22 版）、国际航空运输协会《危险品规则》（65 版）、《国际海运危险货物规则》（IMDGCODE）（41-22 版）、《国际危险货物道路运输欧洲协定》（ADR）（2023 版）、《国际危险货物铁路运输欧洲协定》（RID）（2023 版）

Regulatory information: Recommendations on the transport of dangerous goods-model Regulations 22st, IATA dangerous goods regulations 65rd, International Maritime Dangerous Goods Code (41-22), European Agreement concerning the International Carriage of Dangerous Goods by Road (2023), Regulations concerning the International Carriage of Dangerous Goods by Rail (2023)

第十六部分 其他信息

Section 16 Other information

此信息并非对所有由海马生产的电池均有效。此信息来自可靠来源，但不对所包含信息的完整性和准确性做任何保证。宁波海马电子有限公司对因电池使用不当造成的任何损坏或损失不承担任何责任，用户应掌握正确的使用方法并对电池的使用负责。

This information is not effective to all the batteries manufactured by SeaHorse This information comes from reliable sources, but no warranty is made to the completeness and

accuracy of information contained. Ningbo Seahorse Electronics Co., Ltd. doesn't assume responsibility for any damage or loss because of misuse of batteries. User's should grasp the correct use method and be responsible for the use of batteries.



声明

Declaration

1. 对检验报告若有异议，应于收到报告之日起十五天内向检验单位提出。

Objections to the test report must be submitted to ESTL within 15 days.

2. 未经本试验室书面同意，不得部分地复制本报告。

Nobody is allowed to photocopy or partly photocopy this test report without written permission of ESTL.

3. 本报告仅对送检样品负责。

The test report is valid for the tested samples only.

4. 本报告涂改无效。

The test report is invalid if altered.

Prepared: 杨云胜

Audited: 许长兵

Approved: 王琳



材料安全数据表

Material Safety Data Sheet

报告编号Report No.: S03A22060636M00101

样品名称: 锂离子电池
Sample Name: Li-ion Battery

样品型号: LX Y 901530
Sample Model:

委托单位: 深圳市力翔源科技有限公司
Applicant: Shenzhen Lixiangyuan Technology Co., Ltd.

签发日期: 2022-07-19
Issue Date:

广东储能检测技术有限公司

Guangdong ESTL Technology Co., Ltd.



第一部分 产品和厂商信息 Section 1 Identification of the product and supplier	
样品名称 Sample Name	锂离子电池 Li-ion Battery
样品型号 Sample Model	LXY 901530
规格 Rating	3.7V 350mAh 1.295Wh
测试实验室 Testing laboratory	广东储能检测技术有限公司 Guangdong ESTL Technology Co., Ltd.
测试地址 Testing Address	广东省东莞市松山湖园区总部二路9号1栋1单元101、201-208室。 Room 101, 201-208, Unit 1, Building 1, No. 9 Headquarters 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China.
委托单位 Applicant	深圳市力翔源科技有限公司 Shenzhen Lixiangyuan Technology Co., Ltd.
委托单位地址 Applicant Address	深圳市龙华街道清华社区和平路52号鸿华中心15层1511单元 Unit 1511, 15th Floor, Honghua Center, 52 Heping Road, Qinghua Community, Longhua Street, Shenzhen
制造商 Manufacturer	深圳市力翔源科技有限公司 Shenzhen Lixiangyuan Technology Co., Ltd.
制造商地址 Manufacturer Address	深圳市龙华街道清华社区和平路52号鸿华中心15层1511单元 Unit 1511, 15th Floor, Honghua Center, 52 Heping Road, Qinghua Community, Longhua Street, Shenzhen
鉴定依据 Inspection according to	依据GB/T16483-2008&ISO11014:2009编制 According to GB/T16483-2008&ISO11014:2009
紧急联系电话 Emergency telephone call	139246559863
测试日期 Tested date	2022-06-18 to 2022-07-04
生效时间 Effective Date	2022-07-19

检测 Tested by

吴星霖

审核 Reviewed by 批准 Approved by

新疆



[Signature]

第二部分 成分/组成信息

Section 2 Composition/Information on Ingredient

危险成分 (化学名称) Hazardous Ingredients (Chemical Name)	含量及含量百分比(%) Concentration or concentration ranges (%)	CAS编号 CAS Number
钴酸锂 Lithium Cobalt Oxide	49.5	12190-79-3
聚偏氟乙烯 PVDF	0.33	24937-79-9
铝 Aluminium	7.6	7429-90-5
石墨 Graphite	16.3	7782-42-5
丁苯橡胶 SBR	0.05	9003-55-8
羧甲基纤维素 Carboxymethylcellulose	0.28	9000-11-7
铜 Copper	6.96	7440-50-8
镍 Nickel	0.06	7440-02-0
六氟磷酸锂 Lithium Hexafluorophosphate	10.96	21324-40-3
聚乙烯 Polyethylene	4.03	9002-88-4
尼龙 Nylon	3.93	24937-16-4

第三部分 主要危险性鉴定

Section 3 Hazards Identification

爆炸危险性 Explosive risk	该物品不属于爆炸危险品 This article does not belong to the explosion dangerous goods
易燃危险性 Flammable risk	该物品不属于易燃危险品 This article does not belong to the flammable material
氧化危险性 Oxidation risk	该物品不属于氧化危险品 This article does not belong to the oxidation of dangerous goods
毒害危险性 Toxic risk	该物品不属于毒害危险品 This article does not belong to the toxic dangerous goods
放射危险性 Radioactive risk	该物品不属于放射危险品 This article does not belong to the radiation of dangerous goods
腐蚀危险性 Mordant risk	该物品不属于腐蚀危险品 This article does not belong to the corrosion of dangerous goods
其他危险性 other risk	该物品为锂离子电池，瓦时率为1.295Wh。 This article is the Li-ion Battery, Watt hour rate 1.295Wh.

第四部分 急救措施

Section 4 First aid measures

眼睛接触: 提起眼皮用大量水冲洗眼睛至少15分钟, 立即就医。

After Eye Contact: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

皮肤接触: 脱掉被污染的衣服, 并用大量水或淋浴冲洗皮肤15分钟, 立即就医。

After Skin Contact: Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.

吸入: 如有吸入, 迅速脱离现场至新鲜空气处, 如果停止呼吸, 进行人工呼吸。如果呼吸困难, 供给氧气。

After Inhalation: If inhaled, quickly leave the site to fresh air. If you stop breathing, perform artificial respiration. If breathing is difficult, supply oxygen.

食入: 如有知觉, 请用水冲洗口腔, 就医。

After Ingestion: If swallowed, wash out mouth with water provided person is conscious Call a physician.

第五部分 消防措施

Section 5 Fire-fighting measures

危险特性: 在火灾时可释放有害浓烟、气体或者蒸汽。

Characteristics of Hazard: Toxic fumes; gases or vapors may evolve on burning.

有害燃烧产物: 一氧化碳和二氧化碳、HF、氟磷化物。

Hazardous Combustion Products: CO, CO₂, HF, phosphorus fluoride.

灭火方法及灭火剂: 对锂电池, 大量冷水是一个有效的灭火剂。不要使用温或热水。不要使用哈龙类灭火材料。可使用干粉、沙、土。

Fire-extinguishing Methods and Extinguishing Media: Copious amounts of cold water are an effective extinguishing medium for lithium batteries. Don't use warm or hot water. Don't use Halon type extinguishing material.

May use dry powder, sand, earth.

灭火注意事项: 消防人员须佩戴防毒面具、穿全身消防服。

Attention in Fire-extinguishing: The Firemen should put on antigas masks and full fire-fighting suits.

第六部分 泄漏应急处理

Section 6 Accidental release measures

当电池发生泄漏，液体可以用砂，土，或其他惰性物质吸收，受污染的区域应同时通风。

When leakage of batteries happens, liquid could be absorbed with sands, earth, or other inert substance, and the contaminated area should be ventilated meantime.

未放热或燃烧的破损电池，应装入密封的塑料袋或容器。

Damaged batteries that are not hot or burning should be placed in a sealed plastic bag or container.

第七部分 操作处置和储存

Section 7 Handling and storage

操作注意事项：储存时远离食物和水源。吃饭喝水前彻底清洗双手。储有化学物的容器搬用时需防止静电的产生和积聚。

Precautions for safe handling: Consumption of food and beverage should be avoided in work areas. Wash hands with soap and water before eating, drinking. Ground containers when transferring liquid to prevent static accumulation and discharge.

有关火灾及防止爆炸的资料：电池在拆开、挤压、遇火或高温情况下，会引起起火或爆炸，严禁短路或非正确操作。

Information about fire and explosion protection: Batteries may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity.

储存注意事项：储存在一个低温，干燥，通风良好的环境。远离热源，避免长时间阳光照射。未使用时密封容器。

Conditions for safe storage, including any incompatibilities: Requirements to be met by storerooms and receptacles. Store in a cool, dry, well-ventilated place. Keep away from heat, avoiding the long time of sunlight.

第八部分 接触控制 / 个人防护

Section 8 Exposure controls/personal protection

最高容许浓度：没有适用标准

Maximum Allowable Concentration: No Standard available

工程控制：操作未破损的电池，没有工程控制要求。对于破损的电池，个人防护用品应包括 化学品防护手套和安全眼镜。

Engineering Controls: no engineering controls are required for handling batteries that have not been damaged. Personal protective equipment for damaged batteries should include chemical resistant gloves and safety glasses.

第九部分 理化特性

Section 9 Physical and Chemical Properties

有关基本物理及化学特性的信息 Information on basic physical and chemical properties	
外观Appearance	银色 Silvery
形状Form	方形 Prismatic
气味Odour	无味 Odorless

第十部分 稳定性和反应活性

Section 10 Stability and reactivity

稳定性: 常温常压稳定。

Stability: Stable under normal temperatures and pressures.

禁配物: 氧化剂。

Incompatibility: Oxidizing agents.

避免接触的条件: 热和明火、短路和水。

Conditions to Avoid: Heat and open flame, short circuit, and water.

聚合危害: 不会发生。

Hazardous polymerization: Will not occur.

分解产物: 一氧化碳、二氧化碳、HF、氟磷化物。

Decomposition Products: CO, CO₂, HF, Phosphorus fluoride.

第十一部分 毒理性资料

Section 11 Toxicological information

标志及症状: 无, 除非电池破裂。

Signs & symptoms: None, unless battery ruptures.

内部物质暴露的情况下, 蒸汽烟雾可能对眼睛和皮肤的刺激性。

In the event of exposure to internal contents, vapour fumes may be very irritating to the eyes and skin.

吸入: 对肺有刺激性。

Inhalation: Lung irritant.

皮肤接触: 对皮肤有刺激性。

Skin contact: Skin irritant.

眼睛接触: 对眼睛有刺激性。

Eye contact: Eye irritant.

食入: 吞下中毒。

Ingestion: Poisoning if swallowed.

下列情况下会危险人员身体健康: 如果与电池内部材料直接接触, 皮肤可能会出现干燥、灼烧等 轻微或严重的刺激, 并且损坏靶器官的神经, 肝脏和肾脏。

Medical conditions generally aggravated by exposure: In the event of exposure to internal contents, moderate to severe irritation, burning and dryness of the skin may occur, Target organs nerves, liver and kidneys.

第十二部分 生态学资料

Section 12 Ecological information

生态毒性: 无

Ecological Toxicity: N/A

生物降解性: 无

Biodegradability: N/A

非生物降解性: 无

Non-biodegradability: N/A

其它有害作用: 该物质对环境有无明显危害。

Other Hazardous: Will not effect environmental evidently.

第十三部分 废弃处置

Section 13 Disposal consideration

废弃处置方法: 建议遵照国家和地方法规处置或再利用。

Waste Treatment: Recycle or dispose of in accordance with government, state & local regulations.

废弃注意事项: 废电池不能被当作普通垃圾。不能扔进火中或置于高温下。不能解体, 刺穿, 破碎或类似的处理。最好的办法是回收利用。

Attention for Waste Treatment: Deserted batteries couldn't be treated as ordinary trash.

Couldn't be thrown into fire or placed in high temperature. Couldn't be dissected, pierced, crushed or treated similarly. Best way is recycling.

第十四部分 运输信息

Section 14 Transport information

UN 编号 UN NO.	UN3480 UN3481
运输专有名称 Proper Shipping Name	UN3480 锂离子电池 UN3480 Lithium Ion Batteries UN3481 锂离子电池与设备打包 UN3481 Lithium Ion Batteries Packed With Equipment UN3481 锂离子电池装在设备中 UN3481 Lithium Ion Batteries Contained In Equipment
运输标签 Label for conveyance	锂电池操作标签 Lithium Battery Label 9类危险品标签 Class 9 Hazard Label 仅限货机标签 Cargo aircraft Only Label

危险品规例规定, 运输前, 每一个电池设计通过联合国《试验和标准手册》第七版第38.3节所载的测试。报告编号: S03A22060636U00101。

The dangerous goods regulations require that each battery design be subject to tests contained in UNITED NATIONS the "Manual of Test and Criteria" (ST/SG/AC.10/11/Rev.7) Section 38.3.

Report No.: S03A22060636U00101.

危险性分类:

该电池包装应遵守IATA DGR 63版包装说明965/966/967的运输要求。

The package of battery should be complied with the requirements of Packing Instruction 965/966/967 of IATA DGR 63rd Edition for transportation.

该电池包装应遵守IMDG-CODE (40-20) 或“关于危险货物运输的规章范本” 21st的特殊规定188。

The package of battery should be complied with the requirements of 188 of IMDG*CODE (40-20) or the <<Recommendations On The Transport Of Dangerous Goods-Model Regulations>> (21st).

第十五部分 法规信息

Section 15 Regulation information

法规信息:

联合国《关于危险货物运输的建议书规章范本》（21版）、国际航空运输协会《危险品规则》（63版）、《国际海运危险货物规则》（IMDGCODE）（40-20版）、《国际危险货物道路运输欧洲协定》（ADR）（2021版）、《国际危险货物铁路运输欧洲协定》（RID）（2021版）

Regulatory information: Recommendations on the transport of dangerous goods-model Regulations 21st, IATA dangerous goods regulations 63rd, International Maritime Dangerous Goods Code (40-20), European Agreement concerning the International Carriage of Dangerous Goods by Road (2021), Regulations concerning the International Carriage of Dangerous Goods by Rail (2021)

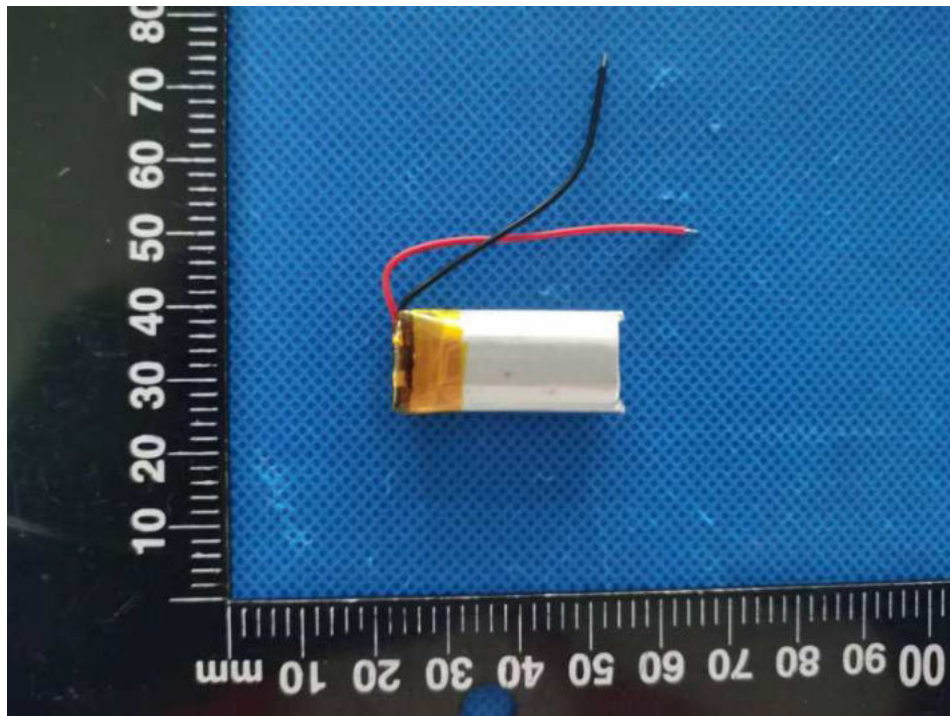
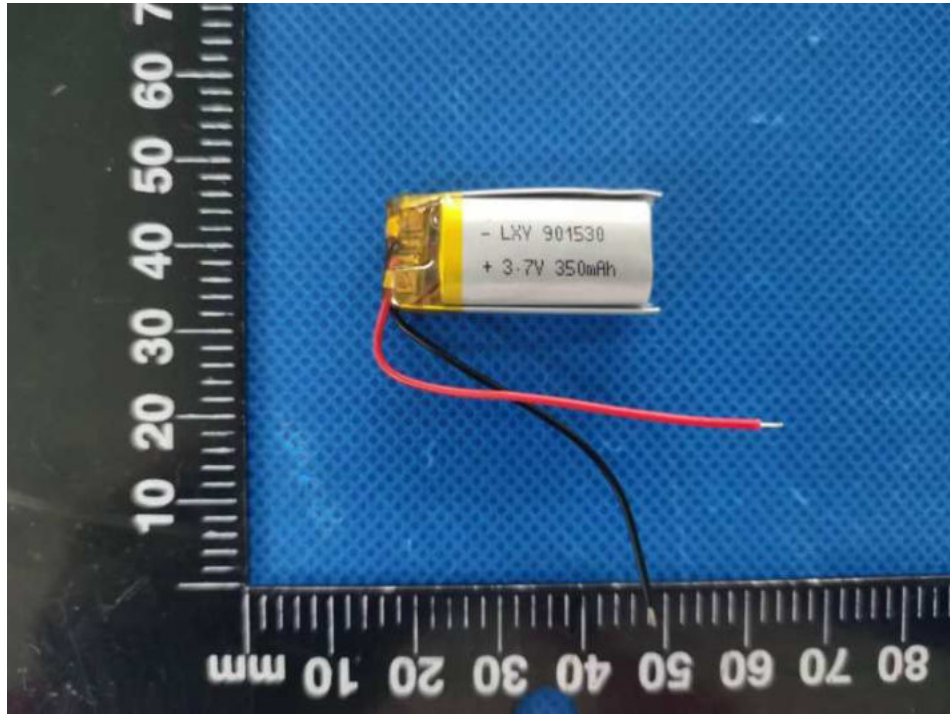
第十六部分 其他信息

Section 16 Other information

此信息并非对所有由深圳市力翔源科技有限公司生产的电池均有效。此信息来自可靠来源，但不对所包含信息的完整性和准确性做任何保证。广东储能检测技术有限公司对因电池使用不当造成的任何损坏或损失不承担任何责任，用户应掌握正确的使用方法并对电池的使用负责。

This information is not effective to all the batteries manufactured by Shenzhen Lixiangyuan Technology Co., Ltd. This information comes from reliable sources, but no warranty is made to the completeness and accuracy of information contained. Guangdong ESTL Technology Co., Ltd. doesn't assume responsibility for any damage or loss because of misuse of batteries. User's should grasp the correct use method and be responsible for the use of batteries.

Photos of Samples and Labels/样品照片及标识



声明 Declaration

1. 本报告无批准人、审核人及鉴定人签名无效。

The test report is invalid without the signatures of Ratifier, Reviewer and Testing engineer.

2. 对检验报告若有异议，应于收到报告之日起十五天内向检验单位提出。

Objections to the test report must be submitted to ESTL within 15 days.

3. 未经本试验室书面同意，不得部分地复制本报告。

Nobody is allowed to photocopy or partly photocopy this test report without written permission of ESTL.

4. 本报告仅对送检样品负责。

The test report is valid for the tested samples only.

5. 本报告涂改无效。

The test report is invalid if altered.

--- 报告结束 ---

--- End of report ---

Shipper
QCS-QUICK CARGO SERVICE GMBH
WERNER-WITT-STRASSE 5
21035 HAMBURG, GERMANY
TAX-ID:DE114202533
TELEPHONE: 00494023838940

B/L No.
VER283650



SACO SHIPPING LINE LTD

SACO SHIPPING LINE LIMITED

44, Kroytser
PANORAMA Residence
Block A, Flat 01
3120 Limassol CYPRUS
FMC Organization No. 025875

6/04/HAM/169720

Copy

Consigned to order of
AIRMAR TRANSPORTES INTERNACIONALES
S.A. DE C.V. NORTE 174, NO. 549,
COL PENSADOR MEXICANO 15510 MEXICO,
CMX MEXICO TAX ID: ATI 9307029F8
TEL: 52.55.19.99.90.00

Notify Party and address
AIRMAR TRANSPORTES INTERNACIONALES
S.A. DE C.V. NORTE 174, NO. 549,
COL PENSADOR MEXICANO 15510 MEXICO,
CMX MEXICO TAX ID: ATI 9307029F8
TEL: 52.55.19.99.90.00

		Place of receipt HAMBURG CFS			
Ocean vessel GSL TEGEA 616W	Port of loading HAMBURG				
Port of discharge VERACRUZ	Place of delivery VERACRUZ CFS	Freight payable VERACRUZ	Number of original Bills of Lading 0/ZERO		
Marks and Nos.	Quantity of Goods	Description of Goods	Said to contain	Gross weight, ka.	Measurement, m ³

CARGO DETAILS AS PER ATTACHED STATEMENT

FREIGHT COLLECT - SHIPPED ON BOARD - EXPRESS RELEASE

All particulars above declared by Merchant

For delivery of cargo please apply to:

INTERTEAM, S.A. DE C.V.
SERVICIOS INTERNACIONALS DE
COMERCIO, COLIMA 114 DESPACHO 201,
COLONIA ROMA,C.P. 06700 MEXICO D.F.
TEL:005255146915,FAX:005252087989
DANIELA.BORJA@INTERTEAM.COM.MX

RECEIVED for shipment the above mentioned Goods in apparent good order and condition as far as could be ascertained by exercising reasonable means of checking or as stated above.

The Carrier in accordance with the provisions contained on this side and on the reverse side of this document;

- undertakes to perform or to procure the performance of the entire transport from the place at which the Goods are taken in charge to the place designated for delivery in this document, and
- assumes liability as prescribed in this document for such transport.

