化学品安全技术说明书

MATERIAL SAFETY DATA SHEET

报告编号 Reference No	:	DLDN-251208011R
委托单位 Applicant	:	GRABO LIMITED
地址 Address	:	21st Floor, CMA Building 64 Connaught Road Central Hong Kong
制造商 Manufacturer	:	尼莫电动工具（惠州）有限公司 Nemo Power Tools(HuiZhou) Co.,Ltd.
地址 Address	:	广东省惠州市惠城区小金口镇小铁区骆坑村第四工业区二层 2/F, 4th Industrial Area, Luokeng Village, Xiaotie Zone, Xiaojinkou Town, Huicheng District, Huizhou City, Guangdong Province, China
样品名称 Sample's name	:	OTTOVAC 锂离子电池组 OTTOVAC Li-ion Battery Pack
型号 Model No.	:	tb26000
出版日期 Date of Issue	:	2026-01-01

深圳市德莱新能源检测技术有限公司
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深圳市德莱新能源检测技术有限公司 检测专用章

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:	OTTOVAC 锂离子电池组 OTTOVAC Li-ion Battery Pack
型号Model No.:	tb26000
参数Ratings	7.4V, 2000mAh, 14.8Wh
重量Weight:	125.554g
尺寸Dimension	D×H: 28.52mm×140.27mm
制造商 Manufacturer:	尼莫电动工具（惠州）有限公司 Nemo Power Tools(HuiZhou) Co.,Ltd.
地址 Address:	广东省惠州市惠城区小金口镇小铁区骆坑村第四工业区二层 2/F, 4th Industrial Area, Luokeng Village, Xiaotie Zone, Xiaojinkou Town, Huicheng District, Huizhou City, Guangdong Province, China
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第二部分 危险性概述
Section 2 hazards summarizing

危险性类别 Classification of Danger	见第14部分 (See section 14)
侵入途径 Invasion Route	吸入、皮肤接触、眼睛接触和食入 Inhalation, skin contact, eye contact and ingestion
燃爆危险 Fire and explosion risk	高温或短路条件下可能会起火或者爆炸 May occur fire or explode under high temperature or short circuit conditions
腐蚀危险性 Mordant risk	无相关数据 No information available.
健康危害 Health hazard	正常条件下根据制造商的说明使用电池不会产生危害。使用不当的情况下，有破裂、火灾、发热、膨胀、漏液的风险，并可能造成意外损失。使用不当的行为包括但不限于下列情况：长时间充电、短路、投入火中，硬物猛击，尖物刺破、破裂。 Batteries are not hazardous when used according to the instruction of manufacturer under normal conditions. In the case of abuse, rupture, fire, heat, swelling, leakage risk, and may result in unexpected losses.Abuse includes but not limited to the following cases: charged for long time, short-circuited, put into fire, hit with hard object, punctured with acute object, crushed, and broken.
环境危害 Environmental hazards	无相关数据 No information available.

第三部分 成分/组成信息
Section 3 Composition, Information on Ingredients

该物质或混合物的分类：☐纯品 ☒混合物
Classification of the substance or mixture: ☐substance ☒mixture

化学名称 Chemical Composition	CAS号 CAS No.	百分含量 Weight（%）
聚偏氟乙烯PVDF	24937-79-9	0-5
钴酸锂Lithium cobaltate	12190-79-3	25-50
镍Nickel	7440-02-0	0.5-5
铜 Copper	7440-50-8	5-10
石墨 Graphite	7782-42-5	20-30
六氟磷酸锂Lithium hexafluorophosphate	21324-40-3	10-20
铝Aluminum	7429-90-5	2-10
聚乙烯Polyethylene	9002-88-4	5-10
聚丙烯Polypropylene	9003-07-0	5-10

注Note: CAS：化学文摘社Chemical Abstracts Service (Division of the American Chemical Society).
"---"：无数据No Data

第四部分 急救措施
Section 4 First Aid Measures

总说明General information
正常情况下，不需要特别的措施。在内部物质漏出的情况，如果身体部位接触到这些物质，应采取以下措施：
No special measures required.

吸入 After inhalation	立即将人员移至通风处，如果呼吸困难，速进行人工呼吸抢救。如症状持续，速就医。 Remove victim to fresh area. Administer artificial respiration if breathing is difficult. Seek medical attention.
皮肤接触 After skin contact	脱去污着衣物，用大量的水清洗，然后清洗双手，衣物清洗后再使用。如果症状持续，速就医。 Remove contaminated clothing and shoes. Immediately wash with water and soap and rinse thoroughly. Wash clothing and shoes before reuse. If irritation occurs, get medical attention.
眼睛接触 After eye contact	张开眼睛在流水下冲洗数分钟，如果症状仍然持续，请咨询医生。 Flush eyes with plenty of water for several minutes while holding eyelids open. Get medical attention if irritation persists.
食入After swallowing	禁止催吐，速就医。Do not induce vomiting. Get medical attention.

