

Material Safety Data Sheet (MSDS)

Product picture and name:



T1



T1 RHTP

EN: This material safety data sheet refers to the batteries included in **all Trusted data trackers/ loggers in the 1-series***. Standard products are pictured.

Trusted A/S declares that these products contain **Li-SoCi₂** batteries as documented on the following pages.

DE: Dieses Sicherheitsdatenblatt bezieht sich auf die Batterien, die in **allen Trusted Datenloggern/Trackern der 1er-Serie*** enthalten sind. Standardprodukte sind abgebildet.

Trusted A/S erklärt, dass diese Produkte **Li-SoCi₂** enthalten Akkupacks, wie auf den folgenden Seiten dokumentiert.

FR: Cette fiche de données de sécurité fait référence aux batteries incluses dans tous **les enregistreurs de données/traqueurs Trusted de la série 1***. Les produits standard sont illustrés.

Trusted A/S déclare que ces produits contiennent **Li-SoCi₂** batteries comme documenté dans les pages suivantes.

ES: Esta hoja de datos de seguridad del material se refiere a las baterías incluidas en **todos los registradores/rastreadores de datos Trusted de la serie 1***. Los productos estándar se muestran en la imagen.

Trusted A/S declara que estos productos contienen **Li-SoCi₂** baterías como se documenta en las siguientes páginas.

IT: Questa scheda di sicurezza dei materiali si riferisce alle batterie incluse in **tutti i data logger/tracker Trusted della serie 1***. I prodotti standard sono illustrati.

Trusted A/S dichiara che questi prodotti contengono **Li-SoCi₂** batterie come documentato nelle pagine seguenti.

PT: Esta ficha de dados de segurança do material refere-se às baterias incluídas em **todos os registradores/rastreadores de dados Trusted da série 1***. Os produtos padrão são retratados.

Trusted A/S declara que estes produtos contêm **Li-SoCi₂** baterias conforme documentado nas páginas a seguir.

* All other relevant editions are marked with "Type: T1.xxx" on the label

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- Material Safety Data Sheet, Guangzhou MCM Certification & Testing Co., Ltd.
- UN38.3 Summary ER14505M, Guangzhou MCM Certification & Testing Co., Ltd.
- Specification FANSO ER14505M, Wuhan Fanso Technology Co., Ltd.
- Certificate of Compliance UL 1642, UL LLC



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检验
INSPECTION
CNAS IB0551



Report No.:
报告编号: WHFAT2FBX03SDS01

MATERIAL SAFETY DATA SHEET

材料安全数据表

Product 产品	Primary Lithium Thionyl Chloride Battery 一次锂亚硫酰氯电池
Type/Model 型号	See next page 请参见下页
Issue Date 签发日期	2025-12-22
Validity 有效期	2026-01-01 ~ 2026-12-31
Compiler 编写	Zhang Cong Su
Reviewer 审核	Duan Huang
Approver 批准	Hongbin Xu

广州邦禾检测技术有限公司
Guangzhou MCM Certification & Testing Co., Ltd.

检验专用章

Material Safety Data Sheet

材料安全数据表

SECTION 1 - CHEMICAL AND COMPANY IDENTIFICATION						
第1节—化学品和公司标识						
Product 产品	Primary Lithium Thionyl Chloride Battery 一次锂亚硫酰氯电池					
Type/Model: 型号 Parameter 参数	The same chemical system and structural design existed in following series of models 以下系列型号具有相同的化学体系与结构设计: 3.6V, 0.5Ah~30Ah					
	序号 No.	型号 Model	锂含量 Lithium content	序号 No.	型号 Model	锂含量 Lithium content
	1	ER2450	0.16g	18	ER26500M	1.6g
	2	ER14250H	0.3g	19	ER25500S	2.2g
	3	ER10450	0.3g	20	ER26500H	2.3g
	4	ER14250S	0.3g	21	ER26500S	2.3g
	5	ER32L065	0.33g	22	ER26720	3.5g
	6	ER14335M	0.4g	23	ER34615M	4.2g
	7	ER14335S	0.43g	24	ER251020S	4.4g
	8	ER14335	0.46g	25	ER251020H	4.5g
	9	ER14335H	0.46g	26	ER261020H	4.5g
	10	ER14505M	0.6g	27	ER261020S	4.6g
	11	ER14505H	0.7g	28	ER34615S	4.9g
	12	ER14505S	0.73g	29	ER34615H	5.0g
	13	ER17505M	0.8g	30	ER42720M	8.1g
	14	ER17505	0.9g	31	ER341245S	9.8g
	15	ER18505M	0.96g	32	ER341245	10.0g
	16	ER18505H	1.0g	33	ER42720	10.3g
	17	ER26335S	1.4g	--	--	--
Usage 用途	(Further) Used in Portable Equipment (后续) 用于便携式设备					
Company 公司	WUHAN FANSO TECHNOLOGY CO.,LTD 武汉孚安特科技有限公司					
Address 地址	Floor 2, Building 3, Jiahua Technology Industrial Park, No.270 of Huangjinkou Three Village, Hanyang District, Wuhan City, China 武汉市汉阳区黄金口三村270号加华科技产业园3号楼2层					
Fax 传真	--					
Zip code 邮编	--					
E-mail 电子邮箱	094673@evebattery.com					
Emergency Tel. 紧急联系电话	18627884463					
Manufacturer 制造单位	WUHAN FANSO TECHNOLOGY CO.,LTD 武汉孚安特科技有限公司					
Address 地址	Floor 2, Building 3, Jiahua Technology Industrial Park, No.270 of Huangjinkou Three Village, Hanyang District, Wuhan City, China 武汉市汉阳区黄金口三村270号加华科技产业园3号楼2层					
Factory 生产单位	WUHAN FANSO TECHNOLOGY CO.,LTD 武汉孚安特科技有限公司					