One of the Bills of Lading to be surrendered duly endorsed in exchange for the Goods or delivery order.

IN WITNESS whereof three (3) original Bills of Lading have been signed, if not otherwise stated above, one of which being accomplished the other(s) to be void.

Place and date of issue
HAMBURG 25.04.2026

Signed on behalf of the Carrier SACO SHIPPING LINE LIMITED

SACO Shipping GmbH
Wolkämmerstraße 1
21107 Hamburg
Germany



As agent only for SACO SHIPPING LINE LIMITED LIMASSOL



Declared Value of the Goods (see clause 12)
US\$
Ad valorem freight paid:

Note:

The Merchant's attention is called to the fact that according to Clauses 11 to 13 of this Bill of Lading, the liability of the Carrier is, in most cases, limited in respect of loss of or damage to the goods and delay

Marks and Nos.	Quantity of Goods	Description of Goods	Said to contain	Gross weight, kg.	Measurement, m ³
ABUS AUGUST BREMICKER SOHNE KG BICYCLE VISION STORE SA DE CV	11 PALLETS	BIKE HELMETS AND REAR LIGHTS CONTAINS UN 3481; LITHIUM IONBATTERIES CONTAINED IN EQUIPMENT; 9; P.I: 967 II; AS PER SV 188 AND UN3091; LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT; 9; P.I: 970 II; AS PER SV188 AS PER PROFORMA INVOICE: 1035694, 1007772, 1035693, 1007773, 1113059, 1007632, 1007633, 1017439, 1126550, 1007630, 1113057 HS-CODE: 392490, 420292, 570339, 650610, 830140, 853180		751,697	12,952
STOWED INTO CONTAINER NO.: MRSU8953788				SEAL : B136835	
TOTAL		11 PALLETS		751,697 KGS	12,952 CBM

Ref. No: AL MN-PSDS-V3-APS nv

Release date: 1 Apr, 2024

PRODUCT SAFETY DATA SHEET

This PSDS document refers to batteries as a consumer product. Under the Global Harmonized System the batteries are considered "articles" and are exempted from SDS classification criteria from and the GHS labelling. The following document is supplied as a feedback to requests concerning battery use, regulatory compliance and safety of use.

1. PRODUCTS AND COMPANY IDENTIFICATION

Product name: Alkaline Batteries Panasonic Powerline		
IEC Designation	Size	Voltage
LR6	AA	1,5
LR03	AAA	1,5
LR14	C	1,5
LR20	D	1,5
6LR61	9V	9

2. HAZARDS IDENTIFICATION

Most Important Hazardous

Adverse Human Health

Effects:

When the leaked liquid adheres to the skin, it may cause the damage of the skin. When it is gotten in eye, it may cause the damage of eye such as losing sight.

Physical And Chemical Hazard:

There is the risk of explosion if batteries are disposed in fire, heated above 100 degree C. Stacking or jumbling batteries may cause external short circuits, heat generation and explosion.

Specific Hazards:

Not Applicable.

Class Name Of Hazardous Chemicals:

Not Applicable.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance name: Alkaline Battery

COMPONENT	CONCENTRATION (Wt %)	FORMULA	CAS NO.
<Positive Electrode> Manganese dioxide Graphite	20–45 1.0–4.5	MnO ₂ C	1313-13-9 7782-42-5
<Negative Electrode> Zinc	10–20	Zn	7440-66-6
<Electrolyte> Potassium Hydroxide Water	3–10 1–15	KOH H ₂ O	1310-58-3

4. FIRST AID MEASURES (IF LEAKED SOLUTION WILL CONTACT)

Skin Contact:

Wash the affected area under tepid running water using a mild soap. If appropriate procedures are not taken, this may cause sores on the skin. Get medical attention if irritation develops or persists.

Eye Contact:

Do not rub eyes. Wash immediately with large amount of clean water such as tap water 15 minutes or more then receive the ophthalmologist's treatment promptly. It may cause such as losing sight when the right procedure is not taken.

Ingestion:

Arrange for transport to the nearest medical facility for examination and treatment by a physician as soon as possible.

5. FIRE FIGHTING MEASURES

Extinguishing Media:

Dry chemical, carbon dioxide, great deal of water.

Specific Fire-Fighting
Methods:

Be sure on the windward to extinguish the fire, since vapor from burning batteries may make eyes, nose and throat irritate. Wear the respiratory protection equipment in some cases.

6. ACCIDENTAL RELEASE MEASURES

(IN CASE OF ELECTROLYTE LEAKAGE FROM THE BATTERY)

Health Considerations and Protective Equipment:

Wear proper protective equipment.

Environmental Precautions:

Prevent spills from entering sewers, watercourses.

Spill Clean-Up Procedures:

Collect material to minimize dust generation; use wet mop, damp sponge. Place collected material into a suitable container for disposal.

7. HANDLING AND STORAGE

Handling

Technical Measures:

No exposure limits exist for the battery

Precaution:

When packing the batteries, do not allow battery terminals to contact each other, or contact with electrically conductive materials. Be sure to pack batteries by providing partitions in packaging boxes, or in separate plastic bags to avoid they are mixed together. Use strong material for packaging boxes to avoid damage by vibration, impact, dropping and stacking during transportation. Do not recharge batteries. Do not deform batteries. Do not mix different types of batteries. Do not solder directly onto batteries.

Storage

Storage Condition:

Do not let water penetrate into packaging boxes during their storage and transportation. Do not store the batteries in the high temperature exceeding 35 degree C, under direct sunlight or near heat source. Also avoid high humidity. Be sure not to expose the batteries to condensation, water drop or not to store them under frozen condition

Safe Packaging Materials:

Carton boxes, Wooden boxes

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION (IN CASE OF ELECTROLYTE LEAKAGE FROM THE BATTERY)

Engineering Measures:	Make available in the work area and storage place emergency shower and eyes wash
Occupational Exposure Limits (OELs):	Not specified in ACGIH and OSHA
Protective Equipments	
Respiratory Protection:	For most condition no respiratory protection
Hand Protection:	Safety gloves.
Eye Protection:	Safety glasses with side shields must be worn when handling this product
Skin and Body Protection:	To prevent any contact, wear impervious clothing such as boots or whole body suits as appropriate

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Style Appearance:	Cylindrical shape
Colour:	Depend on the design
Odor:	Odourless~Characteristic odour
pH:	Not Applicable
Specific temperatures /Temperature range at which changes in physical state occur:	Not Applicable
Flash Point:	Not Applicable
Explosion Properties:	No Data
Specific Gravity (g/cm ³):	No Data
Solubility:	Not Applicable
Voltage:	1.5 Volts-9Volts

10. STABILITY AND REACTIVITY (PHYSICAL HAZARD)

<u>Stability:</u>	Stable under normal conditions
<u>When batteries are short-circuited:</u>	There is the possibility that stacking or jumbling batteries cause short circuits, heat generation, leakage or explosion
<u>When batteries are recharge:</u>	Risk of swelling leakage or explosion, contents may protrude
<u>When batteries are heated or disposed in fire:</u>	Risk of leakage or explosion
<u>When batteries are disassembled:</u>	Risk of short circuits. Electrolyte may cause skin itching
<u>Reactivity:</u>	Stable under normal conditions
<u>Hazardous Decomposition Products:</u>	No information

11. TOXICOLOGICAL INFORMATION

<u>Acute Toxicity:</u>	No information as a battery
<u>Local Effects:</u>	No information as a battery

In case of the worn out battery was disposed in land, the battery case may be corroded, and leak electrolyte. But, we have no ecological information.

Heavy metal quantity in a cell:

Hg	< 1 ppm	Reducing Vaporization Atomic Absorption Spectrometer
Cd	< 10 ppm	Inductively Coupled Plasma Atomic Emission Spectroscopy
Pb	< 10 ppm	Inductively Coupled Plasma Atomic Emission Spectroscopy

12. DISPOSAL CONSIDERATIONS

When the battery is worn out, dispose of it under the ordinance of each local government or the law issued by relating government

13. TRANSPORT INFORMATION

As alkaline battery is listed in Special Provision A123 of IATA Dangerous Goods Regulations when it is shipped by air, alkaline battery is not a regulation substance in the hazardous substance shipping regulations. In addition, this battery requires the following attentions

14. REGULATORY INFORMATIONS

- EU Battery Directive (2006/66/EC, version 2018) <http://data.europa.eu/eli/dir/2006/66/2018-07-04>
- Regulation (EC) No, 1907/2006 on the Registration, Evaluation, Authorization of Chemicals (REACH) (current version 1/5/2022) <http://data.europa.eu/eli/reg/2006/1907/2022-05-01>

15. OTHER INFORMATION

References:

- IATA Dangerous Goods Regulations 64th Edition (2023)
- IMO International Maritime Dangerous Goods 2020 Edition

This product is used in a hermetically sealed state. So, it is not an object of the SDS system. This document is provided to customers as reference information for the safe handling of the product. The information and recommendations set forth are made in good faith and are believed to be accurate at the date of preparation. Panasonic Corporation makes no warranty expressed or implied.

PRODUCT SAFETY DATA SHEET

1 Chemical product and company identification

Name of Product : Nickel-Metal Hydride Battery
 Name of Company : Panasonic Energy Co., Ltd.
 Address : 1-1 Matsushita-cho, Moriguchi-city, Osaka, 570-8511, Japan
 Emergency Contact : +81-80-9932-3190 (JST Working hours)
 +81-6-6991-1141 (Holiday)

2 Hazards identification

GHS Classification : No applicable
 Toxicity : When the leaked liquid adheres to the skin, it may cause the damage of the skin. When it is gotten in eye, it may cause the damage of eye such as losing sight.
 Hazard : There is the risk of explosion if batteries are disposed in fire, heated above 100 degree C. Stacking or jumbling batteries may cause external short circuits, heat generation and explosion.

3 Composition/information of ingredients

Material	CAS RN	Content (%)
Nickel Hydroxide	12054-48-7	15-30
Cobalt Hydroxide	21041-93-0	
Hydrogen absorbing alloy	7440-02-0(Ni) 7440-48-4(Co) 7439-96-5(Mn) 7429-90-5(Al)	20-40
Nickel	7440-02-0	
Iron	7439-89-6	
Potassium Hydroxide	1310-58-3	
Sodium Hydroxide	1310-73-2	0-15
Lithium Hydroxide	1310-65-2	

4 First aid measures (in case of electrolyte leakage from the battery)

Eye contact by electrolyte : Do not rub eyes. Wash immediately with large amount of clean water such as tap water 15 minutes or more then receive the ophthalmologist's treatment promptly. It may cause such as losing sight when the right procedure is not taken.
 Skin contact by electrolyte : Wash the affected area under tepid running water using a mild soap. If appropriate procedures are not taken, this may cause sores on the skin. Get medical attention if irritation develops or persists.

- Ingestion of electrolyte : Wash in the mouth immediately with large amount of clean water and make the sufferer drink a lot of water.
Arrange for transport to the nearest medical facility for examination and treatment by a physician as soon as possible.
- Inhalation of electrolyte fume : Remove to fresh air immediately. Take a medical treatment

5 Firefighting measures

Extinguishing Media

Dry sand, chemical powder fire extinguisher.

Specific Fire-Fighting Methods

Be sure on the windward to extinguish the fire, since vapor may make eyes, nose and throat irritate, Wear the respiratory protection equipment in some cases.

6 Accidental release measures (in case of electrolyte leakage from the battery)

Health Considerations and Protective Equipment

Wear proper protective equipment.

Environmental Precautions

Prevent spills form entering sewers, watercourses.

Spill Clean-Up Procedures

Collect material to minimize dust generation ; use wet mop, damp sponge. Place collected material into a suitable container for disposal.

7 Handling and storage

Handling

When packing the batteries, do not allow battery terminals to contact each other, or contact with other metals. Be sure to pack batteries by providing partitions in the packaging box, or in a separate plastic bag so that the single batteries are not mixed together.

Use strong material for packaging boxes so that they will not be damaged by vibration, impact, dropping and stacking during their transportation.

Do not short-circuit, deform, throw into fire or disassemble.

Use only dedicated charger or charge according to the conditions specified.

Do not mix different type of batteries.

Do not solder directly onto batteries.

Insert the battery correctly in electrical equipment.

Storage

Do not let water penetrate into packaging boxes during their storage and transportation.

Do not store the battery in places of the high temperature or under direct sunlight.

Please also avoid the places of high humidity. Be sure not to expose the battery to condensation, rain or frozen condition

8. Exposure controls and personal protection

Acceptable concentration : Not specified about Nickel-Metal Hydride Battery.

Facilities : Nothing in particular.

Protective Equipment (in case of electrolyte leakage from the battery)

Respiratory Protection : For most condition no respiratory protection.

Hand Protection : Safety gloves.

Eye Protection : Safety glasses must be worn when handling this product.

Skin and Body Protection : To prevent any contact, wear impervious clothing such as boots or whole body suits as appropriate.

9. Physical and chemical properties

- Appearance : Nickel-Metal hydride battery is stored in the plastic resin case or tube.
- Nominal Voltage : The voltage value depends on the number of built-in batteries used in battery pack.

10. Stability and reactivity

Since batteries utilize a chemical reaction they are actually considered a chemical product.

As such, battery performance will deteriorate over time even if stored for a long period of time without being used. In addition, the various usage conditions such as discharge, ambient temperature, etc. are not maintained within the specified ranges the life expectancy of the battery may be shortened or the device in which the battery is used may be damaged by electrolyte leakage.

11. Toxicological information

Battery is not harmful as its ingredients are in a hermetically sealed state.

12. Ecological information

In case of the worn out battery was disposed in land, the battery case may be corroded, and leak electrolyte. However, there is no environmental impact information.

Mercury (Hg), Cadmium (Cd) and Lead (Pb) are not used in cell.

13. Disposal considerations

When the battery is worn out, dispose of it under the ordinance of each local government.

14. Transport information**Handling**

- During the transportation of a large amount of batteries by ship, trailer or railway, do not leave them in the places of high temperatures and do not allow them to be exposed to dew condensation.
- Avoid transportation with the possibility of the collapse of cargo piles and the packing damage.

Air Transport

Non-Dangerous Goods. For air transportation, the words "Not Restricted, as per Special Provision A199" must be included in the description of the substance on the Air Waybill, when an Air Waybill is issued.

Marine Transport

UN number: UN3496 see SP963

1. Nickel-metal hydride cells or batteries packed with or contained in equipment and nickel-metal hydride button cells are Non-Dangerous Goods.
2. All other nickel-metal hydride cells or batteries shall be securely packed and protected from short circuit. They are Non-Dangerous Goods provided they are loaded in a cargo transport unit in a total quantity of less than 100kg gross mass.
3. When loaded in cargo transport unit in a total quantity of 100kg gross mass or more, they are Dangerous Goods (Class 9)

15. Regulatory information

EU Battery Directive (2006/66/EC, 2013/56/EU)

EU Battery Regulation (Regulation (EU) 2023/1542 of the European Parliament and of the Council)

EU REACH Regulation (Regulation (EC) No. 1907/2006 on the Registration, Evaluation, Authorization and Restriction of Chemicals)

Act on Preventing Environmental Pollution of Mercury (Japan)

16. Other information

This PSDS is provided to customers as reference information in order to handle batteries safely. It is necessary for the customer to take appropriate measures depending on the actual situation such as the individual handling, based on this information.

References

IATA Dangerous Goods Regulations Edition 66 (IATA DGR)

IMO International Maritime Dangerous Goods Code 2022 and 2024 Edition (IMDG Code)

Prepared by: Engineering Department
Energy Device Business Division
Panasonic Energy Co., Ltd.

Technical Notice

Lithium Battery Information Sheet (BIS)

1. Identification

- 1.1 Product Name: Tadiran High Energy Lithium Battery, or
Sonnenschein Lithium Inorganic Lithium Battery
- Voltage: 3.6 Volts
- Chemistry System: Lithium Thionyl chloride
- Anode: Lithium metal
- Cathode: Liquid, Thionyl chloride-based
- 1.2 Company: Tadiran Batteries GmbH
- Address: Industriestr. 22
63654 BÜDINGEN
Germany
Tel.: +49(0)6042-954-0
Fax: +49(0)6042-954-190
Web: <https://tadiranbatteries.de>
- 1.3 Emergency Telephone Number: +49(0)6042/954-599

Note: This information sheet refers to cells and batteries assembled from them.

2. Hazards Identification

Warning: Fire, explosion, and severe, burn hazard. Do not recharge, disassemble, heat above 100 °C (series SL-500: 150 °C), incinerate, or expose contents to water.

Protection from charging:

Whenever lithium batteries are not the single power source in a circuit the following measures recommended by Underwriters Laboratories are relevant. The cells should not be connected in series with an electrical power source that would increase the forward current through the cells.

The circuit for these cells shall include one of the following:

- A. Two suitable diodes or the equivalent in series with the cells to prevent any reverse (charging) current. The second diode is used to provide protection in the event that one should fail. Quality control, or equivalent procedures, shall be established by the device manufacturer to ensure the diode polarity is correct for each unit,

or

- B. A blocking diode or the equivalent to prevent any reverse (charging) current and a resistor to limit current in case of a diode failure. The resistor should be sized to limit the reverse charging) current to the maximums given in the data sheets.

3. Composition/Information on Ingredients

Substance	CAS No.	Content w/w %	1. GHS Code	2. Signal word	3. H-Phrases
Lithium Metal	7439-93-2	2 - 6	GHS02, GHS05	Danger	260, 314, EUH014
Thionyl Chloride	7719-09-7	18 - 47	GHS05, GHS06	Danger	302, 331, 314, 335, EUH014
Aluminum Chloride	7446-70-0	2 - 5	GHS05	Danger	314, 318, EUH014
Lithium Chloride	7447-41-8	1 - 2	GHS07	Warning	302, 315, 319
Carbon	7440-44-0	2 - 5	--		
Steel, Nickel plated	--	35 - 73	--		
Glass	--	0 - 2	--		
Organic polymers	Different	0 - 2	--		

GHS-Code: GHS02 Flame
 GHS05 Corrosion
 GHS06 Skull and crossbones
 GHS07 Exclamation mark

H-Phrases: 260 In contact with water releases flammable gases which may ignite spontaneously
 302 Harmful if swallowed
 314 Causes severe skin burns and eye damage
 315 Causes skin irritation
 318 Causes serious eye damage
 319 Causes serious eye irritation
 331 Toxic if inhaled
 335 May cause respiratory irritation
 EUH014 Reacts violently with water

Important Note: The material in this section may only represent a hazard if the integrity of the battery is compromised, or if the battery is physically or electrically abused.

4. First Aid Measures

A. Electrolyte Contact

- Skin Immediately flush with plenty of water for at least 15 minutes. If symptoms are present after flushing, get medical attention.
- Eyes Immediately flush with plenty of water for at least 15 minutes and get medical attention.
- Respiratory system: With large quantities and irritation of the respiratory tract medical surveillance for 48 hours.
Immediately inhale Cortisone Spray, e.g. "Sanasthmax".

B. Lithium Metal Contact

- Skin Remove particles of lithium from skin as rapidly as possible. Immediately flush with plenty of water for at least 15 minutes and get medical attention.
- Eyes Immediately flush with plenty of water for at least 15 minutes and get immediate medical attention.

5. Fire - fighting measures

A. Extinguishing Media

- During a fire with lithium batteries, copious amounts of cold water are an effective medium to prevent expansion of the fire. Do not use warm water or hot water.
- Lith-X (Class D extinguishing media) is effective on fires involving only a few lithium batteries.
- Do not use CO₂ or Halon type extinguishers.
- Dry chemical type extinguishers have limited extinguishing potential.

B. Fire Fighting Procedures

- Use a positive pressure self-contained breathing apparatus if batteries are involved in a fire.
- Full protective clothing is necessary.
- During water application caution is advised as burning pieces of lithium may be ejected from the fire.
- Where the cells or batteries are not at the center of the fire copious amounts of water may be supplied to the cells using a diffuser type nozzle so that the cells remain cool during the containment and extinguishing of the fire. A sprinkler system should be sufficient for this purpose the critical factor being that the lithium cells do not experience temperatures above the melting point of lithium.
- Small amounts of water should never be used such as the volumes contained within portable fire extinguishers. Standard dry powder extinguishers are ineffective. Halon extinguishers must not be used when fighting lithium fires as toxic gases may be generated during firefighting. It should be noted that a hazard of hydrogen formation exists whenever hot lithium metal comes into contact with water.

6. Accidental release measures

When the battery housing is damaged, small amounts of electrolyte may leak. Seal battery airtight in a plastic bag, adding some chalk (CaCO_3) or lime (CaO) powder or Vermiculite. Electrolyte traces may be wiped off dryly using household paper. Rinse with water afterwards.

7. Handling and Storage

- Do not allow terminals to short-circuit.
- Storage preferably in a cool (below 21 °C), dry area that is subject to little temperature change.
- Do not place near heating equipment, nor expose to direct sunlight for long periods. Elevated temperatures can result in reduced battery service life.

8. Exposure controls / personal protection

Lithium batteries are products, from which no substance is released under normal and reasonably foreseeable conditions of use.

9. Physical and chemical properties

1.1.1.1.1 Refer to information under item 3.

10. Stability and reactivity

May rupture violently when heated above 150 °C or when charged.

11. Toxicological information

Not applicable

Refer to information under item 3.

12. Ecological information

The batteries do not contain mercury, cadmium or other heavy metals.

