

材料安全资料表

Material Safety Data Sheet

1. IDENTIFICATION OF THE PRODUCT AND SUPPLIER (产品和厂商信息)				
物品名称 Sample name	无线耳机 (内置可充式锂离子电池 1254PF4F 3.85 V 70 mAh), 内含移动电源 (442318 5 V 300 mAh) Wireless Earbuds (Containing Rechargeable li-ion Cell 1254PF4F 3.85 V 70 mAh), Packed with CHARGE CASE (442318 5 V 300 mAh)			
委托单位 Consignor	博士视听系统(上海)有限公司 BOSE Electronics (Shanghai) Company Limited			
紧急联络电话 Emergency Call	+86-755-29671888			
样品外观 Sample Appearance	多种颜色塑料外壳 Multicolor Plastic Cement Shell			
包装件信息 Package Information	锂电池总净重< 5 kg Lithium batteries total net weight < 5 kg			
序号 No.	电池种类 Battery Type	型号 Model	容量 Capacity	放置方式 Placement
1	可充电锂离子电池芯 Rechargeable Li-ion cell	1254PF4F	70 mAh 0.269 Wh	安装在设备内 Contained in equipment
2	可充电锂离子电池芯电池 Rechargeable Li-ion single cell battery	442318	300 mAh 1.5 Wh	与设备包装在一起 Packed with equipment
法规依据 Regulation According to	■ EEC Directive 93/112/EC ■ UN "Recommendations on the TRANSPORT OF DANGEROUS GOODS ■ 联合国<<关于危险品货物运输的建议书>> ■ IATA DGR 65th edition Effective 01-January-2024. Dangerous goods regulation, including package according with PI-965 section II or section 1B / PI-966 section II / PI-967 section II ■ 国际航空运输协会<<危险品规则(第 65 版)>, 包含包装符合 PI-965 section II or section 1B / PI-966 section II / PI-967 section II 相关要求。 ■ The package of battery should be complied with the requirements of 188 of IMDG (41-22) or the <<Recommendations On The Transport Of Dangerous Goods-Model Regulations>>			

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	国际海事组织-国际海运危险货物规则(第 41-22 正案) ■ All applicable carrier and government regulation. 货物运输业者要求及各地政府相关法规
Issue Date 签发日期	2024/06/21
Validity Date 有效日期	2024/06/21 to 2024/12/31

2. COMPOSITION INFORMATION (成分/组成信息)				
Part Name	Material	Substance	Cas number	Content (%)
LI-ION Battery	Cell	Graphite (C)	7782-42-5	12
		Copper (Cu)	7440-50-8	5
		Aluminium (Al)	7429-90-5	3
		Lithium cobaltate	12190-79-3	30
		Polyvinylidene fluoride	24937-79-9	1
		Styrene-butadiene rubber 1500	9003-55-8	5
		Nickel(Ni)	7440-02-0	4
		Lithium hexafluorophosphate	21324-40-3	3
		Cellulose CM	9000-11-7	1
		polyethylene	9002-88-4	5
		MISC., Not to Declare	Secret	31
USB-C CABLE	C2680	Copper (Cu)	7440-50-8	65
		MISC., Not to Declare	Secret	0.65
		Iron (Fe)	7439-89-6	34.35
	C7035	Nickel(Ni)	7440-02-0	2.2
		Magnesium (Mg)	7439-95-4	0.3
		Silicon (Si)	7440-21-3	1
		Copper (Cu)	7440-50-8	95.299
		Iron (Fe)	7439-89-6	0.2
		Lead (Pb)	7439-92-1	0.001
		Zinc (Zn)	7440-66-6	1