Address 地址	Floor 2, Building 3, Jiahua Technology Industrial Park, No.270 of Huangjinkou Three Village, Hanyang District, Wuhan City, China 武汉市汉阳区黄金口三村270号加华科技产业园3号楼2层
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SECTION 2 - HAZARDS IDENTIFICATION

第2节—危害识别

Classification 分类:

According to Regulation (EC) No 1272/2008 (CLP), the goods are not considered dangerous goods and therefore no SDS is required. **The hazards mentioned in this document are in the case of a ruptured battery (Electrolyte leakage).**

根据法规(EC) No 1272/2008 (CLP), 该货物不被视为危险货物, 因此不需要提供SDS。
本文件提到的危险是针对电池破裂(电解液泄漏)的情况。

Acute toxicity, Category 3, oral; H301

急毒性-类别3口服; H301

Skin corrosion, Category 1A; H314

皮肤腐蚀-类别1A; H314

Serious eye damage, Categories 1; H318

严重眼损伤-类别1; H318

Specific target organ toxicity following repeated exposure, Categories 1; H372

特定目标器官毒性 重复接触-类别1; H372

Label elements 标签要素:

Hazard pictograms
象形图



Signal Word **Danger**
警示词 **危险**

Technology & Service

Hazard Statements 风险声明

H301 Toxic if swallowed
吞咽会中毒

H314 Causes severe skin burns and eye damage
造成严重皮肤灼伤和眼损伤

H372 Causes damage to organs through prolonged or repeated exposure
长期或反复接触会对器官造成损害

Precautionary Statements – Prevention 预防说明—预防	
P270	Do not eat, drink or smoke when using this product 使用本产品时不要进食、饮水或吸烟
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection 戴防护手套/穿防护服/戴防护眼罩/戴防护面具/戴听力保护装置
Precautionary Statements – Response 预防声明—响应	
P301+P330 +P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. 如误吞咽：漱口。不要诱导呕吐
P303+P361 +P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower]. 如皮肤（或头发）沾染：立即脱掉所有沾染的衣服。用水清洗患处[或淋浴]。
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing 如误吸入：将人转移到空气新鲜处，保持呼吸舒适体位
P305+P351 +P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing 如进入眼睛：用水小心冲洗几分钟。如戴隐形眼镜并可方便地取出，取出隐形眼镜。继续冲洗。
Precautionary Statements – Storage 预防声明—存储	
P405	Store locked up 存放处须加锁
Precautionary Statements – Disposal 预防声明—处置	
P501	Dispose of contents/container, in accordance with local/regional/national/international regulations 处置内装物/容器，根据当地/地区/国家/国际要求
Hazards not otherwise classified (HNOC) 未分类的危险	
Not applicable 不适用	
Other information 其他信息	
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. 对水生生物有害，可能对水生环境造成长期不利影响。	
Interactions with other chemicals 与其他化学物质的相互作用	
Use of alcoholic beverages may enhance toxic effect. 使用酒精饮料可能会增强毒性作用	

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENT 第3节—成分信息			
Ingredient 成分	Molecular formula 分子式	CAS No. CAS 号	Weight 含量
Lithium /锂	Li	7439-93-2	45-55%
Thionyl dichloride /亚硫酰氯	SOCl ₂	7719-09-7	40-50%
poly(tetrafluoroethylene);PTFE /聚四氟乙烯	(C ₂ F ₄) _n	9002-84-0	0.02%
Aluminium chloride /三氯化铝	AlCl ₃	7446-70-0	1-5%
Graphite /石墨	C	7782-42-5	3-4%