13. Disposal Considerations

- Batteries do not contain hazardous materials according to EC directives 91/157/EEC, 93/86/EEC, and 2011/65/EU (RoHS directive)
- EC battery directive 2006/66/EC has been implemented by most EC member states.
- According to the EU Battery Directive, Batteries are marked with the symbol of the crossed-out wheeled bin (see figure). The symbol reminds the end user that batteries are not permitted to be disposed of with household waste but must be collected separately.
- Waste Batteries must effectively be protected against short circuit during storage and transport.
- A disposal service is offered upon request by Tadiran Batteries.
- For additional information, a Technical Notice is available upon request

14. Transport information

Class 9

UN 3090: LITHIUM METAL BATTERIES

If contained in equipment:

UN 3091: LITHIUM METAL BATTERIES CONTAINED IN EQUIPMENT, or
LITHIUM METAL BATTERIES PACKED WITH EQUIPMENT

Packing group: see packing instructions. Usually II

Special provisions and packing instructions:

ADR, RID:	SP188, SP230, SP310, SP360, SP376, SP377, SP387, SP390, SP636, SP670, P903, P908, P909, P910, P911, LP903, LP904, LP905, LP906
IATA:	A48, A88, A99, A154, A164, A181, A182, A183, A185, A201, A206, A213, A334, A802, P968, P969, P970
IMDG Code:	SP188, SP230, SP310, SP360, SP376, SP377, SP384, P903, P908, P909, P910, P911, LP903, LP904, LP905, LP906

For more information see

<https://tadiranbatteries.de> > Download repository > Transport & Safety

15. Regulatory information

Transport Regulations: see in section 14

EU Battery Directive: see in section 13

16. Other information

- Tadiran Lithium Batteries are registered by Underwriters Laboratories, Northbrook, U.S.A. under file MH 12827.
- Further information is given in
 - Tadiran Lithium Battery Product Data Catalogue
 - Tadiran Lithium Battery Technical Brochure.
- For lithium batteries in general, Safety standard IEC 60086-4 applies. It contains detailed recommendations for manufacturers of equipment and users.
- Battery packs

The design and assembly of battery packs require special skills, expertise and experience. Therefore, it is not recommended that the end user attempt to self-assemble battery packs. It is preferable that any battery using lithium cells be fabricated by TADIRAN to ensure proper battery design and construction. A full battery assembly service is available from TADIRAN who can be contacted for further information. If for any reason, this is not possible, TADIRAN can review the pack design in confidence to ensure that the design is safe (in assembly and use) and capable of meeting stated performance requirements.

The REACH regulation (1907/2006/EC) has replaced the EU directive for safety data sheets (91/155/EU). Both the now valid REACH regulation and the no longer valid directive require safety data sheets to be created and updated for materials and preparations. For products - including lithium batteries - no EU safety data sheets are required according to European chemicals regulations.

The information contained herein is furnished without warranty of any kind. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of the suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers.



UN38.3 Test Summary Report

Lithium cell or battery test summary in accordance with section 2.9.4 UN Model Regulations and sub-section 38.3 of Manual of Tests and Criteria, Part III, subsection 38.3.5

- [a] ☒ Cell ☐ Battery ☐ Produkt
☒ **Tested Type Part #:**
 SL-760
☒ **Same Type Part #:** as listed below

- [d] Unique report ID:
 15Q-605
 [e] Date of test report:
 2003-04-01

[b] **Manufacturer**

Fey Elektronik GmbH
 Storchweg 3
 21217 Seevetal
 Germany
 T. +49 40 703 8888-0

info@feyelektronik.de
www.feyelektronik.de

[c] **Test Laboratory**

Tadiran Batteries Ltd.
 P.O. Box 1
 Kiryat Ekron
 Israel 70500
 T. +972 8 9 44 560

sales@tadiran-batt.com
www.tadiran.com

- ☒ Same Type Part Numbers # (all): PA-A3607.R004 (cell assembled with cable and connector)

- [f] (i) ☐ Lithium-ion ☒ Lithium-metal ☒ Cell ☐ Battery
 [f] (ii) Mass: approx. 20 g
 [f] (iii) ☐ Watt-hour rating: Wh or ☒ Lithium content: 0.65 g

- [f] (v) Model number(s): SL-760 Customer Part No.: 8326186
 [f] (iv) Physical description: Primary (non-rechargeable) 3.7 V Lithium Thionyl Chloride (Li-SOCl₂) battery, assembled from 1 (one) "AA" sized SL-760 cell. The SL-760 cell may come with optional suffixes consisting of a "/" followed by one or more letters and a digit. These suffixes indicate different types of finishing to the cell (for example S-Standard, T-Tab, P-Pin, etc.).
 Our batteries/products are manufactured according to a Quality-Management-System.
 For further information visit our website.

[g] List of Tests Conducted	Result (Pass / Fail / N.A.)	Remark
38.3.4.1 Test T.1: Altitude simulation	Pass	
38.3.4.2 Test T.2: Thermal test	Pass	
38.3.4.3 Test T.3: Vibration	Pass	
38.3.4.4 Test T.4: Shock	Pass	
38.3.4.5 Test T.5: External short circuit	Pass	
38.3.4.6 Test T.6: Impact/Crush	Pass	
38.3.4.7 Test T.7: Overcharge	N.A.	n.a. for primary cells or batteries
38.3.4.8 Test T.8: Forced discharge	Pass	

- [h] Battery assembly: ☒ Not Applicable. ☐ UN38.3.3 (f) ☐ UN38.3.3 (g)
 [i] Test Reference: UN Manual of Tests and Criteria, Part III, sub-section 38.3, ST/SG/AC.10/11/Rev.3.1

Important! The stated signatory affirms, that this document is a true and correct summary of the original individual tests and test data. The original test data is confidential information available to competent State Authorities with valid identification and only upon their formal request. Disclosure of the original test data to any other entity upon its request will be considered by Fey Elektronik and, should Fey Elektronik consider this request is with merit, may be subject to the prior execution of a nondisclosure agreement.



- [j] Signatory Date: 2023-09-11
 Name: Michael Witte
 Title: General Manager

Signature:

Fey Elektronik GmbH, Storchweg 3, 21217 Seevetal, Germany
 Tel.: +49 40 703 8888-0
www.feyelektronik.de

Technical Notice

Lithium Battery Information Sheet (BIS)

1. Identification

- 1.1 Product Name: Tadiran High Energy Lithium Battery, or
Sonnenschein Lithium Inorganic Lithium Battery
- Voltage: 3.6 Volts
- Chemistry System: Lithium Thionyl chloride
- Anode: Lithium metal
- Cathode: Liquid, Thionyl chloride-based
- 1.2 Company: Tadiran Batteries GmbH
- Address: Industriestr. 22
63654 BÜDINGEN
Germany
Tel.: +49(0)6042-954-0
Fax: +49(0)6042-954-190
Web: <https://tadiranbatteries.de>
- 1.3 Emergency Telephone Number: +49(0)6042/954-599

Note: This information sheet refers to cells and batteries assembled from them.

2. Hazards Identification

Warning: Fire, explosion, and severe, burn hazard. Do not recharge, disassemble, heat above 100 °C (series SL-500: 150 °C), incinerate, or expose contents to water.

Protection from charging:

Whenever lithium batteries are not the single power source in a circuit the following measures recommended by Underwriters Laboratories are relevant. The cells should not be connected in series with an electrical power source that would increase the forward current through the cells.

The circuit for these cells shall include one of the following:

- A. Two suitable diodes or the equivalent in series with the cells to prevent any reverse (charging) current. The second diode is used to provide protection in the event that one should fail. Quality control, or equivalent procedures, shall be established by the device manufacturer to ensure the diode polarity is correct for each unit,

or

- B. A blocking diode or the equivalent to prevent any reverse (charging) current and a resistor to limit current in case of a diode failure. The resistor should be sized to limit the reverse charging) current to the maximums given in the data sheets.

3. Composition/Information on Ingredients

Substance	CAS No.	Content w/w %	1. GHS Code	2. Signal word	3. H-Phrases
Lithium Metal	7439-93-2	2 - 6	GHS02, GHS05	Danger	260, 314, EUH014
Thionyl Chloride	7719-09-7	18 - 47	GHS05, GHS06	Danger	302, 331, 314, 335, EUH014
Aluminum Chloride	7446-70-0	2 - 5	GHS05	Danger	314, 318, EUH014
Lithium Chloride	7447-41-8	1 - 2	GHS07	Warning	302, 315, 319
Carbon	7440-44-0	2 - 5	--		
Steel, Nickel plated	--	35 - 73	--		
Glass	--	0 - 2	--		
Organic polymers	Different	0 - 2	--		

GHS-Code: GHS02 Flame
 GHS05 Corrosion
 GHS06 Skull and crossbones
 GHS07 Exclamation mark

H-Phrases: 260 In contact with water releases flammable gases which may ignite spontaneously
 302 Harmful if swallowed
 314 Causes severe skin burns and eye damage
 315 Causes skin irritation
 318 Causes serious eye damage
 319 Causes serious eye irritation
 331 Toxic if inhaled
 335 May cause respiratory irritation
 EUH014 Reacts violently with water

Important Note: The material in this section may only represent a hazard if the integrity of the battery is compromised, or if the battery is physically or electrically abused.

4. First Aid Measures

A. Electrolyte Contact

- Skin Immediately flush with plenty of water for at least 15 minutes. If symptoms are present after flushing, get medical attention.
- Eyes Immediately flush with plenty of water for at least 15 minutes and get medical attention.
- Respiratory system: With large quantities and irritation of the respiratory tract medical surveillance for 48 hours.
Immediately inhale Cortisone Spray, e.g. "Sanasthmax".

B. Lithium Metal Contact

- Skin Remove particles of lithium from skin as rapidly as possible. Immediately flush with plenty of water for at least 15 minutes and get medical attention.
- Eyes Immediately flush with plenty of water for at least 15 minutes and get immediate medical attention.

5. Fire - fighting measures

A. Extinguishing Media

- During a fire with lithium batteries, copious amounts of cold water are an effective medium to prevent expansion of the fire. Do not use warm water or hot water.
- Lith-X (Class D extinguishing media) is effective on fires involving only a few lithium batteries.
- Do not use CO₂ or Halon type extinguishers.
- Dry chemical type extinguishers have limited extinguishing potential.

B. Fire Fighting Procedures

- Use a positive pressure self-contained breathing apparatus if batteries are involved in a fire.
- Full protective clothing is necessary.
- During water application caution is advised as burning pieces of lithium may be ejected from the fire.
- Where the cells or batteries are not at the center of the fire copious amounts of water may be supplied to the cells using a diffuser type nozzle so that the cells remain cool during the containment and extinguishing of the fire. A sprinkler system should be sufficient for this purpose the critical factor being that the lithium cells do not experience temperatures above the melting point of lithium.
- Small amounts of water should never be used such as the volumes contained within portable fire extinguishers. Standard dry powder extinguishers are ineffective. Halon extinguishers must not be used when fighting lithium fires as toxic gases may be generated during firefighting. It should be noted that a hazard of hydrogen formation exists whenever hot lithium metal comes into contact with water.

6. Accidental release measures

When the battery housing is damaged, small amounts of electrolyte may leak. Seal battery airtight in a plastic bag, adding some chalk (CaCO_3) or lime (CaO) powder or Vermiculite. Electrolyte traces may be wiped off dryly using household paper. Rinse with water afterwards.

7. Handling and Storage

- Do not allow terminals to short-circuit.
- Storage preferably in a cool (below 21 °C), dry area that is subject to little temperature change.
- Do not place near heating equipment, nor expose to direct sunlight for long periods. Elevated temperatures can result in reduced battery service life.

8. Exposure controls / personal protection

Lithium batteries are products, from which no substance is released under normal and reasonably foreseeable conditions of use.

9. Physical and chemical properties

1.1.1.1.1 Refer to information under item 3.

10. Stability and reactivity

May rupture violently when heated above 150 °C or when charged.

11. Toxicological information

Not applicable

Refer to information under item 3.

12. Ecological information

The batteries do not contain mercury, cadmium or other heavy metals.

13. Disposal Considerations

- Batteries do not contain hazardous materials according to EC directives 91/157/EEC, 93/86/EEC, and 2011/65/EU (RoHS directive)
- EC battery directive 2006/66/EC has been implemented by most EC member states.
- According to the EU Battery Directive, Batteries are marked with the symbol of the crossed-out wheeled bin (see figure). The symbol reminds the end user that batteries are not permitted to be disposed of with household waste but must be collected separately.
- Waste Batteries must effectively be protected against short circuit during storage and transport.
- A disposal service is offered upon request by Tadiran Batteries.
- For additional information, a Technical Notice is available upon request

14. Transport information

Class 9

UN 3090: LITHIUM METAL BATTERIES

If contained in equipment:

UN 3091: LITHIUM METAL BATTERIES CONTAINED IN EQUIPMENT, or
LITHIUM METAL BATTERIES PACKED WITH EQUIPMENT

Packing group: see packing instructions. Usually II

Special provisions and packing instructions:

ADR, RID:	SP188, SP230, SP310, SP360, SP376, SP377, SP387, SP390, SP636, SP670, P903, P908, P909, P910, P911, LP903, LP904, LP905, LP906
IATA:	A48, A88, A99, A154, A164, A181, A182, A183, A185, A201, A206, A213, A334, A802, P968, P969, P970
IMDG Code:	SP188, SP230, SP310, SP360, SP376, SP377, SP384, P903, P908, P909, P910, P911, LP903, LP904, LP905, LP906

For more information see

<https://tadiranbatteries.de> > Download repository > Transport & Safety

15. Regulatory information

Transport Regulations: see in section 14

EU Battery Directive: see in section 13

16. Other information

- Tadiran Lithium Batteries are registered by Underwriters Laboratories, Northbrook, U.S.A. under file MH 12827.
- Further information is given in
 - Tadiran Lithium Battery Product Data Catalogue
 - Tadiran Lithium Battery Technical Brochure.
- For lithium batteries in general, Safety standard IEC 60086-4 applies. It contains detailed recommendations for manufacturers of equipment and users.
- Battery packs

The design and assembly of battery packs require special skills, expertise and experience. Therefore, it is not recommended that the end user attempt to self-assemble battery packs. It is preferable that any battery using lithium cells be fabricated by TADIRAN to ensure proper battery design and construction. A full battery assembly service is available from TADIRAN who can be contacted for further information. If for any reason, this is not possible, TADIRAN can review the pack design in confidence to ensure that the design is safe (in assembly and use) and capable of meeting stated performance requirements.

The REACH regulation (1907/2006/EC) has replaced the EU directive for safety data sheets (91/155/EU). Both the now valid REACH regulation and the no longer valid directive require safety data sheets to be created and updated for materials and preparations. For products - including lithium batteries - no EU safety data sheets are required according to European chemicals regulations.

The information contained herein is furnished without warranty of any kind. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of the suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers.



UN38.3 Test Summary Report

Lithium cell or battery test summary in accordance with section 2.9.4 UN Model Regulations and sub-section 38.3 of Manual of Tests and Criteria, Part III, subsection 38.3.5

- [a] ☒ Cell ☐ Battery ☐ Produkt
☒ **Tested Type Part #:**
 SL-760
☒ **Same Type Part #:** as listed below

- [d] Unique report ID:
 15Q-605
 [e] Date of test report:
 2003-04-01

[b] **Manufacturer**

Fey Elektronik GmbH
 Storcheweg 3
 21217 Seevetal
 Germany
 T. +49 40 703 8888-0

info@feyelektronik.de
www.feyelektronik.de

[c] **Test Laboratory**

Tadiran Batteries Ltd.
 P.O. Box 1
 Kiryat Ekron
 Israel 70500
 T. +972 8 9 44 560

sales@tadiran-batt.com
www.tadiran.com

- ☒ Same Type Part Numbers # (all): PA-A3607.R004 (cell assembled with cable and connector)

- [f] (i) ☐ Lithium-ion ☒ Lithium-metal ☒ Cell ☐ Battery
 [f] (ii) Mass: approx. 20 g
 [f] (iii) ☐ Watt-hour rating: Wh or ☒ Lithium content: 0.65 g

- [f] (v) Model number(s): SL-760 Customer Part No.: 8326186
 [f] (iv) Physical description: Primary (non-rechargeable) 3.7 V Lithium Thionyl Chloride (Li-SOCl₂) battery, assembled from 1 (one) "AA" sized SL-760 cell. The SL-760 cell may come with optional suffixes consisting of a "/" followed by one or more letters and a digit. These suffixes indicate different types of finishing to the cell (for example S-Standard, T-Tab, P-Pin, etc.).
 Our batteries/products are manufactured according to a Quality-Management-System.
 For further information visit our website.

[g] List of Tests Conducted	Result (Pass / Fail / N.A.)	Remark
38.3.4.1 Test T.1: Altitude simulation	Pass	
38.3.4.2 Test T.2: Thermal test	Pass	
38.3.4.3 Test T.3: Vibration	Pass	
38.3.4.4 Test T.4: Shock	Pass	
38.3.4.5 Test T.5: External short circuit	Pass	
38.3.4.6 Test T.6: Impact/Crush	Pass	
38.3.4.7 Test T.7: Overcharge	N.A.	n.a. for primary cells or batteries
38.3.4.8 Test T.8: Forced discharge	Pass	

- [h] Battery assembly: ☒ Not Applicable. ☐ UN38.3.3 (f) ☐ UN38.3.3 (g)
 [i] Test Reference: UN Manual of Tests and Criteria, Part III, sub-section 38.3, ST/SG/AC.10/11/Rev.3.1

Important! The stated signatory affirms, that this document is a true and correct summary of the original individual tests and test data. The original test data is confidential information available to competent State Authorities with valid identification and only upon their formal request. Disclosure of the original test data to any other entity upon its request will be considered by Fey Elektronik and, should Fey Elektronik consider this request is with merit, may be subject to the prior execution of a nondisclosure agreement.



[j] Signatory Date: 2023-09-11
 Name: Michael Witte
 Title: General Manager

Signature:

Fey Elektronik GmbH, Storcheweg 3, 21217 Seevetal, Germany
 Tel.: +49 40 703 8888-0
www.feyelektronik.de

VISION BATTERY

Sealed Lead Acid Battery



MATERIAL SAFETY DATA SHEET

SECTION 1 - GENERAL INFORMATION

MANUFACTURER'S NAME: SHENZHEN CENTER POWER TECH CO., LTD	EMERGENCY TELEPHONE NO.: 86-755-84318088
ADDRESS: CENTER POWER INDUSTRIAL PARK TONGFU INDUSTRIAL DISTRICT DAPENG TOWN CHINA	OTHER INFORMATION CALLS: 86-755-84318031
PERSON RESPONSIBLE FOR PREPARATION Shouzhong Yi, Safety, Health & Environmental Affairs Manager	Revised Date: JAN 03, 2023

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

C.A.S.	PRINCIPAL HAZARDOUS COMPONENT(S) (chemical & common name(s))	Hazard Category	% Weight	ACGIH TLV - mg/m ³	OSHA PEL/TWA - mg/m ³
7439-92-1	Lead/Lead Oxide (Litharge)/Lead Sulfate	Acute-Chronic	60-70	0.05 mg/m ³	0.05 mg/m ³
7440-70-2	Calcium (lead calcium alloy)	Reactive	<0.15	Not Established	Not Established
7440-31-5	Tin	Chronic	<1	2	2
7440-38-2	Arsenic (inorganic)	Acute-Chronic	<1	0.01	0.01
7664-93-9	Sulfuric Acid (Battery Electrolyte)	Reactive-Oxidizer Acute -Chronic	10-15	1.0	1.0
Not applicable	Inert Ingredients	Not applicable	<6	Not Applicable	Not Applicable

Note: PEL's for individual states may differ from OSHA's PEL's. Check with local authorities for the applicable state PEL's.

OSHA – Occupational Safety and Health Administration; ACGIH – American Conference of Governmental Industrial Hygienists; NIOSH – National Institute for Occupational Safety and Health.

COMMON NAME: (Used on label) Sealed Lead-acid Battery

(Trade Name & Synonyms) lead acid: CP, CGA, CGTA, FM, UPS, CL, CG, CT, CTA, HFS, EV Series

Chemical Family: Toxic and Corrosive Material Mixture

Chemical

Formula: Lead/Acid

Name: Battery, Storage, Lead Acid, Valve Regulated

SECTION 3 -- HAZARD IDENTIFICATION

Signs and Symptoms of Exposure	1. Acute Hazards	Do not open battery. Avoid contact with internal components. Internal components include lead and absorbed electrolyte. Electrolyte - Electrolyte is corrosive and contact may cause skin irritation and chemical burns. Electrolyte causes severe irritation and burns of eyes, nose and throat. Ingestion can cause severe burns and vomiting. Lead - Direct skin or eye contact may cause local irritation. Inhalation or ingestion of lead dust or fumes may result in headache, nausea, vomiting, abdominal spasms, fatigue, sleep disturbances, weight loss, anemia and leg, arm and joint pain.			
	2. Subchronic and Chronic Health Effects	Electrolyte - Repeated contact with electrolyte causes irritation and skin burns. Repeated exposure to mist may cause erosion of teeth, chronic eye irritation and/or chronic inflammation of the nose, throat and lungs. Lead - Prolonged exposure may cause central nervous system damage, gastrointestinal disturbances, anemia, irritability, metallic taste, insomnia, wrist-drop, kidney dysfunction and reproductive system disturbances. Pregnant women should be protected from excessive exposure to prevent lead from crossing the placental barrier and causing infant neurological disorders. California Proposition 65 Warning: Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm, and during charging, strong inorganic acid mists containing sulfuric acid are evolved, a chemical Known to the State of California to cause cancer. Wash hands after handling.			
Medical Conditions Generally Aggravated by Exposure	Contact with internal components if battery is broken or opened, then persons with the following medical conditions must take precautions: pulmonary edema, bronchitis, emphysema, dental erosion and tracheobronchitis.				
Routes of Entry	Inhalation - YES Ingestion – YES		Eye Contact- YES		
Chemical(s) Listed as Carcinogen or potential Carcinogen		Proposition 65 - YES	National Toxicology Program - YES	I.A.R.C. Monographs - YES	O.S.H.A. - NO

SECTION 4 - FIRST AID MEASURES

Emergency and First Aid Procedures	Contact with internal components if battery is opened/broken.
1. Inhalation	Remove to fresh air and provide medical oxygen/CPR if needed. Obtain medical attention.
2. Eyes	Immediately flush with water for at least 15 minutes, hold eyelids open. Obtain medical attention.
3. Skin	Flush contacted area with large amounts of water for at least 15 minutes. Remove contaminated clothing and obtain medical attention if necessary.
4. Ingestion	Do not induce vomiting. If conscious drink large amounts of water/milk. Obtain medical attention. Never give anything by mouth to an unconscious person.

SECTION 5 - FIREFIGHTING MEASURES

Flash Point – Not Applicable	Flammable Limits in Air % by Volume: Not Applicable	Extinguishing Media – Class ABC, CO ₂ , Halon	Auto-Ignition Temperature 675°F (polypropylene)
Special Fire Fighting Procedures	Lead/acid batteries do not burn, or burn with difficulty. Do not use water on fires where molten metal is present. Extinguish fire with agent suitable for surrounding combustible materials. Cool exterior of battery if exposed to fire to prevent rupture. The acid mist and vapors generated by heat or fire are corrosive. Use NIOSH approved self-contained breathing apparatus (SCBA) and full protective equipment operated in positive-pressure mode.		
Unusual Fire and Explosion Hazards	Sulfuric acid vapors are generated upon overcharge and polypropylene case failure. Use adequate ventilation. Avoid open flames/sparks/other sources of ignition near battery.		