第五部分 消防措施 **Section 5 Fire Fighting Measures**	
灭火剂 Extinguishing agent	使用适合当地情况和周围环境的灭火剂，如干粉，CO2，冷水，沙子，土等。不要使用温水或者热水，不要使用哈龙类灭火材料。 Use extinguishing agent suitable for local conditions and the surrounding environment . Such as dry powder , CO2, cold water, sand, earth. Don't use warm or hot water. Don' te use Halon type extinguishing material.
特别危险性 Special hazards	在起火条件下，电池可能会破裂，释放出有害的分解产物。在经受高温(>150℃(302°F))时，含有易燃电解液的电池，可能泄漏，点燃，产生火花，当损坏或滥用(如机械损伤或过度充电)时，可能燃烧迅速与耀斑燃烧效果，也可能引燃其他在电池附近衣服。 Special hazards arising from the substance or mixture: Battery may burst and release hazardous decomposition products when exposed to a fire situation. Polymer Lithium Battery contain flammable electrolyte that may vent, ignite and produce sparks when subjected to high temperature(>150℃(302°F)), when damaged or abused (e.g. mechanical damage or electrical overcharging); may burn rapidly with flare-burning effect; may ignite other batteries in clothes proximity.
有害燃烧产物 Hazardous Combustion Products	一氧化碳，二氧化碳，锂氧化物烟气。 Carbon monoxide, carbon dioxide, lithium oxide fumes.
防护措施 Protective measures	如起火，佩戴自主呼吸机和防护服。 Wear self-contained respirator. Wear fully protective impervious suit.

第六部分 泄露应急处理 Section 6 Accidental Release Measures	
作业人员防护措施、防护装备和应急处置程序： Homework personnel protective measures, protective equipment and emergency disposal procedures:	穿上保护装备，疏散人群，确保有足够的通风。 Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation
环境保护措施： Environmental precautions:	若无政府许可，勿将材料排入周围环境。 Do not allow material to be released to the environment without proper governmental permits.
泄漏化学品的收容、清除方法及所使用的处置材料： Steps to be taken in case material is spilled or released and Waste disposal method:	从泄露区移除所有的火源，隔离人员。用一个不产生粉尘的方法打扫处理泄漏物，尽可能多地收集泄漏处理物于有标签的合适的容器中。泄露处理物禁止倒入下水道，沟渠或水源。所有废弃物必须参照联合国，国家，地方性法规进行处置。 Remove ignition sources, evacuate area. Sweep up using a method that does not generate dust. Collect as much of the spilled material as possible, placed the spilled material into a suitable disposal container. Keep spilled material out of sewers, ditches and bodies of water. All waste must refer to the United Nations, the national and local regulations for disposal.
防止次生灾害的预防措施： To prevent the secondary disasters prevention measures:	有关安全处理的资料请参阅第七部分。有关个人保护装备的资料请参阅第八部分。有关弃置的资料请参阅第十三部分。 See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

第七部分 操作处置与储存 Section 7 Handling and Storage	
操作注意事项 Precautions for safe handling	不要以接头短路的方式对电池进行操作 Don't handling the batteries in manner that allows terminals to short circuit
有关火灾及防止爆炸的资料 Information about fire and explosion protection	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。 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 Conditions for safe storage, including any incompatibilities	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。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/个体防护 Section 8 Exposure Controls, Personal Protection	
呼吸防护 Respiratory Protection	当电池排气阀打开时，应尽量使通风设备开至最大，避免将打开排气阀的电芯局限在某一狭窄空间内。正常操作条件下，呼吸保护是不必要的。 In case of battery venting, provide as much ventilation as possible. Avoid confined areas with venting cell cores. Respiratory Protection is not necessary under conditions of normal use.
通风条件 Ventilation	正常使用条件下不必考虑。 Not necessary under conditions of normal use.
防护手套 Protective Gloves	正常使用条件下不必考虑。 Not necessary under conditions of normal use.
其他防护服装或设备 Other Protective Clothing or Equipment	正常使用条件下不必考虑。 Not necessary under conditions of normal use.
电池破损时应做好个人防护 Personal Protection is recommended for damaged battery	呼吸防护，防护手套，防护服装和有护边的安全玻璃罩都是要准备的。 Respiratory Protection, Protective Gloves, Protective Clothing and safety glass with side shields.