<p>SECTION 4 - FIRST AID MEASURES 第4节—急救措施</p>
<p>Eye Exposure 眼睛接触 In case of contact with eyes, flush with copious of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician. 如果与眼睛接触，用大量的水冲洗至少15分钟。用手指分开眼睑，确保充分的冲洗。寻求医生。</p>
<p>Skin Exposure 皮肤接触 If the internal battery materials of an opened battery cell come into contact with skin, immediately flush with plenty of water or soap. 如果打开的电池的內部電池材料接触到皮肤，立即用大量的水或肥皂冲洗。</p>
<p>Inhalation Exposure 吸入 In case of inhaling gas volatilized from inside of the battery, seek immediate medical attention. 如果吸入了電池內部揮發的氣體，請立即就醫。</p>
<p>Ingestion Exposure 吞嚥 If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel. 如果吞嚥，請就醫。除非醫務人員指示，否則不要催吐。</p>

<p>SECTION 5 - FIRE FIGHTING MEASURES 第5节—消防措施</p>
<p>Danger characteristic 危险特性 Exposure to excessive heat can cause venting of the liquid electrolyte. 暴露在过热的环境中会导致液体电解质的释放。 Battery may burst and release hazardous decomposition products when exposed to a fire situation. 当暴露在火灾环境中时，电池可能会爆裂并释放出危险的分解产物。</p>
<p>Hazardous combustion products 有害危险产物 Corrosive and toxic gas may be emitted during fire. 着火期间可能会排放腐蚀性和有毒气体。</p>
<p>Fire-Fighting method 灭火措施 The staff must equip with filtermask (full mask) or isolated breathing apparatus. 员工必须配备过滤器面罩或隔离式呼吸器。 The staff must wear the clothes which can defense the fire in the upwind direction. 工作人员必须穿能在逆风方向防火的衣服。 Remove the burning object to the open space as soon as possible. 尽快将着火物体移到空地上。 Spray water on the burning object to keep them cool until finish extinguishment. 把水喷在着火物体上，使其降温，直到熄灭。</p>
<p>Fire-Fighting media 灭火介质 Plenty of water, dry chemical powder or carbon dioxide. 大量的水，干粉或二氧化碳。</p>

<p>SECTION 6 - ACCIDENTAL RELEASE MEASURES 第6节—意外泄漏措施</p>
<p>Emergency treatment 紧急处理 If the battery material is released, remove personnel from area until the batteries cool down and fumes dissipate. 如果電池材料被釋放，請將人員從該區域撤離，直到電池冷卻和煙霧消散。 Provide maximum ventilation to clear out hazardous gases and avoid skin and eye contact or inhalation of vapors. 提供最大的通風以清除有害氣體和避免皮膚和眼睛接觸或吸入蒸汽。 Remove spilled liquid with absorbent and incinerate waste. 用吸收劑除去溢出的液體并焚燒廢物。</p>

SECTION 7 - HANDLING AND STORAGE

第7节—处理和储存

Handling 处理

1. Do not allow battery terminals to contact each other, or contact with other metals.
不要让电池端子相互接触或与其他金属接触。
2. Do not put the cell or battery into a fire or heat it. Do not solder the cell directly. Do not use or leave the cell or battery in a place near fire or heaters.
不要将电芯或电池放入火中或加热。不要直接焊接电池。不要将电芯或电池放在靠近火源或加热器等地方。
3. Do not expose the battery to excessive physical shock or vibration.
不要让电池受到过度的物理冲击或振动。
4. Do not immerse, throw, and wet a battery in water.
不要将电池浸入水中、投掷或弄湿。
5. Short-circuiting should be avoided. Short circuit will reduce the life of the battery and can lead to ignition of surrounding materials. Physical contact with to short-circuited battery can cause skin burn.
应避免短路。短路会降低蓄电池的寿命，并可能导致周围材料着火。与短路电池的物理接触会导致皮肤灼伤。
6. The batteries 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.
不应打开、销毁或焚烧电池，因为电池可能泄漏或破裂，并将密封容器中的成分释放到环境中。
7. Place the cell beyond the child packing and container.
将电池放置在儿童触及不到的地方。
8. Do not connect the battery directly to an electric outlet or cigarette socket in a car.
不要将电池直接连接到汽车的电源插座或香烟插座上。
9. Be sure to use the specified charger for battery, and follow the charging instructions correctly.
请务必使用指定的蓄电池充电器，并正确遵循充电说明。
10. Do not mix old and new batteries together, neither with Ni-Cd, dry batteries or another manufacturer batteries or product.
不要将新旧电池混合在一起使用，也不要与镍镉电池、干电池或其他制造商的电池或产品混合使用。