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Procedures for Cleanup. Avoid contact with any spilled material. Contain spill, isolate hazard area, and deny entry. Limit site access to emergency responders. Neutralize with sodium bicarbonate, soda ash, lime or other neutralizing agent. Place battery in suitable container for disposal. Dispose of contaminated material in accordance with applicable local, state and federal regulations. Sodium bicarbonate, soda ash, sand, lime or other neutralizing agent should be kept on-site for spill remediation.

Personal Precautions: Acid resistant aprons, boots and protective clothing. ANSI approved safety glasses with side shields/face shield recommended.

Environmental Precautions: Lead and its compounds and sulfuric acid can pose a severe threat to the environment. Contamination of water, soil and air should be prevented.

SECTION 7 - HANDLING AND STORAGE

Precautions to be Taken in Handling and Storage	Store away from reactive materials, open flames and sources of ignition as defined in Section 10 – Stability and Reactivity Data. Store batteries in cool, dry, well-ventilated areas. Batteries should be stored under roof for protection against adverse weather conditions. Avoid damage to containers.
Other Precautions	GOOD PERSONAL HYGIENE AND WORK PRACTICES ARE MANDATORY. Refrain from eating, drinking or smoking in work areas. Thoroughly wash hands, face, neck and arms, before eating, drinking and smoking. Work clothes and equipment should remain in designated lead contaminated areas, and never taken home or laundered with personal clothing. Wash soiled clothing, work clothes and equipment before reuse.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

Respiratory Protection (Specify Type)	None required under normal conditions. Acid/gas NIOSH approved respirator is required when the PEL is exceeded or employee experiences respiratory irritation.				
Ventilation	Store and handle in dry ventilated area.	Local Exhaust	When PEL is exceeded.	Mechanical (General)	Not Applicable
Protective Gloves	Wear rubber or plastic acid resistant gloves.		Eye Protection	ANSI approved safety glasses with side shields/face shield recommended	
Other Protective Clothing or Equipment	Safety shower and eyewash.				

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: Not Applicable	Vapor Pressure Not Applicable	Specific Gravity 1.250-1.320 pH <2	Melting Point: >320°F (polypropylene)
Percent Volatile By Volume Not Applicable	Vapor Density	Hydrogen: 0.069 (Air = 1) Electrolyte: 3.4 @ STP (Air = 1)	Evaporation Rate Not applicable
Solubility In water 100% soluble (electrolyte)	Reactivity in Water Electrolyte – Water Reactive (1)		
Appearance and Odor:	Battery: Co-polymer polypropylene, solid; may be contained within an outer casing of aluminum or steel. Case has metal terminals. Lead: Gray, metallic, solid; brown/grey oxide Electrolyte: Odorless, liquid absorbed in glass mat material. No apparent odor.		

SECTION 10 - STABILITY AND REACTIVITY

Stability: Stable	Conditions to Avoid: Avoid overcharging and smoking, or sparks near battery surface. High temperatures-cases decompose at >320°F.
Incompatibility (Materials to Avoid)	Sparks, open flames, keep battery away from strong oxidizers.
Hazardous Decomposition Products	Combustion can produce carbon dioxide and carbon monoxide.
Hazardous Polymerization	Hazardous Polymerization has not been reported.

SECTION 11 - TOXICOLOGICAL INFORMATION

GENERAL: The primary routes of exposure to lead are ingestion or inhalation of dust and fumes.

ACUTE:

INHALATION/INGESTION: Exposure to lead and its compounds may cause headache, nausea, vomiting, abdominal spasms, fatigue, sleep disturbances, weight loss, anemia, and pain in the legs, arms and joints. Kidney damage, as well as anemia, can occur from acute exposure.

CHRONIC:

INHALATION/INGESTION: Prolonged exposure to lead and its compounds may produce many of the symptoms of short-term exposure and may also cause central nervous system damage, gastrointestinal disturbances, anemia, and wrist drop. Symptoms of central nervous system damage include fatigue, headaches, tremors, hypertension, hallucination, convulsions and delirium. Kidney dysfunction and possible injury has also been associated with chronic lead poisoning. Chronic over-exposure to lead has been implicated as a causative agent for the impairment of male and female reproductive capacity, but there is at present, no substantiation of the implication. Pregnant women should be protected from excessive exposure. Lead can cross the placental barrier and unborn children may suffer neurological damage or developmental problems due to excessive lead exposure in pregnant women.

SECTION 12 - ECOLOGICAL INFORMATION

In most surface water and groundwater, lead forms compounds with anions such as hydroxides, carbonates, sulfates, and phosphates, and precipitates out of the water column. Lead may occur as sorbed ions or surface coatings on sediment mineral particles or may be carried in colloidal particles in surface water. Most lead is strongly retained in soil, resulting in little mobility. Lead may be immobilized by ion exchange with hydrous oxides or clays or by chelation with humic or fulvic acids in the soil. Lead (dissolved phase) is bioaccumulated by plants and animals, both aquatic and terrestrial.

SECTION 13 - DISPOSAL CONSIDERATIONS

Lead-acid batteries are completely recyclable. Return whole scrap batteries to distributor, manufacturer or lead smelter for recycling. For information on returning batteries to Vision Battery for recycling call 251-7779888. For neutralized spills, place residue in acid-resistant containers with sorbent material, sand or earth and dispose of in accordance with local, state and federal regulations for acid and lead compounds. Contact local and/or state environmental officials regarding disposal information.

SECTION 14 - TRANSPORT INFORMATION

All Vision AGM, Gel batteries CG, CP, FM, CL series and CTA series are valve regulated lead acid (VRLA) batteries.

Vision's VRLA batteries have passed vibration, pressure differential and free flowing acid tests under CFR 49 173.159(d) and meet IATA Special Provisions A48 and A67. The batteries are securely packaged, protected from short circuits and labeled "Non-Spillable." Vision's VRLA batteries are exempt from DOT Hazardous Material Regulations and IATA Dangerous Goods Regulations.

Note: The shipper has the option of shipping the batteries Hazmat regulated under UN2800. Additional labeling and paperwork would be required. See CFR 49 and IATA Dangerous Goods Regulations for more information.

U.S. DOT PROPER SHIPPING NAME: Batteries, wet, non-spillable

U.S. DOT HAZARD CLASS: 8

U.S. DOT ID NUMBER: UN2800

U.S. DOT PACKING GROUP: III

OR

Excepted from the requirements because batteries have passed the Vibration and Pressure Differential performance tests, and ruptured case test for Nonspillable designation.

U.S. DOT LABEL: CORROSIVE

IMO PROPER SHIPPING NAME: Batteries, wet, non-spillable

IMO U.N. CLASS: 8

IMO U.N. NUMBER: UN 2800

IMO LABEL: CORROSIVE

IMO VESSEL STOWAGE: A

Ems # - F-A, S-B

Lead-Acid Rechargeable Battery as per IMDG SP.238. And NON-DG Shipment

IATA PROPER SHIPPING NAME: Batteries, wet, non-spillable

IATA U.N. CLASS: 8

when

IATA U.N. NUMBER: UN 2800

IATA LABEL: CORROSIVE

ERG Code - 8L

OR

Excepted from the requirements because batteries have passed the vibration and pressure differential performance tests, and ruptured case test for nonspillable designation. And, packaged for transport, the terminals are protected from short circuit.

SECTION 15 - REGULATORY INFORMATION

U.S. HAZARDOUS UNDER HAZARD COMMUNICATION STANDARD:

LEAD - YES
ARSENIC - YES
SULFURIC ACID - YES

INGREDIENTS LISTED ON TSCA INVENTORY:

YES

CERCLA SECTION 304 HAZARDOUS SUBSTANCES:

LEAD - YES
ARSENIC - YES
SULFURIC ACID - YES

RQ: N/A*
RQ: 1 POUND
RQ: 1000 POUNDS

* RQ: REPORTING NOT REQUIRED WHEN DIAMETER OF THE PIECES OF SOLID METAL RELEASED IS EQUAL TO OR EXCEEDS 100 μ m (micrometers).

EPCRA SECTION 302 EXTREMELY HAZARDOUS SUBSTANCE:

SULFURIC ACID - YES

EPCRA SECTION 313 TOXIC RELEASE INVENTORY:

LEAD - CAS NO: 7439-92-1
ARSENIC - CAS NO: 7440-38-2
SULFURIC ACID - CAS NO: 7664-93-9

SECTION 16 - OTHER INFORMATION

THE INFORMATION ABOVE IS BELIEVED TO BE ACCURATE AND REPRESENTS THE BEST INFORMATION CURRENTLY AVAILABLE TO US. HOWEVER, VISION BATTERY MAKES NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, WITH RESPECT TO SUCH INFORMATION, AND WE ASSUME NO LIABILITY RESULTING FROM ITS USE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION FOR THEIR PARTICULAR PURPOSES. ALTHOUGH REASONABLE PRECAUTIONS HAVE BEEN TAKEN IN THE PREPARATION OF THE DATA CONTAINED HEREIN, IT IS OFFERED SOLELY FOR YOUR INFORMATION, CONSIDERATION AND INVESTIGATION. THIS MATERIAL SAFETY DATA SHEET PROVIDES GUIDELINES FOR THE SAFE HANDLING AND USE OF THIS PRODUCT; IT DOES NOT AND CANNOT ADVISE ON ALL POSSIBLE SITUATIONS, THEREFORE, YOUR SPECIFIC USE OF THIS PRODUCT SHOULD BE EVALUATED TO DETERMINE IF ADDITIONAL PRECAUTIONS ARE REQUIRED.

The data/information contained herein has been reviewed and approved for general release on the basis that this document contains no export-controlled information.



检测
CNAS L0748



NO. 1214040008

检 验 报 告

Test Report

样品名称： 阀控式密封铅酸蓄电池 CP1232S 12V 3.2AH

Name of Goods: Valve Regulated Lead Acid Battery

委托单位： 深圳市雄韬电源科技股份有限公司

Consignor: /



上海化工研究院检测中心

Shanghai Research Institute of Chemical Industry Testing Centre

上海化工研究院检测中心
检 验 报 告
SRICI Testing Centre Test Report

No. 1214040008

第 1 页 共 3 页

Page 1 of 3

样品名称 Name of Sample	中文 Chinese	阀控式密封铅酸蓄电池 CP1232S 12V 3.2AH		
	英文 English	Valve Regulated Lead Acid Battery		
样品编号 Sample No.	1214040008			
委托单位 Consignor	深圳市雄韬电源科技股份有限公司 /			
生产单位 Manufacturer	深圳市雄韬电源科技股份有限公司 /			
检验方法 Test Method	联合国 关于危险货物运输的建议书 规章范本 (17th) ST/SG/AC.10/1/Rev.17 3.3章的特殊规定238 UNITED NATIONS Recommendations on the TRANSPORT OF DANGEROUS GOODS Regulations (17th)ST/SG/AC.10/1/Rev.17 Chapter 3.3 SPECIAL PROVISIONS 238			
判定标准 Criterion	联合国 关于危险货物运输的建议书 规章范本 (17th) ST/SG/AC.10/1/Rev.17 3.3章的特殊规定238 UNITED NATIONS Recommendations on the TRANSPORT OF DANGEROUS GOODS Regulations (17th)ST/SG/AC.10/1/Rev.17 Chapter 3.3 SPECIAL PROVISIONS 238			
样品外观 Appearance	黑色 塑胶外壳 Black Plastics cement shell			
样品接受日期 Accepted Date	2014-04-30	检测起始日期 Test Date	2014-05-04 — 2014-05-07	
检测项目 Test Items	振动试验;压差试验;55℃漏液试验 Vibration test,Pressure differential test,Leakage test at 55℃			
检验结论 Conclusion	受检样品通过所有项目检测,检测结果合格。 The sample has passed all of the testing items 生效日期(Date): 2014-05-09			
备注 Remark	无。None.			
委托单位地址 Consignor Address	/		邮政编码 Post Code	518120

批准
Approver:
职务
Title:

张一明
审核
Checker:
副总工程师(Vice chief engineer)

编制
Compiler:

夏洁

上海化工研究院检测中心 检 验 报 告

SRICI Testing Centre Test Report

No. 1214040008

第 2 页 共 3 页

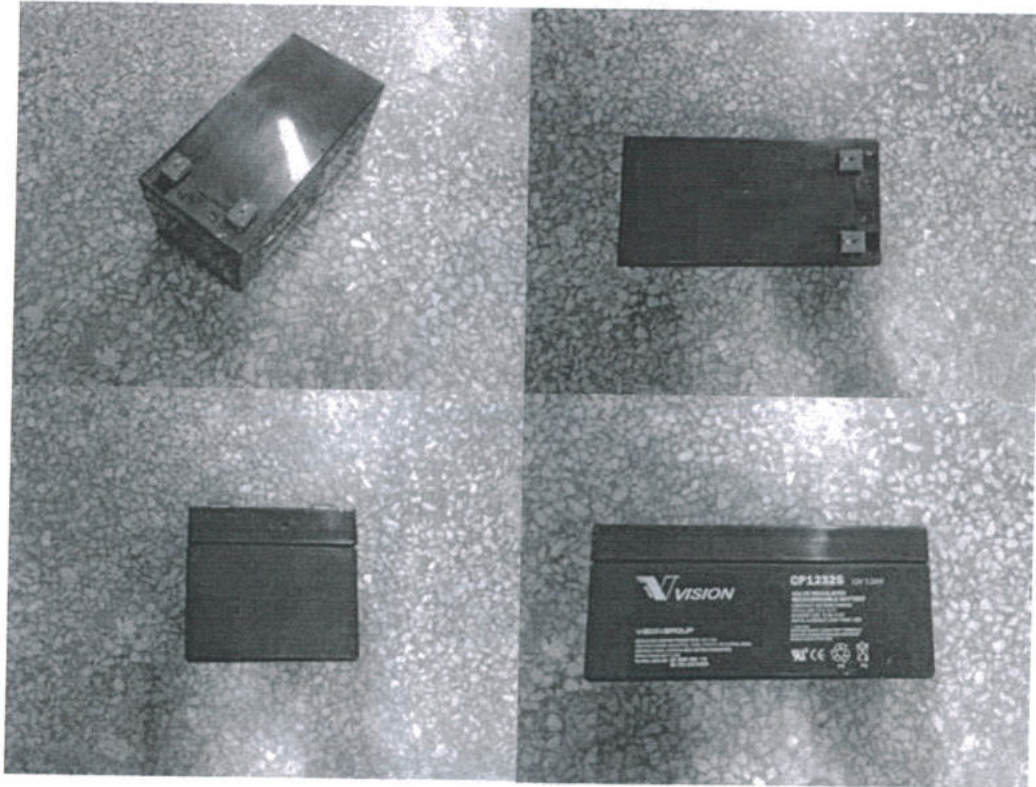
Page 2 of 3

序号 No	检验项目名称 Name of Test Items	标准要求或标准条款号 Standard requirement or The Clause Number of Standard	检测结果 Test Result	本项结论 Conclusion	备注 Remark
1	振动试验 Vibration test	规章范本 (17th) UN2800的 特殊规定238(a) UN Model Regulations Chapter 3.3 SPECIAL PROVISIONS 238(a)	无漏液。 None leakage of battery fluid.	合格。 Passed.	/
2	压差试验 Pressure differential test	规章范本 (17th) UN2800的 特殊规定238(a) UN Model Regulations Chapter 3.3 SPECIAL PROVISIONS 238(a)	无漏液。 None leakage of battery fluid.	合格。 Passed.	/
3	55℃漏液试验 Leakage test at 55℃	规章范本 (17th) UN2800的 特殊规定238(b) UN Model Regulations Chapter 3.3 SPECIAL PROVISIONS 238(b)	无漏液且无可见液体流 动。 None leakage of battery fluid and there is no free liquid to flow.	合格。 Passed.	/
4	以下空白 This space intentionally left blank				
5					
检验环境条件 Test Environment Condition		环境温度:18℃-20℃;环境湿度:/% Ambient temperature:18℃-20℃;Ambient humidity:/%			
分包检验情况 Subcontracted Test Condition		检验项目 Test Item	/		
		分包实验室 Subcontracted Laboratory	名称 Name	/	邮编 Post Code
			地址 Address	/	电话 Tel

上海化工研究院检测中心
检 验 报 告
SRICI Testing Centre Test Report

No. 1214040008

第 3 页 共 3 页
Page 3 of 3



上海化工研究院
检测中心

CP1232S**12V 3.2AH**



Product Information Sheet
Product: **DrägerSensors™** (classified as hazardous material according to UN 1814)

Date of issue: **12.11.2020**
Version: **11/2020**

Product Information Sheet

Document: 9030077
Version: 11/2020
Format: DrägerSensors™ (UN 1814)_miscellaneous_PIS_mt_077e.doc

Date of issue: 12.11.2020
Supersedes: 03.08.2015
Status: released

1. Identification of the substance/preparation and of the company/undertaking

1.1 Identification of the substance or preparation:

Trade name: **DrägerSensors™** (classified as hazardous material according to UN 1814)
Part no.: miscellaneous, see section 1.5

1.2 Use of the substance/preparation:

Detection of gases, measuring of gas concentrations.

1.3 Company/undertaking name:

Drägerwerk AG & Co. KGaA
Moislinger Allee 53 / 55
D-23542 Lübeck
Telephone number +49 451/882-0
Fax number +49 451/882-2080
Contact for information: Dräger Global EHS Management
Telephone number +49 451/882-6979
Fax number +49 451/882-76979

1.4 Emergency telephone: +49 451/882-2395

1.5 Relevant products:

Sach-Nr.	Tradename	Sach-Nr.	Tradename
6805915	O ₂ -Sensor capsule	6850645	O ₂ -Sensor (capsule)

2. Hazards identification

2.1 Classification:

Nature of hazard: n/a

2.2 Particular hazards for man and environment:

Improper handling, leaks, destruction of and/or damage to the electrochemical DrägerSensors™ may release caustic potassium hydroxide solution.

3. Composition/Information on ingredients

3.1 Chemical characterisation (constituent): n/a

3.2 Chemical characterisation (preparation):

The Dräger Oxygen Sensors normally contain very small amounts (< 2 ml) of a solution of potassium hydroxide as an electrolyte, partially fixed in a matrix of lead. The sensor housings are made from polyamide.

EINECS / ELINCS-No.	CAS-No.	Designation acc. to the EC Regulations	Content	Unit	GHS-Pictogram	H-Phrases
215-181-3	1310-58-3	Potassium hydroxide	n. a.	---	GHS05	H302, H314
231-100-4	7439-92-1	Lead	n. a.	---	GHS06	H360D, H361f, H332, H302, H331, H373

3.3 Other information:

The electrochemical DrägerSensors™ with potassium hydroxide solutions are products which are not subject to identification. The requirements of EC regulations 1907/2006 (Reach) and 1272/2008 (GHS/CLP) do not apply to such products. Hence the following information is purely voluntary.



Product Information Sheet
Product: **DrägerSensors™** (classified as hazardous material according to UN 1814)

Date of issue: **12.11.2020**
Version: **11/2020**

4. First-aid measures

- 4.1 After inhalation:**
n/a
- 4.2 After contact with skin:**
Wash with plenty of water.
- 4.3 After contact with the eyes:**
Flush open eye with plenty of water (for at least 15 minutes). Consult ophthalmologist immediately. Danger of corneal clouding.
- 4.4 After ingestion:**
Make victim drink plenty of water (if necessary several litres). Avoid vomiting (danger of perforation). Immediately consult doctor. Do not attempt to neutralize.
- 4.5 Information for the doctor:**
n/a

5. Fire-fighting measures

- 5.1 Suitable extinguishing media:**
Electrochemical DrägerSensors™ do not normally burn. Use extinguishing media appropriate to the environment, preferably water, foam or CO₂.
- 5.2 Extinguishing media which must not be used for safety reasons:**
n/a
- 5.3 Special exposure hazards arising from substances or preparation itself, combustion products, resulting gases:**
Thermal decomposition or combustion of the plastic components and ingredients of the electrochemical DrägerSensors™ may release small amounts of harmful or toxic gases (CO₂, CO etc.).
- 5.4 Special protective equipment for fire-fighters:**
For fire fighting respiratory protection with a compressed air breathing apparatus is recommended.

6. Accidental release measures

- 6.1 Personal precautions:**
Take care to avoid eye and skin contact with released/leaked electrolyte; use safety goggles. Use protective gloves resistant to acids (gloves made of nitrile rubber are recommended). Avoid skin contact with electrode material containing lead.
- 6.2 Environmental precautions:**
Do not discharge electrolyte into the sewer system.
- 6.3 Methods for cleaning up:**
Bind released/leaked electrolyte with suitable absorbent (silica gel) and dispose of correctly. Wash away residues with large amounts of water.
- 6.4 Additional information:**
n/a

7. Handling and storage

- 7.1 Handling:**
Precautions for safety handling:
- Closely follow the instructions in the relevant sensor data sheets/instructions for use when handling electrochemical DrägerSensors™. This also applies for all calibration activities and when handling calibration gases. Calibration activities should



Product Information Sheet
Product: **DrägerSensors™** (classified as hazardous material according to UN 1814)

Date of issue: **12.11.2020**
Version: **11/2020**

Information for protection against fire and explosion:

always be carried out in areas which are well-ventilated or provided with an exhausting device. Observe hazard information.
Electrochemical DrägerSensors™ are not combustible

7.2 Storage:

Requirements for storage and containers:

Electrochemical DrägerSensors™ must be stored under the conditions stated in the sensor data sheets (Oxygen Sensors: - 20°C - +40 °C) and in their original packaging. Observe the use-by date indicated on the packaging.

Information on storage together with other materials:

Observe VCI concept for storing chemicals

Further information on storage conditions:

n/a

Storage class:

10-13 (recommendation)

7.3 Certain application:

n/a

8. Exposure controls/Personal protection

8.1 Exposure limit values:

With normal handling of the DrägerSensors™ there should be no exposure to contents. However, if exposure does occur, keep exposure as low as possible and follow the national exposure limits for the relevant chemicals.