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	LCP	Glass, Glass Fiber	65997-17-3	30
		WANG RESIN	201058-08-4	55
		Tetraphenylporphyrin	917-23-7	14.2
		MISC., Not to Declare	Secret	0.8
	PBT	Polybutylene terephthalate (PBT)	26062-94-2	69.5
		Glass, Glass Fiber	65997-17-3	20
		2-Propenoic acid, 2-methyl-, 2-oxiranylmethyl ester, polymer with ethene and methyl 2-propenoate	51541-08-3	5
		CARBON BLACK	1333-86-4	5
		MISC., NOT TO DECLARE	Secret	0.5
	PP	Polypropylene (PP)	9003-07-0	100
	TPE	Hydrogenated styrene/butadiene copolymer	66070-58-4	35
		Polypropylene (PP)	9003-07-0	10
		Paraffin oil	8012-95-1	20
		Melamine Cyanurate	37640-57-6	30
		MISC., NOT TO DECLARE	Secret	5
	Ectoblast	Hydrogenated styrene/butadiene copolymer	66070-58-4	50
		Ethylene/propylene copolymer	9010-79-1	15
		Polypropylene (PP)	9003-07-0	29
		Calcium carbonate (CaCO ₃)	471-34-1	5
		Pentaerythritol tetrakis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate]	6683-19-8	1
	Iron shell	Iron (Fe)	7439-89-6	70.9395
		Nitroaniline	100-01-6	10
		Chromium (Cr)	7440-47-3	16
		MISC., NOT TO DECLARE	Secret	3.0605
	White PE	Polyethylene (PE)	9002-88-4	50
		Titanium dioxide (TiO ₂)	13463-67-7	50
	Red PE	Polyethylene (PE)	9002-88-4	35
		Titanium dioxide (TiO ₂)	13463-67-7	25
		C.I. Pigment Red 247	43035-18-3	40
	Green PE	Polyethylene (PE)	9002-88-4	50
		Copper phthalocyanine (CuN ₈ C ₃₂ H ₁₆)	147-14-8	5

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		Butanamide, 2,2'-(1,2-ethanediylbis(oxy-2,1-phenylene-2,1	77804-81-0	45
	Nylon wire	MISC., NOT TO DECLARE	Secret	1
		Polyethylene terephthalate (PET)	25038-59-9	99
		Ethylene Glycol	107-21-1	3
	Enamelled wire	Copper (Cu)	7440-50-8	95.5
		Polyurethane foam (PUR foam)	9009-54-5	4.5
	Tinned copper	Nickel(Ni)	7440-02-0	0.001
		Copper (Cu)	7440-50-8	98.72097
		Tin (Sn)	7440-31-5	1.2366
		Iron (Fe)	7439-89-6	0.001
		MISC., NOT TO DECLARE	Secret	0.04043
	Insulated wire skin	Polypropylene (PP)	9003-07-0	99.99
		MISC., NOT TO DECLARE	Secret	0.01
EARTIP TWIE	Black paste	CARBON BLACK	1333-86-4	30
		Siloxanes and Silicones, di-Me, hydroxy-terminated	70131-67-8	10
		Dimethyl, methylvinyl siloxane, dimethylvinyl-terminated	68083-18-1	60
	Blue paste	Ultramarine blue pigment	57455-37-5	30
		Siloxanes and Silicones, di-Me, hydroxy-terminated	70131-67-8	10
		Dimethyl, methylvinyl siloxane, dimethylvinyl-terminated	68083-18-1	60
	Ink	Cyclomethicone	69430-24-6	60
		Silicon dioxide (SiO ₂)	14808-60-7	10
		Kerosene	8008-20-6	30
	Rubbers	Silica amorphous (SiO ₂)	7631-86-9	40
		Poly(dimethylsiloxane); Silicone oil	63148-62-9	55
		Polymethylhydrosiloxane	63148-57-2	5
	White paste	Titanium dioxide (TiO ₂)	13463-67-7	30
		Siloxanes and Silicones, di-Me, hydroxy-terminated	70131-67-8	10
		Dimethyl, methylvinyl siloxane, dimethylvinyl-	68083-18-1	60

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		terminated		
	PA6-G30	NYLON 6	25038-54-4	67
		MISC., NOT TO DECLARE	Secret	33
	PA-50	Trimethoxyvinylsilaneforsynthesis	2768-02-7	57
		Isopropyl Alcohol	67-63-0	35
		PLATINUM CARBONYL CYCLOVINYLMETHYLSILOXANE COMPLEX	73018-55-0	8
	JHX-068	Ethyl Acetate	141-78-6	25
		NAPHTHA (PETROLEUM), HYDROTREATED LIGHT; LOW BOILING POINT HYDROGEN TREATED NAPHTHA	64742-49-0	75
	JHL-4	Cyclomethicone	69430-24-6	97
		MISC., NOT TO DECLARE	Secret	3
HOUSING UPPER	Pogo pin	Copper (Cu)	7440-50-8	68
		Cobalt (Co)	7440-48-4	0.15
		Gold (Au)	7440-57-5	0.05
		trans-Dichlorodiamminepalladium(II) 、 Palladium, diamminedichloro-, (SP-4-1)- 、 Diamminedichloropalladium	13782-33-7	31.8
	PC+ABS	Polycarbonate	25929-04-8	85
		Acrylonitrilebutadiene-styrene (ABS)	9003-56-9	10
		TRIPHENYL PHOSPHATE	115-86-6	0.3
		C.I. PIGMENT GREEN 7	1328-53-6	1
		CARBON BLACK	1333-86-4	1
		MISC., Not to Declare	Secret	2.7
COVER TOP	Ink	Acrylic Acid	79-10-7	37
		Titanium(IV) oxide	1317-80-2	28
		Cyclomethicone	69430-24-6	15
		Cyclohexanone	108-94-1	20
	PC+ABS	Poly(bisphenol-A carbonate)	111211-39-3	80
		Acrylonitrilebutadiene-styrene (ABS)	9003-56-9	11
		TRIPHENYL PHOSPHATE	115-86-6	0.1
		C.I. PIGMENT GREEN 7	1328-53-6	0.3