Storage 储存

1. Batteries should be separated from other materials and stored in a noncombustible, well ventilated, sprinkler-protected structure with sufficient clearance between walls and battery stacks.
电池应与其他材料分开，并存放在不燃、通风良好、有洒水装置保护的结构中，墙壁和电池堆之间应有足够的间隙。
2. Keep the sample in the cool, dry and well-ventilated place (Recommended control temperature: -20~30 °C, humidity: 45~85%). Do not exposure to direct sunlight for long periods. Keep away from fire and heating sources. Keep away from prohibited compounds and store them in different storage rooms.
将样品置于阴凉、干燥、通风良好的地方（建议控制温度-20~30℃，湿度：45~85%）。不要长时间暴露在阳光直射下。远离火源和热源。远离禁配物，与禁配物分别存放于不同库室。
3. Equip with relevant types and quantities of the extinguishment instruments. The storage place should be equipped with suitable shelter materials for divulgence handling.
配备相应种类和数量的灭火器材。储存场所应配备适当的掩蔽材料，以便进行泄漏处理。
4. For rechargeable battery, charge the battery every 6 months to the amount specified by the manufacture, even if the battery is not used.
对于可充电电池，即使不使用电池，也应每6个月将电池充电至制造商规定的电量。

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

第8节—暴露控制与个人防护措施

Engineering Control 工程控制

Keep away from heat and open flame. Supply with sufficient partial air exhaust. Store in a cool, dry place.
远离热源和明火。提供足够的局部排气。存放在阴凉干燥的地方。

Respiratory Protection 呼吸保护

Not necessary under conditions of normal use. Wear self-contained breathing filtermask if the density exceed in the air. Wear breathing apparatus under the condition of emergency rescue or evacuation.
在正常使用条件下不需要。如果环境内气体密度超过空气中的密度，请佩戴自给式呼吸过滤器。在紧急救援或疏散的情况下，佩戴呼吸器。

Eyes Protection 眼睛保护

Not necessary under conditions of normal use. Wear protective glasses if handling a leaking or ruptured battery.
在正常使用条件下不需要。如果处理泄漏或破裂的电池，请戴上防护眼镜。

Skin and Body Protection 皮肤和身体保护

Not necessary under conditions of normal use. Wear fireproofing, gas defense clothes in case of handling a leaking or ruptured battery.
在正常使用条件下不需要。在处理泄漏或破裂的电池时，穿上防火防毒服。

Hands Protection 手部保护

Not necessary under conditions of normal use. Wear chemical resistant rubber glove in case of handling a leaking or ruptured battery.
在正常使用条件下不需要。在处理泄漏或破裂的电池时，需佩戴耐磨耐化学腐蚀的橡胶手套。

Other Protections 其他保护

No smoking, dining and drinking water in the workplace. Keep good habit of hygiene.
工作场所禁止吸烟、就餐和饮水。保持良好的卫生习惯。

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

第9节—理化性质

Appearance and properties 外观与性状	Solid 固体			
Smell 气味	Odorless 无特殊气味	pH value (indicate concentration) pH值（指明浓度）		NA
Melting/freezing point 熔点/凝固点	NA	(initial)boiling point & boiling range (初)沸点和沸程		NA
Relative vapor density (air =1) 相对蒸气密度(空气=1)	ND	Saturated vapor pressure 饱和蒸气压		NA
Odor threshold 气味临界值	ND	Evaporation rate 蒸发速率		NA
Relative density (water =1) 相对密度(水=1)	ND	Flash point 闪点		NA
Viscosity 黏度	NA	Decomposition temperature 分解温度		ND
Partition coefficient: n-octanol/water n-辛醇/水分配系数	NA	Upper explosion limit 爆炸上限		NA
Ignition temperature 引燃温度	ND	Lower explosion limit 爆炸下限		NA
Solubility 溶解性	Insoluble in water 不溶于水	Flammability 易燃性		ND
Remark 备注	NA= Not applicable; ND= No Data NA=不适用; ND=无信息			