EC, Land	CAS-No.	Description of material	Type	Content	Unit
D	(1310-58-3)	(Potassium hydroxide) Sodium hydroxide	TLV/ TWA	C 2	mg/m ³
D	7439-92-1	Lead	MAC*	0,1	mg/m ³
			*German TLV		

8.2 Exposure controls:

Additional information on plant design:

Handling according to the Instructions for Use.

8.2.1 Occupational exposure controls:

General protection and hygiene measures:

With normal handling of the DrägerSensors™ there should be no exposure to contents. However, if exposure does occur, keep exposure as low as possible and follow the national exposure limits for the relevant chemicals.

Personal protection:

8.2.1.1 Respiratory protection:

Not necessary when handled according to the Instruction for Use.

8.2.1.2 Hand protection:

With normal handling of the DrägerSensors™ there should be no exposure to contents. In case of accidents use suitable protective gloves made from PE/ PP, Latex, butyl or nitrile rubber. Please observe the glove manufacturers instructions on permeability and rupture times as well as the specific workplace conditions. Prophylactic skin protection is recommended. Wash hands before breaks and after work.

8.2.1.3 Eye protection:

Not necessary when electrochemical DrägerSensors™ are handled correctly. Use safety goggles if electrolyte is released from the DrägerSensors™.

8.2.1.4 Skin protection:

Prophylactic skin protection is recommended. Wash thoroughly after handling. Skin care.

8.2.2 Environmental exposure controls:

n/a

9. Physical and chemical properties

9.1 General information:

Form: DrägerSensors™ containing colourless liquids.
Colour: colourless



Product Information Sheet
Product: **DrägerSensors™** (classified as hazardous material according to UN 1814)

Date of issue: **12.11.2020**
Version: **11/2020**

Odour: odourless

9.2 Important information about the protection of health, safety and the environment:

Method (67/548/EEC):

Solubility:	n/a
pH-value:	13-14 (electrolyte potassium hydroxide)
Boiling point:	n/a
Melting point:	n/a
Flame point:	n/a
Inflameability:	n/a
Explosion limits:	
	lower: n/a
	upper: n/a
Ignition temperature:	n/a
Vapour pressure:	n/a
Mass density:	n/a
Further information:	see relevant sensor data sheet and section 2/3

9.3 Other information

cf. relevant sensor data sheet and section 2/3

10. Stability and reactivity

General information:

n/a

10.1 Conditions to be avoided:

n/a

10.2 Materials to be avoided:

n/a

10.3 Hazardous decomposition products:

Possibility of a dangerous exothermic reaction:

Avoid contact with acids/water. Sensor contents/electrolyte may react with acids and water in an exothermic reaction.

Dangerous products of decomposition at contact with water:

Corrosive solutions of potassium hydroxides.

10.4 Further information:

n/a

11. Toxicological information

11.1 Toxicity tests:

Classification-relevant LD/LC₅₀-values: n/a

11.1.1 Specific symptoms in animal studies:

n/a

11.1.2 Irritant/corrosive effects:

n/a

11.1.3 Sensitization:

n/a

11.1.4 Subacute and chronic toxicity:

Experiments: n/a

Species: n/a

11.1.5 Carcinogenic, mutagenic and reproductive toxic effects:

n/a

11.1.6 Further information: n/a



Product Information Sheet
Product: **DrägerSensors™** (classified as hazardous material according to UN 1814)

Date of issue: **12.11.2020**
Version: **11/2020**

11.2 Effects on human body/Experiments made in practice:

n/a
after inhalation:
n/a
after ingestion:
n/a
after eye contact:
n/a
after skin contact:
n/a

11.3 Additional toxicological information:

n/a

Further information:

n/a

12. Ecological information

12.1 Ecotoxicity:

n/a

12.2 Mobility:

n/a

12.3 Persistence and degradability:

Biological decompositionability: n/a
Behaviour in purification plants: n/a

12.4 Bioaccumulative potential:

n/a

12.5 Other adverse effects:

n/a

12.6 Additional information:

Electrochemical DrägerSensors™ contain electrolytes which are classified in WGK 1 (German water hazard class)

13. Disposal considerations

13.1 Product (recommendations):

Utilized and exhausted electrochemical DrägerSensors™ must not be disposed of as household waste. They must be disposed of in accordance with local waste disposal regulations or by hiring an appropriate disposal company. Disposal is regulated by federal and state waste disposal laws and the corresponding regulations or other national regulations. Dräger Safety AG & Co. KGaA takes back expired and exhausted electrochemical DrägerSensors™ and ensures correct recycling or disposal after separating off usable materials (a charge is made to cover costs).

Waste category:	EWL (European waste list):	160215*
Waste designation:	Hazardous components removed from discarded equipment	
Obligation to prove correct disposal:	yes	

13.2 Not cleaned packaging material (recommendations):

The disposal of plastic containers and flexible packages is possible by EWL 150102, and fibre board boxes by EWL 150101.

14. Transport information

14.1 Road transport ADR/RID and GGVSE (cross-border/domestic):

UN-No.:	1814	Class:	8	Packing group:	II
Name:	POTASSIUM HYDROXIDE SOLUTION			Classification code:	C5



Product Information Sheet
Product: **DrägerSensors™** (classified as hazardous material according to UN 1814)

Date of issue: **12.11.2020**
Version: **11/2020**

Remarks: Dräger recommends that the option of transport in "Excepted Quantities" should be used.

14.2 Marine transport IMDG-Code/GGVSee:

UN-No.	1814	Correct technical name:	POTASSIUM HYDROXIDE SOLUTION
Class:	8	Sub risk:	n/a
EmS-No.:	F-A, S-B	Packing group:	II
Marine pollutant:	n/a	MFAG:	n/a
Remarks:	n/a		

14.3 Air transport ICAO-TI and IATA-DGR:

UN-No.	1814	Proper shipping Name:	POTASSIUM HYDROXIDE SOLUTION
Class	8	Sub risk:	n/a PG: II
Remarks:	Dräger recommends that the option of air shipment in "Excepted Quantities" should be used.		

14.4 Transport/further information:

n/a

15. Regulatory information

15.1 Labelling according to EC Regulation:

Hazardous symbols and indicators of danger for dangerous substances and preparations: No labelling necessary
Hazardous components to be indicated on label: contains: n/a

H-Phrases:

n/a

P-Phrases (recommendation):

P102 Keep out of reach of children.

P302+P352 IF ON SKIN: Wash with plenty of water.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308+P313 IF exposed or concerned: Get medical advice/attention.

15.2 National regulations:

Additional classification acc. to GefStoffV Annex II No. (only if differing from EC classification): n/a

Restrictions of occupation: n/a

Statutory order on hazardous incidents: n/a

Water pollution class: nwg

Information according 1999/13/EC about limitation of emissions of volatile organic compounds (VOC-guideline):

Further regulations, restrictions, and prohibition regulation:

(such as principles of industrial medicine and health and safety regulations)

Instruction Sheet BG-Chemie (Chemical Professional Association):

M 004 Corrosive and irritant substances (ZH 1/229).

Other state regulations may apply. Check individual state requirements.

16. Other information

Use of the substance / preparation:

See section 1.2; additional information in the Instruction for use.

Relevant H-Phrases:

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H331 Toxic if inhaled.

H332 Harmful if inhaled.

H360D May damage the unborn child.

H361f Suspected of damaging fertility.

H373 May cause damage to organs through prolonged or repeated exposure.

Comments:

n. a., n/a, /.: not applicable

MAC: Maximum allowable concentration

COD: Chemical oxygen demand



Product Information Sheet
Product: **DrägerSensors™** (classified as hazardous material according to UN 1814)

Date of issue: **12.11.2020**
Version: **11/2020**

BOD:	Biochemical oxygen demand
EWL:	European waste list
VOC:	Volatile organic compounds
VCI:	Verband der Chemischen Industrie e.V. (Association of the German chemical industry)
WGK:	German water hazard class

Further information:

The above information represents our current state of experience and describes the product only with respect to safety requirements. The manufacturer makes no representation and assumes no liability for any direct, incidental or consequential damages resulting from its use. It is the responsibility of the customer to test whether the product is suitable for the purpose intended by the customer.

Data sheet issued by:	Global EHS Management
Contact:	Dr. Michaela Schatz; michaela.schatz@draeger.com

Changes to preceding version:	In section 1 and 16.
-------------------------------	----------------------

Shipper
A. HARTRODT DEUTSCHLAND
(GMBH & CO) KG
RECHA-LUEBKE-DAMM 31
20097 HAMBURG
GERMANY

B/L No.
VER283666 - B



SACO SHIPPING LINE LTD

Consigned to order of
A. HARTRODT MEXICO S.A. DE C.V.
RFC: AHM0810275D8
AV. INSURGENTES SUR 800, FLOOR 9
C.P. 03100. CIUDAD DE MEXICO
MEXICO

SACO SHIPPING LINE LIMITED
44, Kroytser
PANORAMA Residence
Block A, Flat 01
3120 Limassol CYPRUS
FMC Organization No. 025875

6/04/HAM/169708

Copy

Notify Party and address
A. HARTRODT MEXICO S.A. DE C.V.
RFC: AHM0810275D8
AV. INSURGENTES SUR 800, FLOOR 9
C.P. 03100. CIUDAD DE MEXICO
MEXICO

	Place of receipt HAMBURG CFS
--	---------------------------------

Ocean vessel GSL TEGEA 616W	Port of loading HAMBURG
--------------------------------	----------------------------

Port of discharge VERACRUZ	Place of delivery VERACRUZ CFS	Freight payable FREIGHT PREPAID	Number of original Bills of Lading 0/ZERO
-------------------------------	-----------------------------------	------------------------------------	--

Marks and Nos.	Quantity of Goods	Description of Goods	Said to contain	Gross weight, kg.	Measurement, m ³
CARGO DETAILS AS PER ATTACHED STATEMENT					

FREIGHT PREPAID - SHIPPED ON BOARD - EXPRESS RELEASE

All particulars above declared by Merchant

For delivery of cargo please apply to:

INTERTEAM, S.A. DE C.V.
SERVICIOS INTERNACIONALS DE
COMERCIO, COLIMA 114 DESPACHO 201,
COLONIA ROMA, C.P. 06700 MEXICO D.F.
TEL:005255146915, FAX:005252087989
DANIELA.BORJA@INTERTEAM.COM.MX

RECEIVED for shipment the above mentioned Goods in apparent good order and condition as far as could be ascertained by exercising reasonable means of checking or as stated above.

The Carrier in accordance with the provisions contained on this side and on the reverse side of this document;

- a) undertakes to perform or to procure the performance of the entire transport from the place at which the Goods are taken in charge to the place designated for delivery in this document, and
- b) assumes liability as prescribed in this document for such transport.

One of the Bills of Lading to be surrendered duly endorsed in exchange for the Goods or delivery order.

IN WITNESS whereof three (3) original Bills of Lading have been signed, if not otherwise stated above, one of which being accomplished the other(s) to be void.

Place and date of issue
HAMBURG 25.04.2026

Signed on behalf of the Carrier SACO SHIPPING LINE LIMITED

SACO Shipping GmbH
Wollkämmerstraße 1
21107 Hamburg
Germany



As agent only for SACO SHIPPING LINE LIMITED LIMASSOL



Declared Value of the Goods (see clause 12)
US\$
Ad valorem freight paid:

Note:

The Merchant's attention is called to the fact that according to Clauses 11 to 13 of this Bill of Lading, the liability of the Carrier is, in most cases, limited in respect of loss of or damage to the goods and delay

Marks and Nos.	Quantity of Goods	Description of Goods	Said to contain	Gross weight, kg.	Measurement, m ³
3001388773	3 PALLETS	SAFETY EQUIPMENT HS CODE: 90200090, 90200010, 84213925, 90279000, 65061010, 90271010, 39173300, 63079098,		495,000	4,381
STOWED INTO CONTAINER NO.: HASU4696510				SEAL : B136940	
3001388774	2 PACKAGES	SAFETY EQUIPMENT HS CODE: 85065010, 90271010 S.P.		42,520	0,426
STOWED INTO CONTAINER NO.: MRSU8953788				SEAL : B136835	- B
HD 5002673032 HOSPITA1PE039106 12200537 MEXICO D.F. / MEXICO NR 1 - 2 STOWED INTO CONTAINER NO.: MRSU8953788	2 PALLETS	MEDICAL EQUIPMENT HS CODE: 90189060, 39174000, 39173300, 90330090		484,000	3,953
				SEAL : B136835	- B
TOTAL		7 PACKAGES		1021,520 KGS	8,760 CBM

Shipper

LOGWIN AIR + OCEAN DEUTSCHLAND GMBH
BANKSSTRASSE 28
HAMBURG HH 20097 GERMANY
+49403197900
+4940319790119
CONSOL.HAMBURG@LOGWIN-LOGISTICS.COM
EORI+DE7024460

B/L No.
VER283683 - B



SACO SHIPPING LINE LTD

SACO SHIPPING LINE LIMITED

44, Kroytser
PANORAMA Residence
Block A, Flat 01
3120 Limassol CYPRUS
FMC Organization No. 025875

6/04/HAM/169736

Copy

Consigned to order of

LOGWIN AIR+OCEAN MEXICO SA DE CV
RFC:LAS070725BM6
AV. COYOACAN 1622,TORRE 3, NIVEL 2,
OFICINA 201, COLONIA DEL VALLE, DEL.
BENITO JUAREZ,
CIUDAD DE MEXICO CMX 03100 MEXICO
RFC+LAS070725BM6

Notify Party and address

LOGWIN AIR + OCEAN MEXICO SA DE CV
AV. COYOACAN 1622,TORRE 3, NIVEL 2,
OFICINA 201, COLONIA DEL VALLE, DEL.
BENITO JUAREZ,
CIUDAD DE MEXICO CMX 03100 MEXICO
+525515602680

		Place of receipt HAMBURG, GERMANY CFS			
Ocean vessel GSL TEGEA 616W		Port of loading HAMBURG, GERMANY			
Port of discharge VERACRUZ, MEXICO		Place of delivery VERACRUZ, MEXICO CFS		Freight payable HAMBURG	Number of original Bills of Lading 0/ZERO
Marks and Nos.	Quantity of Goods	Description of Goods	Said to contain	Gross weight, kg.	Measurement, m ³
VER283683 2812653074	10 PACKAGES	TURN-UP BLADDER **HSCODE: 401699**		2814,000	9,946
STOWED INTO CONTAINER NO.: MRSU3838591				SEAL : B136937	
VER283713 KACO 73434, 73435 VERACRUZ SEAPORT	2 PACKAGES	AXIA MECHANICAL SEALS **HSCODE: 84842000** **HSCODE: 848420**		734,000	2,254
STOWED INTO CONTAINER NO.: MRSU8953788				SEAL : B136835	
TOTAL		12 PACKAGES		3548,000 KGS	12,200 CBM

- B

FREIGHT PREPAID - SHIPPED ON BOARD - EXPRESS RELEASE

All particulars above declared by Merchant

For delivery of cargo please apply to:

INTERTEAM, S.A. DE C.V.
SERVICIOS INTERNACIONALS DE
COMERCIO, COLIMA 114 DESPACHO 201,
COLONIA ROMA,C.P. 06700 MEXICO D.F.
TEL:005255146915,FAX:005252087989
DANIELA.BORJA@INTERTEAM.COM.MX

RECEIVED for shipment the above mentioned Goods in apparent good order and condition as far as could be ascertained by exercising reasonable means of checking or as stated above.

The Carrier in accordance with the provisions contained on this side and on the reverse side of this document;

- undertakes to perform or to procure the performance of the entire transport from the place at which the Goods are taken in charge to the place designated for delivery in this document, and
- assumes liability as prescribed in this document for such transport.

One of the Bills of Lading to be surrendered duly endorsed in exchange for the Goods or delivery order.

IN WITNESS whereof three (3) original Bills of Lading have been signed, if not otherwise stated above, one of which being accomplished the other(s) to be void.

Place and date of issue

HAMBURG 25.04.2026

Signed on behalf of the Carrier SACO SHIPPING LINE LIMITED

SACO Shipping GmbH
Wollkämmerstraße 1
21107 Hamburg
Germany



As agent only for SACO SHIPPING LINE LIMITED LIMASSOL



Declared Value of the Goods (see clause 12)
US\$
Ad valorem freight paid:

Note:

The Merchant's attention is called to the fact that according to Clauses 11 to 13 of this Bill of Lading, the liability of the Carrier is, in most cases, limited in respect of loss of or damage to the goods and delay



安全技术说明书(MSDS)

Material Safety Data Sheet

报告编号: BCTC2312339310B
Report No: _____
委托单位: 深圳市三力电源科技有限公司
Applicant: Shenzhen Power Kingdom Co., Ltd.
产品名称: 密封铅酸蓄电池
Product Name: SEALED LEAD-ACID BATTERY
产品型号: PS7-12(12V7AH)
Product Type: _____
签发时间: 2023-12-27(生效日期: 2024-01-01)
Issued Date: _____
编制: George How
Prepared By: _____
批准: Andre Yn
Approved By: _____



编号/No.: BCTC/RF-BAT-007

深圳市倍测检测有限公司
Shenzhen BCTC Testing Co., Ltd.



页码/Page: 1 of 10

版本/Edition: A.3





这份材料安全数据表是根据客户提供的信息编辑，其内容和格式按客户要求来修订。

* The MSDS is prepared based on the information provided by client. The contents and formats of this MSDS are revised as per client's request.

第一部分-化学品及企业标识

Section 1-Chemical Product and Company Identification

产品名称 Product Name	密封铅酸蓄电池 SEALED LEAD-ACID BATTERY
型号 Model	PS7-12(12V7AH)
商标 Trade Mark	
额定参数 Ratings	12V, 7Ah
重量 Weight	大约 2Kg About 2Kg
制造商 Manufacturer	河南豫光金铅集团铅盐有限责任公司 Henan Yuguang Gold&Lead Group Lead Salt Co.,Ltd.
制造商地址 Manufacturer Address	河南省济源市济水大街东段680号 East 680, Jishui Street, Jiyuan City, Henan
应急电话 Emergency Telephone	+86-391-6600301
传真 Fax	/

第二部分-成分信息

Section 2- Composition Information

化学成分 Chemical Composition	CAS号 CAS No.	含量(%) Weight (%)	商业机密 Trade Secret
铅和氧化铅 Lead and lead oxide	7439-92-1	61.97	*
电解溶液 Electrolytic solution	7664-93-9	23.88	*
玻璃纤维分离器 Glass fibre separator	65997-17-3	3	*
ABS塑料 ABS	9003-56-9	11.15	*

“*”准确的百分比(浓度)的构成已经作为商业机密。

“*” The exact percentage (concentration) of composition has been withheld as a trade secret.

第三部分-危险性概述

Section 3- Hazards Identification

紧急情况概述 Emergency overview:	不适用 N/A
GHS分类 Classification according to GHS	不属于GHS危险物品 Not a dangerous substance according to GHS
标签元素 Label elements:	
危险标签图 Hazard pictogram(s)	不适用 No available



提示语 Signal word	不适用 No available
危险声明 Hazard statement(s)	不适用 No available
预防声明 Precautionary statement(s):	
预防 Prevention	不适用 No available
反应 Response	不适用 No available
处理 Disposal	不适用 No available
环境危害 Environmental hazards:	无相关信息 No relevant information
重要症状 Important symptoms:	见第11部分更多信息 See section 11 for more information
第四部分-急救措施 Section 4- First Aid Measures	
眼睛接触 Eye contact	万一接触，立即用大量的清水冲洗至少15分钟，翻起上下眼睑，直到化学的残留物消失为止，迅速就医。 Flush eyes with plenty of water for least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
皮肤接触 Skin contact	万一接触，用大量的水冲洗至少15分钟，同时除去污染的衣物和鞋子，迅速就医。 Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.
吸入 Inhalation	立即从暴露处移至空气清新处，如果呼吸困难给予输氧，立即就医。 Remove from exposure and move to fresh air immediately. Use oxygen if available.
摄入 Ingestion	饮用两杯牛奶或水，如果当事人仍然清晰可以采取催吐的方法，并且立即就医。 Give at least 2 glasses of milk or water. Induce vomiting unless patient is unconscious. Call a physician.
第五部分-消防措施 Section 5- Fire Fighting Measures	
燃点 Flash Point	不适用 N/A
自燃温度 Auto-Ignition Temperature	不适用 N/A
灭火介质 Extinguishing Media	水，二氧化碳 H ₂ O, CO ₂
特殊灭火程序 Special Fire-Fighting Procedures	自给式呼吸器 Self-contained breathing apparatus
异常火灾或爆炸 Unusual Fire and Explosion Hazards	当电芯暴露于过热的环境中时，安全阀可能会打开 Cell may vent when subjected to excessive heat-exposing battery contents
燃烧产生的危险物品 Hazardous Combustion Products	二氧化碳、酸、氢气和氧气。 Carbon dioxide, acid, hydrogen and oxygen.
第六部分-泄露应急处理 Section 6- Accidental Release Measures	

**个人预防措施、保护设备和应急程序:**

如果电池被泄露, 让人员离开该区域直到烟雾消散。提供最大限度的通风, 清除有害气体。首选的反应就是离开这个地区并消散气体, 避免皮肤和眼睛接触或吸入气体。用吸收剂清除溢出的液体然后焚烧。如果电池泄漏发生时, 液体可以用砂、泥土或其他惰性物质来吸收, 污染区域应该保持通风。

Personal precautions, protective equipment and emergency procedures:

If the battery is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. The preferred response is to leave the area and allow the vapors to dissipate. Avoid skin and eyes contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerated. If leakage of the battery happens, liquid could be absorbed by using sand, earth or other inert substance and contaminated area should be ventilated meantime.

环境预防措施:

不允许产品到达排水系统或任何水源。
如果渗透进排水系统或任何水源, 通知相应的部门。
不允许进入下水道/表面或地下水。

Environment precautions:

Do not allow product to reach sewage system or any water source.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.

抑制和清理材料的方法:

如果电池外壳被拆除, 少量电解液可能会泄漏。收集所有材料放进一个塑料容器。根据当地的法律法规来处置, 避免可溶物质进入大地、下水道或水源。

Methods and material for containment and cleaning up:

If battery casing is dismantled, small amounts of electrolyte may leak. Collect all released material in a plastic lined container. Dispose off according to the local law and rules, Avoid leached substances to get into the earth, canalization or waters.