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		CARBON BLACK	1333-86-4	0.3
		MISC., NOT TO DECLARE	Secret	8.3
	UVBX9009 6	Ethyl Acetate	141-78-6	35
		Butyl Acetate	123-86-4	15
		Carbomer 910	9003-01-4	15
		Toluene	108-88-3	2
		Isobutyl Alcohol	78-83-1	5
		Butyl alcohol	71-36-3	7
		Xylene	1330-20-7	3
		Methyl ethyl ketone (C ₄ H ₈ O)	78-93-3	7
		ETHYLBENZENE	100-41-4	3
		Butyl Acetate	105-46-4	8
	UVCL0101 0X	Diisobutylketoneforsynthesis	108-83-8	60
		Methyl Isobutyl Ketone	108-10-1	20
		MISC., NOT TO DECLARE	Secret	10
		1-Hydroxycyclohexyl phenyl ketone	947-19-3	10
	UVCL0101 8X-H	Ethyl Acetate	141-78-6	40
		Butyl Acetate	123-86-4	25
		1-Hydroxycyclohexyl phenyl ketone	947-19-3	10
		1-[2-(2-prop-2-enoyloxypropoxy)propoxy]propan-2-yl prop-2-enoate	42978-66-5	15
		MISC., NOT TO DECLARE	Secret	10
	UVCL0101 9X	Isopropyl Alcohol	67-63-0	25
		Diisobutylketoneforsynthesis	108-83-8	10
		Ethylene Glycol Monobutylether	111-76-2	10
		Methyl ethyl ketone (C ₄ H ₈ O)	78-93-3	10
		Solvent naphtha (petroleum), medium aliph.	64742-88-7	10
		Methyl Isobutyl Ketone	108-10-1	10
		1-Hydroxycyclohexyl phenyl ketone	947-19-3	10
		MISC., NOT TO DECLARE	Secret	15
PCB Main Board	CCL	Copper (Cu)	7440-50-8	95
		MISC., Not to Declare	Secret	5
	PP	Glass, Glass Fiber	65997-17-3	55

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		EPOXY RESIN	Secret	25
		6H-Dibenz[c,e][1,2]oxaphosphorin 6-oxide	35948-25-5	20
	Copper Foil	Copper (Cu)	7440-50-8	99.93
		Zinc (Zn)	7440-66-6	0.04
		Chromium (Cr)	7440-47-3	0.01
		Nickel(Ni)	7440-02-0	0.02
	SOLEDR MASK	Acrylic resin	Secret	40
		Barium sulphate (BaSO4)	7727-43-7	32
		Magnesium Silicate Talc (Mg3H2(SiO3)4)	14807-96-6	5
		MISC., Not to Declare	Secret	5
		Dipropylene Glycol Methyl ether	34590-94-8	5
		2-(2-Ethoxyethoxy)ethylacetateforsynthesis	112-15-2	10
		Solvent naphtha (petroleum), heavy aromatic naphtha,...	64742-94-5	8
	MARKING INK	EPOXY RESIN	Secret	55
		Estasol	95481-62-2	20
		Barium sulphate (BaSO4)	7727-43-7	25
	Metals	Ammoniasolution25%extrapurePhEur,BP	1336-21-6	3
		EDTA Disodium Salt	6381-92-6	4.5
		Water, Deionize water	7732-18-5	92.5