SECTION 10 - STABILITY AND REACTIVITY 第10节—稳定性与反应性	
Stability 稳定性	
Stable under normal temperature and pressure. 常温常压下稳定。	
Distribution of Ban 禁配物	
Explosives, inflammables, strong oxidants and corrosives. 爆炸品、易燃物、强氧化剂和腐蚀剂。	
Conditions to Avoid 应避免的条件	
Fire source, heating source, disassemble, external short circuit, crushes, deformation, high temperature above 100°C, direct sunlight and high humidity, immerse in water or overcharge. 火源、热源、拆卸、外部短路、压碎、变形、100°C 以上高温、阳光直射、高湿度、浸水或过充。	
Hazardous Polymerization 危险聚合	
Will not occur. 不会发生。	
Hazardous Decomposition Products 有害分解产物	
Metal oxides, carboxyl compound such as CO, CO ₂ , etc. 金属氧化物，碳化合物例如一氧化碳、二氧化碳，等等。	

SECTION 11 - TOXICOLOGICAL INFORMATION 第11节—毒理学信息	
Acute Toxicity 急性毒性	No Data 无信息
Sub-acute and Chronic Toxicity 亚急性和慢性毒性	No Data 无信息
Skin irritation or corrosion 皮肤刺激性或腐蚀性	No Data 无信息
Eye irritation or corrosion 眼睛刺激或腐蚀	No Data 无信息
Skin sensitization 皮肤致敏	No Data 无信息
Respiratory sensitization 呼吸致敏	No Data 无信息
Germ cell mutation 生殖细胞突变性	No Data 无信息
Reproductive toxicity 生殖毒性	No Data 无信息
Specific target organ system toxicity - one exposure 特异性靶器官系统毒性--一次接触	No Data 无信息
Specific target organ system toxicity - repeated exposure 特异性靶器官系统毒性--反复接触	No Data 无信息
Inhalation hazard 吸入危害	No Data 无信息
Other effects on the organism 其他对生物体的影响	No Data 无信息

SECTION 12 - ECOLOGICAL INFORMATION 第12节—生态信息	
Acute aquatic toxicity 急性水生毒性	No Data 无信息
Chronic aquatic toxicity 慢性水生毒性	No Data 无信息
Durability and degradability 持久性和降解性	No Data 无信息
Potential bioaccumulation 潜在的生物累积性	No Data 无信息
Migration in soils 土壤中的迁移性	No Data 无信息
Other effects on the ecosphere 其他对生态的影响	No Data 无信息

<p>SECTION 13 - DISPOSAL CONSIDERATIONS 第13节—处置注意事项</p> <p>Appropriate Method of Substance 物质处理方法</p> <p>The battery should be completely discharged prior to disposal in order to prevent short circuit. 为了防止短路，在处理前应将蓄电池完全放电。</p> <p>The battery contains recyclable materials, and it is suggested recycle. 电池含有可回收材料，建议回收利用。</p> <p>Refer to National or Local regulations before handling. 操作前请参阅国家或地方法规。</p> <p>Disposal of the battery should be performed by permitted, professional disposal firms knowledgeable in National or Local regulations of hazardous waste treatment and hazardous waste transportation. 电池的处理应由获得国家或地方法规的许可的具有危险废物处理和危险废物运输的专业处理公司进行。</p>

<p>SECTION 14 - TRANSPORT INFORMATION 第14节—运输信息</p> <p>General packaging requirement 一般包装要求:</p> <ol style="list-style-type: none"> The cells or batteries must be protected so as to prevent short circuits. 电芯或电池必须加以保护，以防止短路。 The cells or batteries or equipment must be packed in suitable strong outer packaging. 电芯或电池或设备必须包装在合适的坚固的外包装中。 If batteries contained in equipment, equipment must be secured against movement within the outer packaging and be packed so as to prevent accidental activation. 如果电池包含在设备中，设备必须在外包装内固定，防止移动，并进行包装，以防止意外激活。 			
No. 序号	UN numbers & Proper Shipping Name, if applicable 联合国编号及运输专用名，如适用		
(1)	UN 3090_LITHIUM METAL BATTERIES UN 3090_锂金属电池		
(2)	UN 3091_LITHIUM METAL BATTERIES PACKED WITH EQUIPMENT UN 3091_锂金属电池与设备一同打包		
(3)	UN 3091_LITHIUM METAL BATTERIES CONTAINED IN EQUIPMENT UN 3091_锂金属电池安装在设备中		
(4)	/		
No. 序号	Hazard Class 危险等级	Packing Group 包装类别	Packaging requirement 包装要求
<input checked="" type="checkbox"/>	Air transportation, according to IATA-DGR 67th Edition (Effective 1 January-31 December 2026) 空运，依据IATA-DGR第67版（2026年1月1日至12月31日生效）		
	For products whose lithium content less than 1g, applied to following transport instruction 锂含量不超过1g的产品适用以下运输条款（型号序号01-16）		
(1)	Class 9 第九类危险货物	Strong package 坚固包装	Packing Instruction 968, section IB 包装说明968-IB
(2)	Not restricted 不受限制	Strong package 坚固包装	Packing Instruction 969, section II 包装说明969-II
(3)	Not restricted 不受限制	Strong package 坚固包装	Packing Instruction 970, section II 包装说明970-II
	For products whose lithium content not less than 1g, applied to following transport instruction 锂含量超过1g的产品适用以下运输条款（型号序号17-33）		
(1)	Class 9 第九类危险货物	PG II II 级包装	Packing Instruction 968, section IA 包装说明968-IA
(2)	Class 9 第九类危险货物	PG II II 级包装	Packing Instruction 969, section I 包装说明969-I