第七部分-操作处置和储存

Section 7- Handling and Storage

操作处置 Handling	禁止打开、毁坏或焚烧电池, 因为电池有可能在这些处理过程中发生爆炸、破裂或泄露等事故。 禁止将电池短路、过充、强制放电或扔入火中。 禁止挤压或刺穿电池, 或将电池浸入溶液中。 The battery should not be opened, destroyed or incinerate, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container. Do not short circuit terminals, or over charge the battery, forced over-discharge, throw to fire. Do not crush or puncture the battery, or immerse in liquids.
储存 Storage	禁止物理或电滥用, 禁止高温储存, 最好将电池储存在阴凉、干燥、通风及温度变化较小的环境中。 禁止将电池接触加热设备, 或将电池长时间直接暴露在阳光中。 Avoid mechanical or electrical abuse. Storage preferably in cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperatures should be avoided. Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.



其他要注意的防范措施 Other Precautions	拆解、挤压、直接放入火中或高温条件下，电池可能发生爆炸和燃烧。 禁止短接或将电池正负极错误的安装在设备中。 The battery may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity.
第八部分-接触控制和个体防护 Section 8- Exposure Controls/Personal Protection	
设计控制 Engineering Controls	设计局部排气通风或其它设计来控制粉尘、雾、烟雾和气体。 Use local exhaust ventilation or other engineering controls to control sources of dust, mist, fumes and vapor. Keep away from heat and open flame. Store in a cool, dry place.
个人防护装备 Personal Protective Equipment	呼吸防护：在正常情况下不需要。 皮肤和身体防护：在正常情况下不需要，如果处理一个裂开的或泄漏的电池需要穿戴适当的防护服和手套。 手保护：如果处理一个裂开的或泄漏的电池需要戴适当手套。 眼睛保护：在正常情况下不需要，如果处理一个裂开的或泄漏的电池需要戴上安全眼镜。 Respiratory Protection: Not necessary under normal conditions. Skin and body Protection: Not necessary under normal conditions, Wear suitable protective clothing and gloves if handling an open or leaking battery. Hand protection: Wear suitable gloves if handling an open or leaking battery. Eye Protection: Not necessary under normal conditions, Wear safety glasses if handling an open or leaking battery.
其它防护装备 Other Protective Equipment	在工作区域应该有一个立即可以使用的安全淋浴和喷水洗眼器。 Have a safety shower and eye wash fountain readily available in the immediate work area.
卫生措施 Hygiene Measures	在工作区域不得进食，饮水或吸烟。 Do not eat, drink, or smoke in work area. Maintain good housekeeping.
第九部分-物理和化学特性 Section 9- Physical and Chemical Properties	
形态 Form	固体 Solid
颜色 Color	黑色 Black
气味 Odour	不适用 No available
酸碱度 pH	不适用 No available
熔点/凝固点 Melting point/freezing point	不适用 No available
沸点、沸点范围: Boiling Point and Boiling range	不适用 No available
易燃度 Flash Point	不适用 No available
自然或爆炸的上、下极限 Upper/lower flammability or explosive limits	不适用 No available

有安公司



蒸汽压 Vapor Pressure	不适用 No available
蒸汽密度 Vapor Density	不适用 No available
相对密度 Relative density	不适用 No available
水溶性 Solubility in Water	不适用 No available
自燃温度 Auto-ignition temperature	不适用 No available
分解温度 Decomposition temperature	不适用 No available
蒸发速率 Evaporation rate	不适用 No available
易燃性(土壤、天然气) Flammability (soil, gas)	不适用 No available
粘性 Viscosity	不适用 No available
第十部分 稳定性和反应活性 Section 10- Stability and reactivity	
稳定性 Stability	产品在第七部分所述的条件下稳定 The product is stable under conditions described Section 7
应避免的条件 Conditions to Avoid	加热 70°C 以上或焚烧、变形、毁坏、粉碎、拆卸、过充电、短路，长时间暴露在潮湿的条件下。 Heat above 70°C or incinerate. Deform, Mutilate, Crush, Disassemble, Overcharge, Short circuit, Expose over a long period to humid conditions.
不兼容的材料 Incompatible Materials	氧化剂，酸，碱。 Oxidizing agents, acid, base.
危险分解物 Hazardous Decomposition Products	硫酸雾、金属氧化物、氢气和氧气。 Sulfuric acid mist, metal oxides, hydrogen and oxygen.
危险反应的可能性 Possibility of Hazardous Reaction	不适用 Not Available
第十一部分-毒理学资料 Section 11 – Toxicological Information	
刺激 Irritation	如果电芯的外壳受到机械、热或电的滥用到达一定程度，会发生刺激的风险。如果发生这种情况，可能会刺激皮肤、眼睛和呼吸道。 Risk of irritation occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, irritation to the skin, eyes and respiratory tract may occur.
致过敏 Sensitization	不适用 Not Available
影响神经系统 Neurological Effects	不适用 Not Available
致畸 Teratogenicity	不适用 Not Available



再生毒性 Reproductive Toxicity	不适用 Not Available
诱变(遗传效应) Mutagenicity (Genetic Effects)	不适用 Not Available
附带材料毒理性 Toxicologically Synergistic Materials	不适用 Not Available
第十二部分-生态学资料 Section 12- Ecological Information	
生态毒性 Ecological Toxicity	不适用 Not Available
在土壤中的流动性 Mobility in soil	不适用 Not Available
持久性和分解性 Persistence and Degradability	不适用 Not Available
生物聚积 Bioaccumulation potential	不适用 Not Available
其他不利影响 Other Adverse Effects	不适用 Not Available
第十三部分-废弃处置 Section 13- Disposal Considerations	
产品废弃处理建议 Product disposal recommendation	遵守当地、州和联邦法律和法规。 Observe local, state and federal laws and regulations.
包装处理建议 Packaging disposal recommendation	废弃处理必须根据当地法规 Disposal must be made according to official regulations
第十四部分-运输信息 Section 14 – Transport Information	
运输标签 Label for conveyance	不适用 N/A
UN编号 UN Number	--
运输风险类别 Transport hazard class(es)	--
包装等级 Packing group	不适用 N/A
海洋污染物 Marine pollutant	无污染 No
联合国运输专用名称 UN Proper shipping name	蓄电池，湿的，密封的蓄电池 BATTERIES, WET, NONSPILLABLE, electric storage





该货物应视为非限制货物，并且必须符合包装要求IATA第65版DGR手册的特殊规定A67的指令872或IMDG CODE的特殊规定238的指令（第41-22号修正案）或《关于国际公路危险货物运输的欧洲协定》（ADR 2019第I卷）在空运或海运的货运单上应包含“Not Restricted”及特殊规定条款号。

运输方式: 空运，海运，铁路，公路。

Transport information:

This goods shall be considered Not Restricted Goods and need to be complied with the requirements of Packing Instruction 872 of special provision A67 of 65th DGR Manual of IATA or special provision 238 of IMDG CODE (Amdt. 41-22) or European Agreement Concerning the International Carriage of Dangerous Goods by Road(ADR 2019 Volume I)

The words “Not Restricted” and the Special Provision number must be included in the description of the substance on the Air or Sea Waybill.

Transport Fashion: By air, by sea, by railway, by road.

第十五部分 法规信息

Section 15- Regulatory information

法律信息

Law information

- 《危险物品规则》
- 《Dangerous Goods Regulations》
- 《对危险货物运输的有关规定的建议》
- 《Recommendation on the Transport of Dangerous Goods Model Regulations》
- 《国际海运危险货物规则》
- 《International Maritime Dangerous Goods》
- 《危险品安全运输技术指令》
- 《Technical Instructions for the Safe Transport of Dangerous Goods》
- 《危险货物分类和品名编号》
- 《Classification and code of dangerous Goods》
- 《职业安全卫生法》
- 《Occupational Safety and Health Act》(OSHA)
- 《有毒物质控制法》
- 《Toxic Substance Control Act》(TSCA)
- 《消费产品安全法》
- 《Consumer Product Safety Act》(CPSA)
- 《联邦环境污染控制法》
- 《Federal Environmental Pollution Control Act》(FEPCA)
- 《石油污染控制法》
- 《The Oil Pollution Act》(OPA)
- 《超级基金修正案和再授权法案III(302/311/312/313)》
- 《Superfund Amendments and Reauthorization Act Title III (302/311/312/313)》(SARA)
- 《资源保护及恢复法案》
- 《Resource Conservation and Recovery Act》(RCRA)
- 《安全饮用水法》
- 《Safety Drinking Water Act》(CWA)
- 《加州65提案》
- 《California Proposition 65》
- 《美国联邦法规》
- 《Code of Federal Regulations》(CFR)

根据所有联邦、州和地方法律。

In according with all Federal, State and local laws.





第十六部分-其它信息

Section 16- Other Information

上面的信息被认为是准确代表了目前最好的信息提供给我们。然而,飞机没有对商品性能保证或任何其他保证,包括明示或暗示,对这类信息的使用我们不承担责任。用户应作出自己的调查,以确定是否适合其特定用途的信息。虽然在此处所包含的数据的准备已经采取了合理的预防措施,这是仅为你提供的信息、考虑和调查。这个化学品安全技术说明书为本产品提供了安全操作指南和使用指南,它并不能对所有可能发生的情况提供建议,因此,您特殊使用该产品应先进行评估,以确定是否需要额外的预防措施。

The information above is believed to be accurate and represents the best information currently available to us. However, concorde makes no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. Although reasonable precautions have been taken in the preparation of the data contained herein, it is offered solely for your information, consideration and investigation. This material safety data sheet provides guidelines for the safe handling and use of this product; it does not and cannot advise on all possible situations, therefore, your specific use of this product should be evaluated to determine if additional precautions are required.

备注(Remark):

主型号(Main model): PS7-12(12V7AH), 系列型号(series model): 4V4AH, 4V4.5AH, 4V10AH, 6V1.2AH, 6V1.3AH, 6V2.8AH, 6V3.2AH, 6V3.3AH, 6V4AH, 6V4.5AH, 6V5AH, 6V6AH, 6V7AH, 6V7.5AH, 6V8AH, 6V10AH, 6V12AH, 6V14AH, 12V0.8AH, 12V1.2AH, 12V1.3AH, 12V1.5AH, 12V1.8AH, 12V2AH, 12V2.2AH, 12V2.3AH, 12V2.4AH, 12V2.6AH, 12V2.7AH, 12V2.8AH, 12V2.9AH, 12V3AH, 12V3.2AH, 12V3.3AH, 12V1.4AH, 12V3.8AH, 12V4AH, 12V4.2AH, 12V4.5AH, 12V5AH, 12V5.5AH, 12V6AH, 12V6.5AH, 12V7.2AH, 12V7.5AH, 12V8AH, 12V8.5AH, 12V9AH, 12V10AH, 12V12AH, 12V13AH, 12V14AH, 12V15AH, 12V17AH, 12V18AH, 12V18.5AH, 12V20AH, 12V22AH, 12V24AH, 12V25AH, 12V26AH, 12V28AH, 6V65AH, 6V100AH, 6V150AH, 6V180AH, 6V200AH, 12V33AH, 12V35AH, 12V38AH, 12V40AH, 12V42AH, 12V45AH, 12V50AH, 12V55AH, 12V53AH, 12V65AH, 12V70AH, 12V75AH, 12V80AH, 12V90AH, 12V100AH, 12V110AH, 12V120AH, 12V134AH, 12V150AH, 12V160AH, 12V170AH, 12V180AH, 12V200AH, 12V230AH, 12V250AH, 12V260AH, 2V100AH, 2V150AH, 2V200AH, 2V300AH, 2V350AH, 2V400AH, 2V450AH, 2V500AH, 2V600AH, 2V800AH, 2V1000AH, 2V1200AH, 2V1500AH, 2V2000AH, 2V3000AH, 12V60AH, 12V105AH, 12V125AH, 12V175AH, 12V95AH, 24V3.5AH, 24V4AH, 24V5AH, 24V8AH, 24V14AH, 24V24AH, 24V18AH, 12V8.2AH

立测方

测专用

07350

声 明
STATEMENT

1. 本次检测所用的测量设备的量值均可以溯源到国家计量标准。

The equipment lists are traceable to the national reference standards.

2. 检测报告未经本实验室书面批准，不得部分复制。

The test report can not be partially copied unless prior written approval is issued from our lab.

3. 报告未加盖“检测专用章”无效。

The test report is invalid without stamp of laboratory.

4. 报告无检测、批准人员签字无效。

The test report is invalid without signature of person(s) testing and authorizing.

5. 本次检测的结果仅对所检测样品有效。

The test process and test result is only related to the Unit Under Test.

6. 样品的相关信息由委托单位提供，实验室不对其真实性负责。

Sample information is provided by the customer and the laboratory is not responsible for its authenticity.

7. 无CMA标志的报告，仅供科研、教学、企业产品研发及内部质量控制目的用。

Reports without CMA mark are only used for scientific research, teaching, enterprise product development and internal quality control purposes.

8. 本实验室的质量体系符合ISO/IEC17025标准的要求。

The quality system of our laboratory is in accordance with ISO/IEC17025.

9. 如对本报告有异议，可在收到报告后15 天内向本单位申诉，逾期不予受理。

If there is any objection to report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

地 址：广东省深圳市宝安区福海街道展城社区福园一路158号鹏洲工业园B号厂房1层2层
1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict,
Bao'an District, Shenzhen, Guangdong, China

电话/TEL：400-788-9558

邮政编码/P.C.: 518103

传真/FAX：0755-33229357

网址/website：http://www.chnbctc.com

电子信箱/E-Mail：bctc@bctc-lab.com.cn

※※※※※ 结束 ※※※※※

※※※※※ END ※※※※※





GS Yuasa Battery Europe Ltd.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) with
its amendment Regulation (EU) 2020/878 *

Document:	SDS 01
Issue No:	20
Issue Date:	30.11.2023
Page:	1 of 12

SECTION 1: IDENTIFICATION OF THE PRODUCT AND OF THE MANUFACTURER/SUPPLIER

1.1	Product Identifier:	Valve Regulated Lead-Acid (VRLA) Industrial Battery
	Classification:	Battery, wet, non-spillable, electric storage (Mixture) Substance classification: UN 2800
	Product Codes:	EN & ENL, NP, NPC, NPH, NPL, NPW, RE, REC, REW, SW, SWL, TEV, FXH, UXH, UXL, Yucel, YuVolt, YPC and YFT Series of Industrial VRLA Batteries
1.2	Relevant Identified Uses Of The Product And Uses Advised Against	<u>Relevant identified uses:</u> Standby: Telecoms; UPS; alarm and security systems; emergency lighting; utility switching Cyclic: Golf Trolleys, portable tools, portable lighting, wheelchairs, remote telemetry Energy storage: Photovoltaic energy systems (PVES); wind turbines <u>Uses advised against:</u> Automotive, commercial, and agricultural SLI applications <u>Reason why uses advised against:</u> High starting and ignition current demands beyond the design of internal and external current carrying components
1.3	Details Of The Supplier Of The Safety Data Sheet	Supplier: GS Yuasa Battery Europe Ltd, Address: Unit 22, Rassau Industrial Estate, Ebbw Vale, NP23 5SD United Kingdom Contact: Mike TAYLOR (Product Manager) Tel: (+44) 07733 302 242 e-mail: mike.taylor@yuasa-europe.com Language: English language only Available: Office hours only: 8am to 4pm (08:00 to 16:00)
	National Contacts:	<u>France:</u> GS Yuasa Battery France S.A. Contact: Christian RAYNAUD (Technical Manager) Tel: (+33) 0474-95-90-95 e-mail: christian.raynaud@gs-yuasa.fr Language: French & English <u>Germany:</u> GS Yuasa Battery Germany GmbH Contact: Thomas WALLRAFF (Manager Reserve & Renewable Energy & Technical) Tel: (+49) 02151-82095-27 e-mail: Thomas.Wallraff@gs-yuasa.de Language: German & English <u>Iberia:</u> GS Yuasa Battery Iberia S.A. Contact: Fernando GARCIA (Industrial Division Sales Manager) Tel: (+34) 091 748 98 19 e-mail: fernando.garcia@gs-yuasa.es Language: Spanish & English <u>Italy:</u> GS Yuasa Battery Italy Srl. Contact: Marco PETARLE (Technical) Tel: (+39) 02-3800-91-08 e-mail: marco.petarle@gs-yuasa.it Language: Italian & English <u>UK:</u> GS Yuasa Battery Sales UK Ltd. Contact: Matthew ELWICK (Technical Manager) Tel: (+44) 01793-833-560 e-mail: matthew.elwick@gs-yuasa.uk Language: English language only <u>Sweden:</u> GS Yuasa Battery Nordic Contact: Michael KRAFTH (Country Manager) Tel: (+46) 36 47110 e-mail: michael.krafth@gs-yuasa.se Language: English & Swedish
1.4	Emergency telephone number:	GS Yuasa Battery Manufacturing UK Ltd. Contact: Mike TAYLOR (Product Manager) Tel: (+44) 07733 302 242 Opening Hours: Only available during office hours, 8am to 4pm (08:00 to 16:00) Language: English language only Available: Office hours only: 8am to 4pm (08:00 to 16:00)



GS Yuasa Battery Europe Ltd.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) with
its amendment Regulation (EU) 2020/878 *

Document:	SDS 01
Issue No:	20
Issue Date:	30.11.2023
Page:	2 of 12

SECTION 2: HAZARDS IDENTIFICATION – In the event of the internal battery components being exposed

2.1	Classification of the substance or mixture		
According to Regulation (EC) No. 1272/2008 (CLP) Full text of H phrases – see section 16	H302	Acute toxicity 4	
	H314	Skin Corr. 1A	
	H315	Skin damage/irritation 1	
	H318	Eye damage/irritation 1	
	H360D	Reproductive toxicity 1A, 1B	
	H360Fd	Repr. 1A	
	H362	May harm breast fed children	
	H372	STOT RE1	
	H400	Aquatic Acute 1	
	H410	Aquatic Chronic 1	

Adverse physicochemical, human health and environmental effects
No additional information available

2.2 Label Elements

Labelling according to Regulation (EC) No. 1272/2008 (CLP)

Hazard Pictograms (CLP)



GHS05



GHS07



GHS08



GHS09

Signal Word (CLP) - DANGER

Hazard Statements (CLP)	H302	Harmful if swallowed
	H314	Causes severe skin burns and eye damage
	H315	Causes skin irritation
	H318	Causes serious eye damage
	H360D	May damage the unborn child
	H360Fd	May damage fertility. Suspected of damaging the unborn child
	H362	May cause harm to breast-fed children
	H372	Causes damage to organs through prolonged or repeated exposure
	H400	Very toxic to aquatic life
	H410	Very toxic to aquatic life with long lasting effects

Precautionary Statements (CLP)	P201	Obtain special instructions before use
	P202	Do not handle until all safety precautions have been read and understood
	P260	Do not breathe dust/fume/gas/mists/vapours/spray
	P264	Wash Thoroughly after handling
	P270	Do not eat, drink or smoke when using this product
	P273	Avoid release to the environment
	P280	Wear protective gloves/protective clothing/eye protection
	P303, 361, 353	IF ON SKIN (or hair): Take off Immediately all contaminated clothing. Rinse SKIN with water [or shower].
	P301, 330, 331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
	P304, 340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
	P305, 351, 338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.

If this document is printed, it is to be considered uncontrolled and for reference only.



GS Yuasa Battery Europe Ltd.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878 *

Document:	SDS 01
Issue No:	20
Issue Date:	30.11.2023
Page:	3 of 12

2.3 Other Hazards

	VRLA Battery	Mechanical	VRLA Batteries can be heavy. Correct manual handling techniques and/or mechanical lifting aides (e.g. Fork Lift Truck) must be used.
		Electrical	VRLA Batteries can contain large amounts of electrical energy which can give very high discharge currents and severe electrical shock if the terminals are short circuited.
		Chemical	- The VRLA Battery presents no chemical hazards during the normal operation provided the recommendations for handling, storage, transport and usage are observed. - VRLA Batteries emit hydrogen gas which is highly flammable and will form explosive mixtures in air from approx. 4% to 76%. This can be ignited by a spark at any voltage, naked flames or other sources of ignition. - If the battery is broken and the internal components exposed, hazards may exist which require careful attention.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances present in the product						
Components	Classification according to Regulation (EC) No. 1272/2008 (ELP) ¹	Substances	Approximate % (w/w) Battery	Chemical Symbol	CAS No.	
Plate Grid		Metallic Lead	40 to 50	Pb	7439-92-1	
		Calcium	< 0.1	Ca	7440-70-2	
		Tin	< 1	Sn	7440-31-5	
Active Materials	H360 H372 H400 H410	Lead Monoxide	< 0.1	PbO	1317-36-8	
		Lead Dioxide (Lead IV Oxide)	15 to 25	PbO ₂	1309-60-0	
		Barium compound	< 2	Ba	7440-39-3	
Battery Electrolyte	H314	Dilute Sulphuric Acid	10 to 20	H ₂ SO ₄	7664-93-9	
Case Material		Standard Grade, UL94:HB	5 to 10		9003-56-9	
		ABS (Acrylonitrile-Butadiene-Styrene Copolymer)				
		Flame Retardant (FR) Grade, UL94:V0	5 to 10		9003-56-9	
Separator Material		- ABS (Acrylonitrile-Butadiene-Styrene Copolymer) - Brominated aromatic compound. - Antimony trioxide	< 1.2% < 0.3%		79-94-7 1309-64-4	
		Absorbent Glass Matt (AGM) Separator (100% Borosilicate Glass Microfibre)	1 to 3		65997-17-3	
		Inorganic lead and battery electrolyte (Dilute Sulphuric Acid) are the main components of VRLA batteries. Other substances may be present but in small amounts dependant on battery type. Contact GS Yuasa Battery Manufacturing UK Ltd for further information.				

SECTION 4: FIRST AID MEASURES FOR ACUTE EXPOSURE

This information is of relevance only if the VRLA Battery has suffered damage, is broken and persons have direct contact with the internal components.

4.1 Description of first aid measures			
Components		Action	
Plate Grids and Active materials	Inhalation:	Remove the person from exposure to fresh air. Seek advice from a medical doctor	
	Ingestion	Wash out mouth with water and give plenty of water to drink. Do not induce vomiting. Seek advice from a medical doctor	
	Skin Contact:	Wash off with plenty of water and soap to prevent accidental ingestion or inhalation. Seek medical advice if pain or rash does not reduce	
	Eye Contact:	Immediately irrigate with eyewash solution or clean water for at least 10 minutes, holding the eyelids apart. Then take the person to hospital without further delay	
	Self-protection for the first aider	Eye protection (safety glasses or face shield), and heavy-duty gloves are required. In case of inhalation, a face mask or respirator may be required.	
Battery Electrolyte		SPEED IS ESSENTIAL - OBTAIN IMMEDIATE MEDICAL ATTENTION.	
	Inhalation:	Remove the person from exposure to fresh air. If the person continues to feel unwell seek advice from a medical doctor.	
	Ingestion	Wash out mouth with water and give plenty of water to drink. Do not induce vomiting.	