3. HAZARDS IDENTIFICATION (主要危险性概述)

Explosive Risk 爆炸危险性	This article does not belong to the explosion dangerous goods. 该物品不属于爆炸危险品。
Flammable Risk 易燃危险性	This article does not belong to the flammable material. 该物品不属于易燃危险品。
Oxidation Risk 氧化危险性	This article does not belong to the oxidation dangerous goods. 该物品不属于氧化危险品。
Toxic Risk 毒害危险性	This article does not belong to the toxic dangerous goods. 该物品不属于毒害危险品。
Radioactive Risk 放射危险性	This article does not belong to the radiation dangerous goods. 该物品不属于放射危险品。
Mordant Risk 腐蚀危险性	This article does not belong to the mordant dangerous goods. 该物品不属于腐蚀危险品。

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Other Risk 其他危险性	This article includes containing rechargeable lithium ion Cell. 该物品内含锂电池。
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4. FIRST AID MEASURES (急救措施)

■ Eye 眼睛

使用大量的水冲洗至少 15 分钟，少量机会造成上下眼睑不适，请接受医疗照护。

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

■ Skin 皮肤

移除受污染的衣物并以大量的水冲洗皮肤或淋浴至少 15 分钟，请接受医疗照护。

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

■ Inhalation 吸入

立刻离开受污染区域并立即移置至有新鲜空气的区域，若可能请提供氧气照护。

Remove from exposure and move to fresh air immediately. Use oxygen if available.

■ Ingestion 吞食

给予两杯的牛奶或水并催吐，若人员已经无意识，请即刻呼叫医护人员。

Give at least 2 glasses of milk or water. Induce vomiting unless a patient is unconscious. Call a physician.

5. FIRE-FIGHTING MEASURES (消防措施)

■ Flash point (闪燃点): N/A

■ Auto-Ignition Temperature (自燃温度): N/A

■ Extinguishing Media(灭火方式): Water, CO₂. (水,二氧化碳)

■ Special Fire-Fighting Procedures (特殊灭火方式):

Self-contained breathing apparatus (提供人员灭火时之呼吸设备)

■ Unusual Fire and Explosion Hazard (特殊火灾或爆炸危险)

Cell may vent when subjected to excessive heating-exposing battery contents.

(高温下锂电池可能会泄漏排气)

■ Hazardous Combustion Products (危险燃烧物质)

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Carbon monoxide, carbon dioxide, lithium oxide fumes. (一氧化碳、二氧化碳、锂钴氧化物)

6. ACCIDENTAL RELEASE MEASURES (泄漏应急处理)

■ Steps to be taken in case Material is released or spilled (锂电池发生泄漏时的处理措施)

If the battery material is released. Remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gas. Wipe it up with a cloth and dispose of it in a plastic bag and put into a steel can. The preferred response is to leave the area and allow the battery to cool and vapors to disappear. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerate.

如果电池内化学物质泄漏，人员应立即撤离该区域直到空气中化学蒸气逸散。提供最大的空气流通以清除危险气体。受污染的衣物应立即移除并放置入塑料袋中，再放置于钢桶中。建议的反应措施为离开该区域并提供最大空气流通以允许化学蒸气逸散。避免皮肤或眼睛接触或吸入化学蒸气，用吸收剂清除逸出的液体并焚化。

7. HANDLING AND STORAGE (操作处置和储存)

■ HANDLING SPECIFIC SAFE HANDLING ADVICE: 安全建议

(1) Never throw out product in a fire or expose to high temperatures.

禁止投入火中或暴露于高温下。

(2) Do not soak product in water and sea-water unless emergency.

除非紧急状况，禁止投入火中或暴露于高温下。

(3) Do not expose to strong oxidizers. 禁止暴露于高强度的氧化剂旁。

(4) Do not give a strong mechanical shock or throw down. 禁止剧烈震动或落摔。

(5) Never disassemble, modify or deform. 禁止拆解、修改或破坏。

(6) Do not connect the positive terminal to the negative terminal with electrically conductive material. 禁止使用导电体接触正负极，造成短路。

■ STORAGE CONDITIONS (储存条件)

(1) Do not place the product near heating equipment, nor expose to direct sunlight for long periods. 禁止放置于热源旁，避免直接长时间太阳照射。

(2) Elevated temperatures can result in shortened battery cell life and degrade performance.

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Store in cool place(temperature:-20-45℃, humidity:45-75%).