(3)	Class 9 第九类危险货物	Strong package 坚固包装	Packing Instruction 970, section I 包装说明970-I
<input checked="" type="checkbox"/>	Maritime transportation, according to IMO IMDG Code (Edition 42-24) 海运, 依据IMO IMDG Code (42-24版)		
	For products whose lithium content less than 1g, applied to following transport instruction 锂含量不超过1g的产品适用以下运输条款 (型号序号01-16)		
(1)	Not restricted 不受限制	Strong package 坚固包装	Packing as per sp188; EmS No.: F-A,S-I; Not Marine pollutant 按照sp188包装; 应急处理代码: F-A,S-I; 非海洋污染物
(2)	Not restricted 不受限制	Strong package 坚固包装	Packing as per sp188; EmS No.: F-A,S-I; Not Marine pollutant 按照sp188包装; 应急处理代码: F-A,S-I; 非海洋污染物
(3)	Not restricted 不受限制	Strong package 坚固包装	Packing as per sp188; EmS No.: F-A,S-I; Not Marine pollutant 按照sp188包装; 应急处理代码: F-A,S-I; 非海洋污染物
	For products whose lithium content not less than 1g, applied to following transport instruction 锂含量超过1g的产品适用以下运输条款 (型号序号17-33)		
(1)	Class 9 第九类危险货物	PG II II 级包装	Packing Instruction P903; EmS No.: F-A,S-I; Not Marine pollutant 包装说明P903; 应急处理代码: F-A,S-I; 非海洋污染物
(2)	Class 9 第九类危险货物	PG II II 级包装	Packing Instruction P903; EmS No.: F-A,S-I; Not Marine pollutant 包装说明P903; 应急处理代码: F-A,S-I; 非海洋污染物
(3)	Class 9 第九类危险货物	Strong package 坚固包装	Packing Instruction P903; EmS No.: F-A,S-I; Not Marine pollutant 包装说明P903; 应急处理代码: F-A,S-I; 非海洋污染物
<input type="checkbox"/>	Road transportation, according to ADR-2025 公路运输, 依据ADR-2025		
--	--	--	--
<input type="checkbox"/>	Railway transportation, according to RID-2025 铁路运输, 依据RID-2025		
--	--	--	--
Remark 备注 /			

SECTION 15 - REGULATORY INFORMATION 第15节—监管信息			
<p><i>Dangerous Goods Regulation (DGR)</i> <i>Recommendations on the Transport of Dangerous Goods Model Regulations</i> <i>International Maritime Dangerous Goods (IMDG)</i> <i>Occupational Safety and Health Act (OSHA)</i> <i>Toxic Substances Control Act (TSCA)</i> <i>Code of Federal Regulations (CFR)</i> <i>Technical Instructions for the Safe Transport of Dangerous Goods</i> <i>California Proposition 65</i> <i>Superfund Amendments and Reauthorization Act Title III (302/311/312/313) (SARA)</i> <i>Globally Harmonized System of Classification and Labeling of Chemicals(GHS)</i> In accordance with all Federal, State and local laws. 符合所有联邦、州和地方法律。</p>			

SECTION 16 - ADDITIONAL INFORMATION**第16节—附加信息****Accordinging standard 标准依据:***GB/T 16483-2008 Safety data sheet for chemical products Content and order of sections**ISO 11014:2009(E) Safety data sheet for chemical products – Content and order of sections***Editing date 编辑日期:**

2025-12-05

Department 编写机构

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WEB: <https://www.mcmtek.com>Email: service@mcmtek.com**Other Information 其他信息**