GS Yuasa Battery Europe Ltd.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) with
its amendment Regulation (EU) 2020/878 *

Document:	SDS 01
Issue No:	20
Issue Date:	30.11.2023
Page:	4 of 12

		Skin Contact:	If the person continues to feel unwell seek advice from a medical doctor. Drench with large quantities of water. Remove contaminated clothing and place in water to dilute the acid Continue to wash the affected area for at least 10 minutes. Seek advice from a medical doctor
		Eye Contact:	SPEED IS ESSENTIAL - OBTAIN IMMEDIATE MEDICAL ATTENTION Immediately irrigate with eyewash solution or clean water for at least 10 minutes, holding the eyelids apart. Then take the person to hospital without further delay
		Self-protection for the first aider	Eye protection (safety glasses or face shield), and heavy-duty gloves are required. In case of inhalation, a face mask or respirator may be required.
	Case Material	Inhalation:	Material can burn in a fire with toxic smoke and decomposition products. Upon inhalation of decomposition products, keep patient calm, remove to fresh air, and seek advice from a medical doctor. If a large quantity is inhaled take the person to hospital. Note to physician: Treat according to symptoms (decontamination, vital functions), no known specific antidote.
		Ingestion	Wash out mouth with water and give plenty of water to drink. Do not induce vomiting. If the person continues to feel unwell seek advice from a medical doctor.
		Skin Contact:	Areas affected by molten material should be quickly placed under cold running water and a sterile protective dressing applied. Seek advice from a medical doctor.
		Eye Contact:	May cause irritation or injury due to mechanical action and traces of Battery Electrolyte. Immediately irrigate with eyewash solution or clean water for at least 10 minutes, holding the eyelids apart. Then take the person to hospital without further delay
		Self-protection for the first aider	Eye protection (safety glasses or face shield), and disposable gloves are required. In case of inhalation, a face mask or respirator may be required.
	Separator Material	Inhalation:	Remove patient from exposure to fresh air. If irritation persists, seek advice from a medical doctor
		Ingestion	Wash out mouth with water and give plenty of water to drink. Do not induce vomiting. If the person continues to feel unwell seek advice from a medical doctor.
		Skin Contact:	After contact with skin, wash immediately with plenty of soap and water. If irritation persists, seek advice from a medical doctor
		Eye Contact:	May cause irritation or injury due to mechanical action and traces of Battery Electrolyte. Immediately irrigate with eyewash solution or clean water for at least 10 minutes, holding the eyelids apart. Then take the person to hospital without further delay
		Self-protection for the first aider	Eye protection (safety glasses or face shield), and disposable gloves are required. In case of inhalation, a face mask or respirator may be required.

SECTION 5: FIRE-FIGHTING AND EXPLOSION HAZARD MEASURES

5	VRLA Battery	General Information: Explosion Hazard	- VRLA Batteries emit hydrogen gas which is highly flammable and will form explosive mixtures in air from approx. 4% to 76%. This can be ignited by a spark at any voltage, naked flames or other sources of ignition. - Batteries in use will be part of an electrical circuit and must be isolated from the power source before attempting to put out a fire. Switch the power OFF before disconnecting the batteries from the power source. - Damaged batteries may expose negative plates, grey in colour, which may ignite if allowed to dry out. These plates may be wetted down with water after the battery has been removed from all electrical circuits.
5.1		Suitable Extinguisher types:	CO ₂ ; Dry Powder are recommended for electrical fires
		Unsuitable Extinguisher types	Water extinguishers must never be used to put out an electrical fire.
5.2		Hazardous combustion & decomposition products:	Carbon monoxide, Sulphur Dioxide, Sulphur Trioxide, Lead fume and vapour, toxic fumes from decomposition of battery case materials.
5.3		Advice for fire-fighters	Full face visor or safety goggles; Respiratory equipment or self-contained breathing apparatus (SCBA); Full acid resistant protective clothing must be worn in fire-fighting conditions.



GS Yuasa Battery Europe Ltd.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878 *

Document:	SDS 01
Issue No:	20
Issue Date:	30.11.2023
Page:	5 of 12

SECTION 6: ACCIDENTAL RELEASE MEASURES

This information is of relevance only if the VRLA Battery has suffered damage and is broken.

6	Components		
	VRLA Battery		VRLA batteries are designed to be safe to handle and not to leak battery electrolyte under normal conditions. In case of accidental damage heavy-duty gloves are required to pick-up the battery to protect against unseen electrolyte leakage
	Plate Grids and Active Materials	Personal Precautions:	Eye protection (safety glasses or face shield), and heavy-duty gloves are required. If the material is wet, a face mask or respirator is not required If the material is dry, a face mask or respirator is required
		Clean-up Methods:	Large, solid pieces may be picked up and bagged for recycling. Never use a brush to sweep up debris; it may create Lead-dust in the air. Wet clean the spill area to remove all traces of debris. Battery debris and cleaning materials must be collected and placed in an inert sealed container (e.g. self-seal plastic bag or bucket) for disposal, see Section 13.
		Environmental Precautions:	Do not allow material to enter a watercourse. Exposed Lead materials must be placed in an inert sealed container (e.g. self-seal plastic bag or bucket) for disposal, see Section 13.
	Battery Electrolyte:	Personal Precautions:	Ensure suitable, acid resistant personal protective clothing (including heavy-duty gloves, safety glasses and respiratory protection) is worn during removal and clean-up of spillages.
		Clean-up Methods:	
		Small spillages:	Neutralise and absorb the spillage using soda ash, sodium bicarbonate (available from supermarkets), sodium carbonate or calcium carbonate powder. Wet clean the spill area to remove all traces of debris. Battery debris and cleaning materials must be collected and placed in an inert sealed container (e.g. self-seal plastic bag or bucket) for disposal, see Section 13.
		Large spillages:	Large amounts of electrolyte spillage are unlikely with VRLA batteries since the electrolyte is fully absorbed in the active materials and separator. Bund the spillage area using dry sand, earth, sawdust or other inert material. Neutralise the electrolyte using soda ash, sodium bicarbonate (available from supermarkets), sodium carbonate or calcium carbonate powder. Wet clean the spill area to remove all traces of debris and electrolyte. Cleaning materials must be collected and placed in an inert sealed container (e.g. self-seal plastic bag or bucket) for disposal, see Section 13.
		Environmental Precautions:	Battery electrolyte must not be allowed to enter any drains or sewage system or water course.
	Case Material:	Clean-up Methods:	Assume battery case material is contaminated and proceed as for Plate Grids and Active Materials above.
	Separator Material:	Clean-up Methods:	Assume battery case material is contaminated and proceed as for Plate Grids and Active Materials above.

Note: If appropriate refer to 8 and 13

SECTION 7: HANDLING AND STORAGE

7.1	Component:		
	VRLA Battery	Precautions For Safe Handling:	Only trained operators should be allowed to handle VRLA batteries. <u>PPE:</u> No specialist protective clothing or equipment is required, except that for handling heavy weights. <u>Hygiene:</u> There are no specialist requirements beyond good, standard workplace practices, <u>Mechanical lifting aides:</u> (e.g. FLT and pallet trucks) will be required to move pallets of batteries. Weight approximately 1 tonne <u>Mechanical handling aides:</u> (e.g. trucks and lifters) will be required to handle individual batteries over 25 kg in weight. <u>General Safety Considerations:</u> Do not drop batteries: dents and deformation of the case may be an indication of internal damage to the battery. Cracks will allow electrolyte to escape. Do not place VRLA Batteries lid-to-lid so that terminals will short-circuit.
7.2		Conditions For Safe Storage, Including Any Incompatibilities:	Store VRLA Batteries in a cool, well-ventilated area with a solid, impervious surface, and adequate containment in the event of accidental acid spillage. Store under a roof and protect against direct sunlight and adverse weather conditions including rain, snow and other sources of water. Storage of large quantities of VRLA batteries may require approval from local environmental protection agency and/or local water authorities.

If this document is printed, it is to be considered uncontrolled and for reference only.



GS Yuasa Battery Europe Ltd.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878 *

Document:	SDS 01
Issue No:	20
Issue Date:	30.11.2023
Page:	6 of 12

7.3			Pallets of VRLA Batteries are heavy. Store at ground level or in lower levels of storage systems (e.g. racking). Take special care in dry conditions to avoid the risk of electrostatic discharges. Protect against physical damage and exposure to organic solvents and other incompatible materials. Do not store VRLA batteries close to sources of heat, naked flames and sparks. Store batteries in their original packaging wherever possible. When batteries are removed from their original packaging (e.g. for transportation of small quantities), ensure new packaging protects the batteries from damage and the risk of short-circuit of the terminals.
		End-of-Life (EC WEEE Regulations)	Ensure batteries are removed from equipment at the end of life and are collected for recycling by an approved contractor.
		Specific End Uses: Installation:	- Refer to EN IEC 62485-1, Safety requirements for secondary batteries and battery installations. General safety information - Refer to EN IEC 62485-2, Safety requirements for secondary batteries and battery installations. Stationary batteries

SECTION 8: EXPOSURE CONTROL / PERSONAL PROTECTION

	Components		
8.1	VRLA Battery	Control Parameters:	There are no special control parameters for the handling, storage, installation of VRLA Batteries. VRLA Batteries emit hydrogen gas which is highly flammable and will form explosive mixtures in air from approximately 4% to 76%. Never install VRLA Batteries in a gas-tight enclosure during storage, transport or usage.
8.2		Exposure Control:	There are no special exposure controls for the handling, storage, installation or use of VRLA Batteries.
8.3		Personal Protection:	When there is no evidence of damage or visible traces of liquid (electrolyte) or solid deposits on the batteries they may be handled safely without extra personal protective equipment. Ensure electrical insulation equipment is used when installing batteries. (e.g. insulated mats and covers; insulated tools) Remove ALL metallic objects from the person when working with VRLA Batteries: e.g. Jewellery (rings, watches, bracelets, necklaces), pens, torches, etc. Where there are signs of damage or liquid (electrolyte) or solid deposits, rubber gloves and acid resistant clothing must be worn when handling the batteries and affected packaging to protect against the effects of any electrolyte that may be present. If it is suspected that free electrolyte is present, then safety glasses must be worn, and if large amounts are present, chemical goggles or face shield should be used.
		UL CAUTIONARY STATEMENT:	"Warning: Risk of fire, explosion, or burns. Do not disassemble; heat above 50°C; or incinerate".

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

	Components				
9.1	VRLA Battery	• The main components are listed in SECTION 2 above. • The undamaged product is a manufactured article in an inert plastic (ABS) case, which will burn if subjected to high temperatures or sources of ignition. Some battery types are made with Flame Retardant ABS cases, see technical specification. These batteries carry the suffix 'FR' after the battery type; e.g. NP24-12IFR			
The information below refers to the physical and chemical properties of the main VRLA Battery components and substances. This information is published for reference only.					
	Plate Grids and Active materials:	Appearance		Safety-related data	
		Form	Solid	Solidification point	327 °C
		Colour	Grey or brown	Boiling point	1740 °C
		Odour	Odourless	Solubility in water	Very low (0.15mg/l)
				Solubility in acid or alkaline solutions	Yes, dependant on the strength of solution.
				Density (at 20°C)	11.35 g/cm³
				Vapour pressure (at 20°C)	Undetectable
	Battery Electrolyte:				
		Form	Liquid	Solidification point	-35 to -60 °C
		Colour	Colourless	Boiling point	Approx. 108 to 114 °C
		Odour	Odourless	Solubility in water	Complete
				Density (at 20°C)	Variable up to 1.350 g/cm³
				Vapour pressure (at 20°C)	10-20 mmHg

If this document is printed, it is to be considered uncontrolled and for reference only.



GS Yuasa Battery Europe Ltd.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878 *

Document:	SDS 01
Issue No:	20
Issue Date:	30.11.2023
Page:	7 of 12

	Case Material:	Appearance <i>Form</i> <i>Colour</i> <i>Odour</i>	Solid Grey or black Slight Odour	Safety-related data <i>Softening point</i> <i>Flash Point</i> <i>Solubility in water</i> <i>Solubility in other solvents</i> <i>Density (at 20°C)</i> <i>Vapour pressure (at 20°C)</i>	> 100 °C (DIN 53460) >330 °C Insoluble Soluble in polar solvents, aromatic solvents, chlorinated hydrocarbons. 1.07-1.4 g/cm ³ (DIN 53479) Undetectable
	Separator Material:	<i>Form</i> <i>Colour</i> <i>Odour</i>	Fibrous material White Odourless	<i>Solidification point</i> <i>Boiling point</i> <i>Solubility in water</i> <i>Density (at 20°C)</i> <i>Vapour pressure (at 20°C)</i>	820°C >2500°C Insoluble 2.23g/cm ³ Undetectable

SECTION 10: STABILITY AND REACTIVITY

	Components		
10.1	VRLA Battery	Stability:	Within the operational temperature range -20 to +50 °C the undamaged product is stable.
10.4	Plate Grids and Active materials:	Materials & Conditions to Avoid:	Powdered Lead reacts violently with fused ammonium nitrate and sodium acetylide. Reacts violently when in contact with chlorine trifluoride.
10.3	Battery Electrolyte:	Possibility of Hazardous Reactions	- Dilution of the higher concentrated grades with water may liberate excessive heat. - Highly reactive with metals and organic materials. - On contact with metals, may generate hydrogen which forms explosive mixtures with air. - Destroys organic materials such as cardboard, wood, textiles, etc. - Vigorous reaction with sodium hydroxide and alkalis.
10.6		Hazardous Decomposition Product(s):	Sulphur oxides
10.1	Case Material:	Materials & Conditions to Avoid:	- To avoid thermal decomposition, do not overheat. - Starts to decompose at temperatures >275°C. - Powerful oxidising agents.
10.6		Hazardous decomposition products:	Monomers, other degradation products, traces of hydrogen cyanide.
10.1	Separator Material:	Stability:	Stable material.
10.4		Materials & Conditions to Avoid:	Incompatible with Hydrofluoric acid and concentrated Sodium Hydroxide.
10.6		Hazardous decomposition products:	No hazardous polymerisation expected.

SECTION 11: TOXICOLOGICAL INFORMATION

This information is of relevance only if the VRLA Battery has suffered damage and is broken.

	Components		
11	VRLA Battery		- This information does not apply to the undamaged VRLA Battery. It is of relevance if the battery is broken and the components are released to the environment. - Exposure limits may vary according to national law and regulations.
11.1	Plate Grids: Metallic Lead, Lead alloys.	Acute Toxicity 	- Toxic by ingestion or inhalation - Chronic poison - Lead is a poison that affects virtually every system in the body - Symptoms include fatigue, headaches, constipation, aching bones and muscles, gastrointestinal tract disturbances and reduced appetite - Blood Lead levels of 80 µg/dl and above have been associated with both acute and chronic effects of Lead poisoning
	Active materials: Lead dioxide.	Acute Toxicity 	- Toxic by ingestion or inhalation - Chronic poison - Chronic exposure to Lead compounds may lead to a build-up of Lead in the body, giving rise to a variety of health problems, including anaemia, kidney and liver damage, impaired eyesight, memory loss and CNS² damage

² CNS = Central Nervous System



GS Yuasa Battery Europe Ltd.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) with
its amendment Regulation (EU) 2020/878 *

Document:	SDS 01
Issue No:	20
Issue Date:	30.11.2023
Page:	8 of 12

	Battery Electrolyte:	Corrosive 	Corrosive, the more concentrated solutions can cause serious burns to the mouth, eyes and skin Harmful by ingestion and through skin contact
		Inhalation: 	Mist is a severe irritant to the respiratory tract. Fluid build-up on the lung (pulmonary oedema) may occur up to 48 hours after exposure and could prove fatal
		Ingestion: 	Will immediately cause severe corrosion of and damage to the gastrointestinal tract
11.1	Battery Electrolyte:	Skin Contact: 	Causes severe chemical burns
		Eye Contact: 	Risk of serious damage to eyes. Causes severe burns. May cause prolonged or permanent damage or even total loss of sight. Mist will cause irritation
	Case Material:		According to information available the product is not harmful to health provided it is correctly handled and processed according to the given recommendations.
	Separator Material:		Based on animal implantation and epidemiologic studies glass microfibers are thought to have some limited carcinogenic potential and as such are designated as Group 2B materials (IARC, US). The material should be treated as a category 3 carcinogen (Europe). Limited evidence of carcinogenic effect.

SECTION 12: ECOLOGICAL INFORMATION

This information is of relevance only if the VRLA Battery has suffered damage and is broken.

	Components		
12.1	VRLA Battery		This information does not apply to the undamaged VRLA Battery. It is of relevance if the battery is broken and the components are released to the environment.
12.2	Plate Grids and Active materials:	Metallic Lead, Lead alloys and Lead dioxide. 	Chemical and physical treatment is required for the elimination of Lead from water. Waste water containing Lead must not be disposed of in an untreated condition.
		Ecotoxicity:  <u>H Phrase H400 &410</u>	Lead metal in massive form is not classified as hazardous to the aquatic environment, due to its low solubility and rapid removal from the water column. Inorganic lead compounds are considered to be acutely toxic in the environment and also to present a long-term hazard to aquatic organisms.



GS Yuasa Battery Europe Ltd.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878 *

Document:	SDS 01
Issue No:	20
Issue Date:	30.11.2023
Page:	9 of 12

		Effect in the aquatic environment:	- Toxicity for fish: 96 h LC 50 > 100 mg/l - Toxicity for daphnia: 48 h EC 50 > 100 mg/l - Toxicity for alga: 72 h IC 50 > 10 mg/l
12.3	Battery Electrolyte:	Ecotoxicity:	- In order to avoid damage to the sewerage system, the acid has to be neutralised by means of soda ash, sodium bicarbonate or sodium carbonate before disposal. - Ecological damage is possible by change of pH. The electrolyte solution reacts with water and organic substances, causing damage to flora and fauna. - The electrolyte may also contain components of Lead that can be toxic to aquatic environments.
		Persistence and Degradation:	Remains indefinitely in the environment as sulphate.
12.4	Case Material:	Elimination information:	No data available: insoluble in water
		Behaviour and environmental fate:	Due to the consistency of the product, and its insolubility in water, it will apparently not be bio-available.
12.5	Separator Material:		No data available: insoluble in water Not thought to pose any risk to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

	Components		
13.1	VRLA Battery	Europe:	- Spent (used) VRLA Batteries are subject to the requirements of the Batteries Directive 2006/66/EC on batteries and accumulators and waste batteries and accumulators. Spent (used) VRLA Batteries MUST be sent for recycling through an authorised contractor at the end-of-life. - The WEEE Directive 2002/96/EC (Waste Electrical and Electronic Equipment) applies. Spent (used) VRLA Batteries MUST be removed from electrical and electronic equipment at the end-of-life.
		Worldwide:	- VRLA batteries contain inorganic Lead compounds and Sulphuric Acid which are damaging to the environment. - Spent (used) batteries must be disposed of in an environmentally friendly manner in accordance with local national laws and regulations.
			- VRLA batteries must not be dismantled, burnt or incinerated as a means of disposal. - At the end of life VRLA batteries may still be electrically 'live' and contain a large amount of electrical energy. The same care and attention to safe handling should be taken as when handling new batteries. Particular care must be taken to avoid short-circuiting the battery terminals.
13.2	Plate Grids and Active materials:	Europe Worldwide	- Metallic Lead and active materials (Lead Oxides) must be recycled. - Disposal must be carried out in accordance with the European Hazardous Waste Directive 2008/98/EC
13.3	Battery Electrolyte:	Europe	Disposal must be carried out in accordance with the European Hazardous Waste Directive 2008/98/EC on the protection of the environment through criminal law
		Worldwide	Disposal should be in accordance with local, state or national legislation.
		General	Battery electrolyte is dilute Sulphuric Acid, the strength of which depends on the state of charge of the batteries. It must be neutralised before disposal. See SECTION 6 for clean-up and disposal advice.
13.3	Case Material:		- Do not dispose of this product into sewers, any ocean or water course in order to prevent marine animals and birds from ingesting. - Recycling is encouraged. - Disposal by controlled incineration or source landfill in accordance with local national laws and regulations may be acceptable.
13.4	Separator Material:		- Constitutes a special waste by virtue of hazardous substance content. - Dispose of via approved landfill site. Disposal by controlled source landfill in accordance with local national laws and regulations may be acceptable.