第九部分 理化特性 Section 9 Physical and Chemical Properties		
外观Appearance	圆柱体 Cylinder	
颜色 Color	黑色 Black	
气味Odour	无味 Odorless	
电压Voltage	7.4	V
电芯电压Cell Voltage	3.7	V
电容量Electric capacity	2000	mAh
功率Watt-hour	14.8	Wh

第十部分 稳定性和反应活性 **Section 10 Stability and Reactivity**	
稳定性 Chemical stability	正常情况下稳定。 Stable in normal circumstances.
禁配物 Incompatibilities	氧化剂，酸，碱。 Oxidant, acid, alkali
应避免条件 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.
危险反应 Possibility of hazardous reactions	无资料 Data not available.
危险的分解产物 Hazardous Combustible Products	一氧化碳，二氧化碳，锂氧化物烟气 Carbon monoxide, carbon dioxide, lithium oxide fumes

第十一部分 毒理学资料 **Section 11 Toxicological Information**
在日常操作和使用中本产品不会引起毒理学性能。 This product does not elicit toxicological properties during routine handling and use.

第十二部分 生态学资料 Section 12 Ecological Information	
生态毒性 Ecological toxicity	
水生毒性 Aquatic toxicity	无相关详细资料。No further relevant information available.
持久性和降解性 Persistence and degradability	无相关详细资料。No further relevant information available.
环境系统习性 Behaviour in environmental systems	无相关详细资料。No further relevant information available.
潜在的生物累积性 Bioaccumulative potential	无相关详细资料。No further relevant information available.
土壤内移动性 Mobility in soil	无相关详细资料。No further relevant information available.
生态学资料 Ecological effects	
总括注解 General notes	若无政府许可，勿将材料排入周围环境。Do not allow material to be released to the environment without proper governmental permits.
其他副作用 Other adverse effects	无相关详细资料。No further relevant information available.

第十三部分 废弃处置 Section 13 Disposal Considerations	
废弃处置方法建议 Waste treatment methods and Recommendation	请参考国家和地方的相关法规正确进行处理。 Consult state, local or national regulations to ensure proper disposal.
废弃注意事项 Attention for waste treatment	废电池不能当作普通垃圾。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。 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**	
联合国危险货物编号 UN Number	UN3480,UN3481
运输专用名称 shipping name	锂离子电池 Lithium Ion Batteries 锂离子电池与设备打包 Lithium Ion Batteries Packed With Equipment 锂离子电池装在设备中 Lithium Ion Batteries Contained In Equipment
包装标志 Lables for package	第9类 Class 9
包装组等级 Packing group	不适用N/A
海运污染物质 Marine pollutant	无No
运输信息 Transport information	危险品规例规定，运输前，每一个锂电池设计须需要通过联合国试验和标准手册38.3节所载的测试。 The dangerous goods regulations require that each lithium battery design be subject to tests contained in Section 38.3 of the UN Manual of Tests and Criteria prior offered for transport.
	符合国际航空协会（IATA）DGR 67th(2026年版)包装说明PI965第IB部分或PI966~ PI967第II部分相关规定 The goods are complied with the requirements of Packing Instructions PI965 Section IB or PI966~PI967 Section II of 67th DGR Manual of IATA (2026 edition)
	符合《国际海运危险货物规则》特殊规定188（Amdt. 42-24） The goods are complied with the requirements of Special provision 188 of IMDG CODE（Amdt. 42-24）
运输方式 Transport Fashion	空运，海运，铁路，公路。 By air, by sea, by railway, by road.
更多关于聚合物锂电池运输，测试，包装等相关规定请参见网址http://www.labelmaster.com. More information concerning shipping, testing, marking and packaging can be obtained from Label master at http://www.labelmaster.com. 电池相互隔开并防止短路，泄露，并装放在结实的容器内运输。 注：该电池在运输过程中应防止剧烈振动、冲击或挤压，防止日晒雨淋。具体细节请参照本文第七部分操作处置与储存。 Separate Lithium-ion batteries when shipping to prevent short-circuiting. They should be packed in strong packaging for support during transport. Take in a cargo of them without falling, dropping, and breakage. Prevent collapse of cargo piles and wet by rain.	

第十五部分 法规信息
Section 15 Regulatory Information

联合国《关于危险货物运输的建议书规章范本》（23修订版）
Recommendations on the transport of dangerous goods-model Regulations 23 Revision
国际航空运输协会《危险品规则》（67版）
IATA dangerous goods regulations 67th
《国际海运危险货物规则》（IMDG Code）（42-24版）
International maritime dangerous goods code(42-24)
《欧洲道路危险货物国际运输协议》
European Agreement concerning the International Carriage of Dangerous Goods by Road
《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)
《石油污染法案》
The Oil Pollution Act (OPA)

第十六部分 其他信息
Section 16 Additional Information

注意Declare to reader:

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