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--End of the report--

Technology & Service

锂电池 UN38.3 试验概要 Lithium Battery Test Summary

项目编号: WHFAT20210904UG13

单位信息 Company Information					
委托单位 Consignor	武汉孚安特科技有限公司 武汉市汉阳区黄金口三村 270 号加华科技产业园 3 号楼 2 层 电话/Tel: 18627884463 邮箱/Mail: 4458879476@qq.com 网址/Website: https://www.fansobattery.com				
生产单位 Manufacturer	武汉孚安特科技有限公司 武汉市汉阳区黄金口三村 270 号加华科技产业园 3 号楼 2 层 电话/Tel: 18627884463 邮箱/Mail: 4458879476@qq.com 网址/Website: https://www.fansobattery.com				
测试单位 Test Lab	广州邦禾检测技术有限公司 中国广东省广州市番禺区市广路钟三路段 13 号之一 电话/Tel: 4008-368-355 邮箱/Mail: service@mcmtek.com 网址/Website: https://www.mcmtek.com				
电池信息 Battery Information					
名称 Name	锂-亚硫酰氯电池 Lithium Thionyl Chloride Battery	电池/电芯类别 Battery/Cell Classification		锂金属电芯 Lithium Metal Cell	
型号 Type	ER14505M	商标 Trademark		FANSO	
额定电压(V) Normal Voltage(V)	3.6V	额定容量(mAh) Rated Capacity(mAh)		2100mAh	
额定能量(Wh) Watt-hour rating (Wh)	不适用 N/A	外观/Appearance		橙色圆柱形 Orange Cylindrical	
质量(g)/Mass(g)	17.5g	锂含量(g)/Li Content(g)		0.6g	
测试信息 Test Information					
测试报告编号 Test Report Number	WHFAT20210904U13	测试报告签发日期 Date of Test Report		2022.01.04	
测试标准 Edition of UN Manual of Tests and Criteria Used	联合国《关于危险货物运输的建议书-试验和标准手册》(第 7 版) 38.3 节 UN Recommendations on the Transport of Dangerous Goods Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7/Subsection 38.3				
T.1: 高度模拟 Altitude Simulation	通过 Pass	T.2: 温度试验 Thermal Test	通过 Pass	T.3: 振动 Vibration	通过 Pass
T.4: 冲击 Shock	通过 Pass	T.5: 外部短路 External Short Circuit	通过 Pass	T.6: 撞击/挤压 Impact/Crush	通过 Pass
T.7: 过度充电 Overcharge	不适用 N/A	T.8: 强制放电 Forced Discharge	通过 Pass		
UN38.3.3(f)	不适用 N/A		UN38.3.3(g) 不适用 N/A		
签名 Signatory 职务 Title	Runkang Ye 检验员		签发日期 Issued Date	2022.01.04	



SPECIFICATION



ER14505M 3.6V

Electrical characteristics

(Typical values relative to cells stored for one year at +30 °C max)

○ Nominal capacity	2100mAh
Discharged capacity at 3mA, +25 °C, 2.0V cut off	
○ Open circuit voltage	3.66V
○ Max. recommended continuous current	400mA
○ Max. Pulse capability	1000mA
1000mA, 0.1 second pulses every 2 minutes, drained with 50%, 3mA at 25 °C from undischarged cells with 20µA base current, yield voltage readings above 2.7V, the value may vary according to the pulse characteristics, the temperature and the cell's previous history	
○ Operating temperature rang	-55 °C ~ +80 °C

STORAGE:


Stored in clean, dry and cool circumstances (the temperature should be 20 degrees or lower, less than 30 degrees)

WARNING:

Don't charge, crush, disassemble, expose contents to water, heat above 85°C or may lead to explosion, burn or poison goods leakage. Discarded battery should be buried deeply to the ground.

Key features

- High and stable operating voltage
- Long shelf life
- Annual self-discharge rate lower than 1% at +25°C
- Long operating life
- High energy density (700wh/kg)
- Wide operating temperature rang
- Stainless steel can and cover
- Hermetic glass-to-metal sealing
- Non-flammable electrolyte
- Compliant with IEC 86-4 safety standard
- Non-restricted for transport

 UL Component Recognition
File Number MH46165

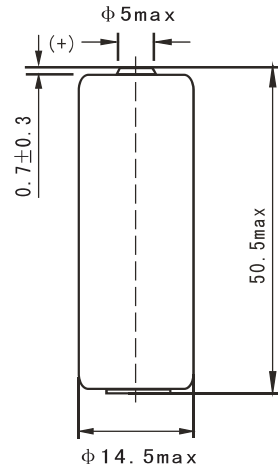
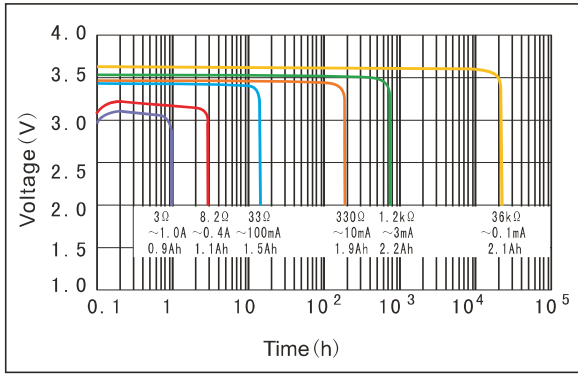
Main applications

- Intelligent instrument
- Military electronics instrument
- Alarms or security equipment
- Memory backup
- GPS tracking
- Car electronics
- Professional electronic equipment

.....