GS Yuasa Battery Europe Ltd.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878 *

Document:	SDS 01
Issue No:	20
Issue Date:	30.11.2023
Page:	10 of 12

SECTION 14: TRANSPORT INFORMATION

Components		
14.1	VRLA Battery	Land Transport (ADR) *  Sea Transport (IMDG) *  Air Transport (IATA) * 
		<u>Land Transport (ADR / RID)</u> - UN N°: UN2800 - Classification ADR / RID: Class 8 - Proper Shipping Name: BATTERIES, WET, NON-SPILLABLE electric storage - Packing Group ADR: not assigned - Tunnel code: E - ADR / RID: New and spent (used) batteries are exempt from all ADR / RID (special provision 598) <u>Sea transport (IMDG Code)</u> - UN N°: UN2800 - Classification: Class 8 - Proper Shipping Name: BATTERIES, WET, NON-SPILLABLE electric storage - EmS: F-A, S-B - Non-Spillable batteries meet the requirements of Special Provision 238 parts 1 & 2; they are exempt from all IMDG codes and are not subject to special regulation for sea transport <u>Air Transport (IATA-DGR)</u> - UN N°: 2800 - Classification: Class 8 - Proper Shipping Name: BATTERIES, WET, NON-SPILLABLE electric storage <u>Special Provision A48</u>: Packaging test are not considered necessary <u>Special Provision A67</u>: Yuasa's VRLA batteries meet the requirements of Packing Instruction 872. - The battery has been prepared for transport so as to prevent: a) A short-circuit of the battery's terminals by packaging in a strong and sturdy carton box; AND/OR b) The battery has been fitted with an insulating cover (made from ABS) which prevents contact with the terminals. c) Unintentional activation is thus prevented - The words "NOT RESTRICTED" and the Special Provision (SP) number must be indicated on all shipping documents <u>Special Provision: A164</u>: The battery has been prepared for transport so as to prevent: a) Short-circuit of the battery's terminals by packaging in a strong and sturdy carton box; AND/OR b) The battery has been fitted with a cover (made from ABS) which prevents contact with the terminals c) Unintentional activation is thus prevented

SECTION 15: REGULATORY INFORMATION

Components		
15.1	VRLA Battery	Required Markings:  Crossed-out wheeled bin indicating "SEPARATE COLLECTION" for all batteries and accumulators. Not to be disposed of with general domestic, commercial or industrial waste. Ref: The Batteries Directive 2006/66/EC  The Pb symbol indicates the heavy metal content of the battery and enables the Lead-Acid battery to be sorted for recycling. Ref: The Batteries Directive 2006/66/EC.  The International Recycling Symbol, required by law in many countries world-wide to facilitate the identification of secondary batteries and accumulators for recycling. Ref: IEC 61429 : 1995, Marking of secondary cells and batteries with the International Recycling Symbol ISO 7000-1135. EC Directives <u>Directive 2006/66/EC</u>, on batteries and accumulators and waste batteries and accumulators Paragraph (Recital) 29 states: "Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment does not apply to batteries and accumulators used in electrical and electronic equipment." REACH Candidate List (SVHC) Contains the following substances from the list of candidate substances of REACH: Lead (EC 231-100-4, CAS 7439-92-1)

If this document is printed, it is to be considered uncontrolled and for reference only.



GS Yuasa Battery Europe Ltd.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878 *

Document:	SDS 01
Issue No:	20
Issue Date:	30.11.2023
Page:	11 of 12

			Tetrabromobisphenol A (EC 201-236-9, CAS 79-94-7) only for FR (V0) models PIC Regulation (Prior Informed Consent) Substances subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals: lead dioxide (1309-60-0), lead sulphate (7446-14-2) POP Regulation (Persistent Organic Pollutants) Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants Ozone Regulation (1005/2009) Contains no substance subject to REGULATION (EU) No 1005/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 September 2009 on substances that deplete the ozone layer. Explosives Precursors Regulation (2019/1148) Contains substance subject to Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors. ANNEX I RESTRICTED EXPLOSIVES PRECURSORS List of substances which shall not be made available to, or introduced, possessed or used by, members of the general public, whether on their own or in mixtures or substances that include those substances, unless the concentration is equal to or lower than the limit values set out in column 2, and for which suspicious transactions and significant disappearances and thefts are to be reported to the relevant national contact point within 24 hours.
--	--	--	---

SECTION 16: OTHER INFORMATION

	Components		
16 (a)	Revision Information	*Issue20 : 30/11/2023 Updated to Regulation (EU) 2020/878 14.1 Added shipping symbols	
16 (b)	Abbreviations	Pb – the chemical symbol for Lead Ba – the chemical symbol for Barium Ca – the chemical symbol for Calcium Sn – the chemical symbol for Tin PbO₂ – the chemical formulae for Lead Dioxide H₂SO₄ – the chemical formulae for Sulphuric Acid VRLA – Valve Regulated Lead-Acid battery	
16 (c)	Key literature references and sources of data	SDS documents from suppliers for components and raw materials	
16 (d)	Full text of H phrases:	H302	Harmful if swallowed
		H314	Causes severe skin burns and eye damage
		H315	Causes skin irritation
		H318	Causes serious eye damage
		H360D	May damage the unborn child
		H360Fd	May damage fertility. Suspected of damaging the unborn child
		H362	May cause harm to breast-fed children
		H372	Causes damage to organs through prolonged or repeated exposure
		H400	Very toxic to aquatic life
		H410	Very toxic to aquatic life with long lasting effects
16 (e)	Training Advice	- Only trained, competent personnel, who have received special instructions for the hazards and risks, should be allowed to handle VRLA Batteries. - See Section 7.1 for general advice	

If this document is printed, it is to be considered uncontrolled and for reference only.



GS Yuasa Battery Europe Ltd.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) with
its amendment Regulation (EU) 2020/878 *

Document:	SDS 01
Issue No:	20
Issue Date:	30.11.2023
Page:	12 of 12

16 (f)	Further Information	To ensure the safe use of VRLA Industrial Batteries supplied by GS YUASA, the following precautions must be observed: • Warning: Risk of fire, explosion, or burns. Do not disassemble, heat above 50°C, or incinerate. • Never short-circuit battery terminals, since sparks and arcs produced can injure personnel and are a fire and explosion hazard. • Batteries must always be charged on a voltage-regulated charging system with adequate ventilation provided to avoid the build-up of ignitable gases and to promote good heat dissipation. • Do not charge VRLA Batteries above + 50 °C, discharge or store above + 60 °C. • Under extreme conditions of charging equipment malfunction and/or battery failure, high voltage and high temperature conditions may occur causing the evolution of Hydrogen Sulphide (H₂S) gas, which is toxic. If detected by its odour of rotten eggs (at extremely low concentrations), switch off the charging equipment, evacuate all personnel from the area and ventilate well. Seek advice before attempting to re-start charging • NEVER PLACE VRLA BATTERIES INSIDE SEALED OR GAS-TIGHT ENCLOSURES DURING OPERATION, TRANSPORT AND STORAGE VRLA Batteries emit hydrogen gas which is highly flammable and will form explosive mixtures in air from approximately 4% to 76%. This can be ignited by a spark at any voltage, naked flames or other sources of ignition
-----------	------------------------	---

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

Shipper
QCS-QUICK CARGO SERVICE GMBH
WERNER-WITT-STRASSE 5
21035 HAMBURG, GERMANY
TAX-ID:DE114202533
TELEPHONE: 00494023838940

B/L No.
VER283698



SACO SHIPPING LINE LTD

Consigned to order of
AIRMAR TRANSPORTES INTERNACIONALES
S.A. DE C.V. NORTE 174, NO. 549,
COL PENSADOR MEXICANO 15510 MEXICO,
CMX MEXICO TAX ID: ATI 9307029F8
TEL: 52.55.19.99.90.00

Notify Party and address
AIRMAR TRANSPORTES INTERNACIONALES
S.A. DE C.V. NORTE 174, NO. 549,
COL PENSADOR MEXICANO 15510 MEXICO,
CMX MEXICO TAX ID: ATI 9307029F8
TEL: 52.55.19.99.90.00

SACO SHIPPING LINE LIMITED
44, Kroytser
PANORAMA Residence
Block A, Flat 01
3120 Limassol CYPRUS
FMC Organization No. 025875

6/04/HAM/169744

Copy

		Place of receipt HAMBURG CFS	
Ocean vessel GSL TEGEA 616W		Port of loading HAMBURG	
Port of discharge VERACRUZ	Place of delivery VERACRUZ CFS		Freight payable VERACRUZ
		Number of original Bills of Lading 0/ZERO	
Marks and Nos. AICON X-RAY GMBH F. ARMIDA Y CIA SUCS SA DE CV KP389, KP390 STOWED INTO CONTAINER NO.: MRSU8953788	Quantity of Goods 2 PACKAGES	Description of Goods SCANNER AS PER INVOICE: FS/1/04/2026, FS/2/04/2026 HS-CODE:902219	Said to contain Gross weight, kg. 2255,000 Measurement, m ³ 23,210
		SEAL : B136835	

TOTAL **2 PACKAGES** **2255,000 KGS** **23,210 CBM**

FREIGHT COLLECT - SHIPPED ON BOARD - EXPRESS RELEASE

All particulars above declared by Merchant

For delivery of cargo please apply to:

INTERTEAM, S.A. DE C.V.
SERVICIOS INTERNACIONALS DE
COMERCIO, COLIMA 114 DESPACHO 201,
COLONIA ROMA,C.P. 06700 MEXICO D.F.
TEL:005255146915,FAX:005252087989
DANIELA.BORJA@INTERTEAM.COM.MX

RECEIVED for shipment the above mentioned Goods in apparent good order and condition as far as could be ascertained by exercising reasonable means of checking or as stated above.

The Carrier in accordance with the provisions contained on this side and on the reverse side of this document;

- undertakes to perform or to procure the performance of the entire transport from the place at which the Goods are taken in charge to the place designated for delivery in this document, and
- assumes liability as prescribed in this document for such transport.

One of the Bills of Lading to be surrendered duly endorsed in exchange for the Goods or delivery order.

IN WITNESS whereof three (3) original Bills of Lading have been signed, if not otherwise stated above, one of which being accomplished the other(s) to be void.

Place and date of issue
HAMBURG 25.04.2026

Signed on behalf of the Carrier SACO SHIPPING LINE LIMITED

SACO Shipping GmbH
Wollkämmerstraße 1
21107 Hamburg
Germany



As agent only for SACO SHIPPING LINE LIMITED LIMASSOL



Declared Value of the Goods (see clause 12)
US\$
Ad valorem freight paid:

Note:

The Merchant's attention is called to the fact that according to Clauses 11 to 13 of this Bill of Lading, the liability of the Carrier is, in most cases, limited in respect of loss of or damage to the goods and delay

Shipper
HBH MAGHREB LOGISTICS GMBH
MARKGRÖNINGER STR. 36
71701 SCHWIEBERDINGEN
TEL.: +49 7150 918 50 53
MOB: +49 151 14 30 79 0

B/L No.
VER283737



SACO SHIPPING LINE LTD

SACO SHIPPING LINE LIMITED
44, Kroytser
PANORAMA Residence
Block A, Flat 01
3120 Limassol CYPRUS
FMC Organization No. 025875

6/04/HAM/169757

Copy

Consigned to order of
DSV AIR & SEA S.A DE C.V -I930
RFC.DAA020218JY1
AV.INSURGENTES SUR 1271 P.4/5
EXTREMADURA INSU
AS AGENT OF DSV OCEAN

Notify Party and address
DSV AIR & SEA S.A DE C.V -I930
RFC.DAA020218JY1
AV.INSURGENTES SUR 1271 P.4/5
EXTREMADURA INSU
AS AGENT OF DSV OCEAN

		Place of receipt HAMBURG CFS	
Ocean vessel GSL TEGEA 616W		Port of loading HAMBURG	
Port of discharge VERACRUZ	Place of delivery VERACRUZ CFS		Freight payable HAMBURG
		Number of original Bills of Lading 0/ZERO	
Marks and Nos. 26GE0576	Quantity of Goods 1 PALLET	Description of Goods VENTING EXIT VW MQB PZEV HS CODE 870899	Said to contain Gross weight, kg. 156,000 Measurement, m ³ 0,924
STOWED INTO CONTAINER NO.: MRSU8953788		SEAL : B136835	

TOTAL **1 PALLET** **156,000 KGS** **0,924 CBM**

FREIGHT PREPAID - SHIPPED ON BOARD - EXPRESS RELEASE

All particulars above declared by Merchant

For delivery of cargo please apply to:

INTERTEAM, S.A. DE C.V.
SERVICIOS INTERNACIONALS DE
COMERCIO, COLIMA 114 DESPACHO 201,
COLONIA ROMA,C.P. 06700 MEXICO D.F.
TEL.:005255146915,FAX:005252087989
DANIELA.BORJA@INTERTEAM.COM.MX

RECEIVED for shipment the above mentioned Goods in apparent good order and condition as far as could be ascertained by exercising reasonable means of checking or as stated above.

The Carrier in accordance with the provisions contained on this side and on the reverse side of this document;

- undertakes to perform or to procure the performance of the entire transport from the place at which the Goods are taken in charge to the place designated for delivery in this document, and
- assumes liability as prescribed in this document for such transport.

One of the Bills of Lading to be surrendered duly endorsed in exchange for the Goods or delivery order.

IN WITNESS whereof three (3) original Bills of Lading have been signed, if not otherwise stated above, one of which being accomplished the other(s) to be void.

Place and date of issue
HAMBURG 25.04.2026

Signed on behalf of the Carrier SACO SHIPPING LINE LIMITED

SACO Shipping GmbH
Wollkämmerstraße 1
21107 Hamburg
Germany



As agent only for SACO SHIPPING LINE LIMITED LIMASSOL



Declared Value of the Goods (see clause 12)
US\$
Ad valorem freight paid:

Note:

The Merchant's attention is called to the fact that according to Clauses 11 to 13 of this Bill of Lading, the liability of the Carrier is, in most cases, limited in respect of loss of or damage to the goods and delay

Shipper
EDUARD FUSSINGER AG
WEIDENTALWEG 28
4436 OBERDORF
SWITZERLAND

B/L No.
VER283740



SACO SHIPPING LINE LTD

Consigned to order of
WOREGG S. DE R.L. DE C.V.
FRACC. PARQUE PYME
AVENIDA INDUSTRIA METALURGICA NO. 109
MEX 76246 EL MARQUES, QUERETARO,
RFC ORM1711276W9
LUIS.LARA@WOREGG.COM

SACO SHIPPING LINE LIMITED
44, Kroytser
PANORAMA Residence
Block A, Flat 01
3120 Limassol CYPRUS
FMC Organization No. 025875

6/04/HAM/169760

Copy

Notify Party and address
WOREGG S. DE R.L. DE C.V.
FRACC. PARQUE PYME
AVENIDA INDUSTRIA METALURGICA NO. 109
MEX 76246 EL MARQUES, QUERETARO,

	Place of receipt HAMBURG CFS
--	---------------------------------

Ocean vessel GSL TEGEA 616W	Port of loading HAMBURG
--------------------------------	----------------------------

Port of discharge VERACRUZ	Place of delivery VERACRUZ CFS	Freight payable VERACRUZ	Number of original Bills of Lading 0/ZERO
-------------------------------	-----------------------------------	-----------------------------	--

Marks and Nos. INV 2650564 DEL 2640935 + 2640934	Quantity of Goods 1 PALLET	Description of Goods CYLINDRICAL PIN H.S.CODE: 7318.2900	Said to contain	Gross weight, kg. 434,200	Measurement, m ³ 0,568
---	-------------------------------	--	-----------------	------------------------------	--------------------------------------

WOREGG S. DE R.L. DE
C.V.
MEXICO
STOWED INTO CONTAINER NO.: MRSU8953788

SEAL : B136835

TOTAL	1 PALLET	434,200 KGS	0,568 CBM
--------------	-----------------	--------------------	------------------

FREIGHT COLLECT - SHIPPED ON BOARD - EXPRESS RELEASE

All particulars above declared by Merchant

For delivery of cargo please apply to:

INTERTEAM, S.A. DE C.V.
SERVICIOS INTERNACIONALS DE
COMERCIO, COLIMA 114 DESPACHO 201,
COLONIA ROMA,C.P. 06700 MEXICO D.F.
TEL:005255146915,FAX:005252087989
DANIELA.BORJA@INTERTEAM.COM.MX

RECEIVED for shipment the above mentioned Goods in apparent good order and condition as far as could be ascertained by exercising reasonable means of checking or as stated above.

The Carrier in accordance with the provisions contained on this side and on the reverse side of this document;

- undertakes to perform or to procure the performance of the entire transport from the place at which the Goods are taken in charge to the place designated for delivery in this document, and
- assumes liability as prescribed in this document for such transport.

One of the Bills of Lading to be surrendered duly endorsed in exchange for the Goods or delivery order.

IN WITNESS whereof three (3) original Bills of Lading have been signed, if not otherwise stated above, one of which being accomplished the other(s) to be void.

Place and date of issue
HAMBURG 25.04.2026

Signed on behalf of the Carrier SACO SHIPPING LINE LIMITED

SACO Shipping GmbH
Wollkämmerstraße 1
21107 Hamburg
Germany



As agent only for SACO SHIPPING LINE LIMITED LIMASSOL



Declared Value of the Goods (see clause 12)
US\$
Ad valorem freight paid:

Note:

The Merchant's attention is called to the fact that according to Clauses 11 to 13 of this Bill of Lading, the liability of the Carrier is, in most cases, limited in respect of loss of or damage to the goods and delay

Shipper
PREWAPLAST AG
TUNNELSTRASSE 10
CH-8732 NEUHAUS
SWITZERLAND

B/L No.
VER283750



SACO SHIPPING LINE LTD

Consigned to order of
WOREGG S.DE R.L. DE C.V.
RFC: ORM1711276W9
FRACC. PARQUE PYME
AVENIDA INDUSTRIA METALURGICA NO. 109
MX - 76246 EL MARQUES, QUERETARO

Notify Party and address
WOREGG S.DE R.L. DE C.V.
RFC: ORM1711276W9
FRACC. PARQUE PYME
AVENIDA INDUSTRIA METALURGICA NO. 109
MX - 76246 EL MARQUES, QUERETARO

SACO SHIPPING LINE LIMITED
44, Kroytser
PANORAMA Residence
Block A, Flat 01
3120 Limassol CYPRUS
FMC Organization No. 025875

6/04/HAM/169768

Copy

		Place of receipt HAMBURG CFS	
Ocean vessel GSL TEGEA 616W		Port of loading HAMBURG	
Port of discharge VERACRUZ		Place of delivery VERACRUZ CFS	Freight payable VERACRUZ
			Number of original Bills of Lading 0/ZERO
Marks and Nos. DN 300712 INV 400588 STOWED INTO CONTAINER NO.: MRSU8953788	Quantity of Goods 1 PALLET	Description of Goods PLASTICS HS CODE 3926.9000	Said to contain Gross weight, kg. 174,000 Measurement, m ³ 0,980
		SEAL : B136835	

TOTAL **1 PALLET** **174,000 KGS** **0,980 CBM**

FREIGHT COLLECT - SHIPPED ON BOARD - EXPRESS RELEASE

All particulars above declared by Merchant

For delivery of cargo please apply to:

INTERTEAM, S.A. DE C.V.
SERVICIOS INTERNACIONALS DE
COMERCIO, COLIMA 114 DESPACHO 201,
COLONIA ROMA, C.P. 06700 MEXICO D.F.
TEL:005255146915, FAX:005252087989
DANIELA.BORJA@INTERTEAM.COM.MX

RECEIVED for shipment the above mentioned Goods in apparent good order and condition as far as could be ascertained by exercising reasonable means of checking or as stated above.

The Carrier in accordance with the provisions contained on this side and on the reverse side of this document;

- undertakes to perform or to procure the performance of the entire transport from the place at which the Goods are taken in charge to the place designated for delivery in this document, and
- assumes liability as prescribed in this document for such transport.

One of the Bills of Lading to be surrendered duly endorsed in exchange for the Goods or delivery order.

IN WITNESS whereof three (3) original Bills of Lading have been signed, if not otherwise stated above, one of which being accomplished the other(s) to be void.

Place and date of issue
HAMBURG 25.04.2026

Signed on behalf of the Carrier SACO SHIPPING LINE LIMITED

SACO Shipping GmbH
Wolkämmereistraße 1
21107 Hamburg
Germany



As agent only for SACO SHIPPING LINE LIMITED LIMASSOL



Declared Value of the Goods (see clause 12)
US\$
Ad valorem freight paid:

Note:

The Merchant's attention is called to the fact that according to Clauses 11 to 13 of this Bill of Lading, the liability of the Carrier is, in most cases, limited in respect of loss of or damage to the goods and delay

Shipper
LINKINPARTNER EUROPE GMBH
HAMMERBROOKSTR. 90,
20097 HAMBURG
GERMANY

B/L No.
VER283765



SACO SHIPPING LINE LTD

Consigned to order of
EUROPARTNERS MEXICO S.A. DE C.V.
AVENIDA REVOLUCION #649
COLONIA JARDIN ESPANOL
MONTERREY, NUEVO LEON
MEXICO 64820

Notify Party and address
EUROPARTNERS MEXICO S.A. DE C.V.
TAX ID: EME020824U4A
PH: +52(81)8220 2630
FX: +52(81)8342 8310

SACO SHIPPING LINE LIMITED
44, Kroytser
PANORAMA Residence
Block A, Flat 01
3120 Limassol CYPRUS
FMC Organization No. 025875

6/04/HAM/169775

Copy

		Place of receipt HAMBURG CFS	
Ocean vessel GSL TEGEA 616W		Port of loading HAMBURG	
Port of discharge VERACRUZ	Place of delivery VERACRUZ CFS		Freight payable VERACRUZ
		Number of original Bills of Lading 0/ZERO	
Marks and Nos. AKWEL DN: 54019762	Quantity of Goods 2 PALLETS	Description of Goods FITTINGS, JOINTS, ELBOWS INVOICE: 40045075 HS-CODE: 391740	Gross weight, kg. 384,000
		Measurement, m ³ 1,824	

STOWED INTO CONTAINER NO.: MRSU8953788

SEAL : B136835

TOTAL **2 PALLETS** **384,000 KGS** **1,824 CBM**

FREIGHT COLLECT - SHIPPED ON BOARD - EXPRESS RELEASE

All particulars above declared by Merchant

For delivery of cargo please apply to:

INTERTEAM, S.A. DE C.V.
SERVICIOS INTERNACIONALS DE
COMERCIO, COLIMA 114 DESPACHO 201,
COLONIA ROMA, C.P. 06700 MEXICO D.F.
TEL: 005255146915, FAX: 005252087989
DANIELA.BORJA@INTERTEAM.COM.MX

RECEIVED for shipment the above mentioned Goods in apparent good order and condition as far as could be ascertained by exercising reasonable means of checking or as stated above.

The Carrier in accordance with the provisions contained on this side and on the reverse side of this document;

- undertakes to perform or to procure the performance of the entire transport from the place at which the Goods are taken in charge to the place designated for delivery in this document, and
- assumes liability as prescribed in this document for such transport.

One of the Bills of Lading to be surrendered duly endorsed in exchange for the Goods or delivery order.

IN WITNESS whereof three (3) original Bills of Lading have been signed, if not otherwise stated above, one of which being accomplished the other(s) to be void.

Place and date of issue
HAMBURG 25.04.2026

Signed on behalf of the Carrier SACO SHIPPING LINE LIMITED

SACO Shipping GmbH
Wolkämmerstraße 1
21107 Hamburg
Germany



As agent only for SACO SHIPPING LINE LIMITED LIMASSOL



Declared Value of the Goods (see clause 12)
US\$
Ad valorem freight paid:

Note:

The Merchant's attention is called to the fact that according to Clauses 11 to 13 of this Bill of Lading, the liability of the Carrier is, in most cases, limited in respect of loss of or damage to the goods and delay