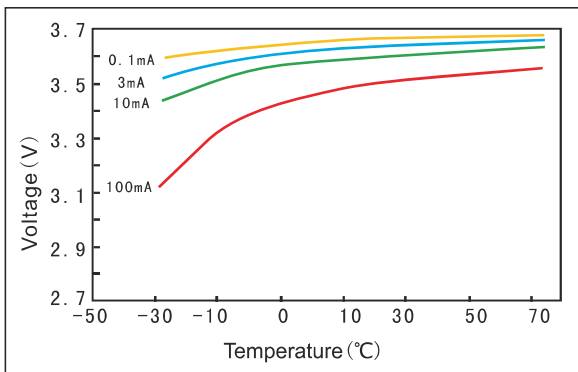
ER14505M 2100mAh

Discharge characteristics at 25°C



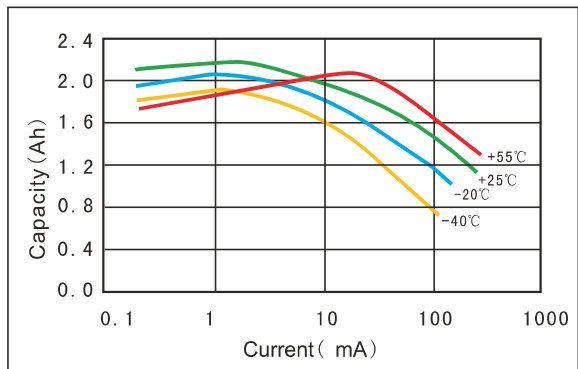
Dimensions in mm
 Weight: 19g

Voltage vs Temperature curve

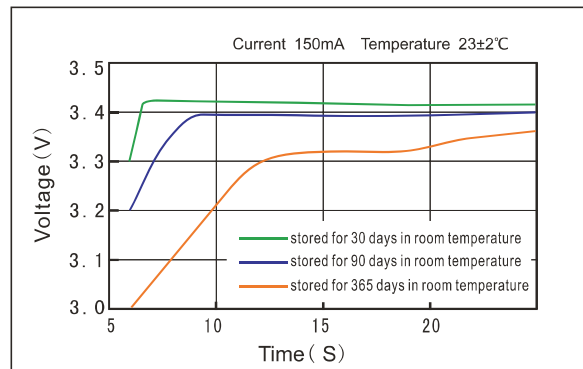


Available Terminations	
-/P*	Axial pin
-/T /PT2*	Radial Pin
-/PT /TP*	Polarized Tab
(*) : Reference to Standard Terminals for Single Cells	

Capacity vs Current curve (cut off with 2.0V)



Discharge characteristics after storage



Data in this page is subject to change without notice and becomes contractual only after written confirmation by Fanso.

CERTIFICATE OF COMPLIANCE

Certificate Number MH46165
Report Reference MH46165-2008-12-29
Date 2021-February-09

Issued to: WUHAN FANSO TECHNOLOGY CO LTD
Sitai Industrial Park
Yongfeng Avenue
Hanyang District
WuhanHubei 430051 CN

**This is to certify that
representative samples of**

LITHIUM BATTERIES - COMPONENT

USR Component – Primary Lithium/Thionyl Chloride Cylindrical
(Spiral Type) Cells: ER14250M, ER14505M, ER17505M,
ER18505M, ER26500M, ER34615M

Have been investigated by UL in accordance with the
component requirements in the Standard(s) indicated on this
Certificate. UL Recognized components are incomplete in
certain constructional features or restricted in performance
capabilities and are intended for installation in complete
equipment submitted for investigation to UL LLC.

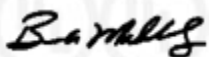
Standard(s) for Safety: UL 1642-UL Standard for Safety for Lithium Batteries

Additional Information: See the UL Online Certifications Directory at
<https://iq.ulprospector.com> for additional information

This *Certificate of Compliance* does not provide authorization to apply the UL Recognized Component Mark.
Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

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

Look for the UL Recognized Component Mark on the product.



Bruce Mahrenholz, Director North American Certification Program

UL LLC

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