高温可能造成电池寿命下降或影响其性能, 储存于适当环境 (温度:-20-45℃, 湿度 45-75%)

(3) Incompatible products: conductive materials, water, seawater, strong oxidizers and strong acids.

不兼容的产品: 导电材质、水、海水、强烈氧化物质及强烈的酸。

8. EXPOSURE CONTROLS/PERSONAL PROTECTION (接触控制/个人防护)

■ RESPIRATORY PROTECTION (呼吸防护)

In the case of battery venting, provide as much ventilation as possible. Respiratory protection is not necessary under normal use condition.

电池若泄漏, 须尽量保持环境通风。正常使用下无需特别的防护。

■ OTHER PROTECTION (其他防护)

Not necessary under normal use condition. 正常使用下无需特别的防护。

9. PHYSICAL AND CHEMICAL PROPERTIES (物理和化学特性)

■ Appearance: Solid.

外观: 固体

■ pH: Not Applicable.

酸碱值: 不适用

■ Flash point: Not Applicable.

闪燃点: 不适用

■ Density: Not Applicable.

密度: 不适用

■ Solubility: Not Applicable.

溶解度: 不适用

10. STABILITY AND REACTIVITY (稳定性和反应活性)

■ Stability: Product is stable under section 7.

稳定性: 产品在Section 7 适当储存条件下稳定

■ Conditions to avoid: Heat above 70℃ or higher. Deform, Modify, Crush, Disassemble, Short circuit, over charge.

避免条件: 超过70度以上, 变形、毁坏、改装、挤压、拆解、短路、过电压

■ Materials to avoid: Oxidizing agents, Acidic substance, water, conductive material.

避免材质: 高氧化性物质、酸性物质、水、导电物质

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- Hazardous decomposition products: N/A.

危险分解物质: 无

- Hazardous polymerization: N/A.

危险聚合物: 无

11. TOXICOLOGICAL INFORMATION (毒理性资料)

- Sign & Symptoms: In the event of exposure to internal contents, vapor fumes may be very irritating to the eyes and skin.

症状: 暴露于内容物或其化学蒸气中, 可能造成人员不适

- Inhalation: Lung irritant.

吸入: 肺部及呼吸道不适

- Skin Contact: Skin Irritant.

皮肤接触: 皮肤红肿

- Eyes Contact: Eyes Irritant.

眼睛接触: 眼睛不适

- Ingestion: Poisoning if swallowed.

如果吞咽可能造成中毒

12. ECOLOGICAL INFORMATION (生态学资料)

- Mammalian effects: Non known at present.

温室效应: 未知

- Eco-toxicity: Non Known at present.

生态毒性: 未知

- Bioaccumulation potential: Slowly bio-degradable.

生物累积: 缓慢的生物分解

- Environmental fate: None known environmental hazards at present.

环境层面: 未知

13. DISPOSAL CONSIDERATION (废弃处置)

Do not incinerate, or subject products to temperature exceed 70 °C. Such abuse can result in loss of seal leakage, and/or battery explosion. Dispose of in accordance with appropriate local regulations.

禁止焚烧或使产品温度超过70度C。此种滥用状况可能造成电池泄漏或爆炸, 请依当地适当法规处理丢弃

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14. TRANSPORT INFORMATION (运输信息)

When Lithium ion batteries' containing no more than 20Wh/cell, 100Wh/battery pack and meet the package requirement of PI 965 Section IB, PI 966/967 Section II can be treated as "Non-dangerous goods" under the United Nations Recommendations on the Transport of Dangerous Goods, provided that packaging is strong and prevent the products from short-circuit. With regard to air transport, the following regulations are cited and considered:

I) The International Civil Aviation Organization (ICAO) Technical Instructions (2023-2024 edition).

II) International Air Transport Association (IATA) Dangerous Goods Regulations (65th edition), package requirement: Section IB of PI965 and Section II of PI966~967.

III) The US Hazardous Materials Regulation (HMR) pursuant to a final rule issued by RSPA (Part 49 CFR Sections 100-185).

IV) The Office of Hazardous Materials Safety within the US Department of Transportation's (DOT) Research and Special Programs Administration(RSPA).

V) According with the UN38.3 (UNDOT) (the following has detailed description).

VI) The UN classification number: Class 9 3480/ Class 9 3481.

With regard to transport by sea, the following regulations are cited and considered:

I) According The United Nations dangerous goods of the proposal.

II) According to the International Maritime Dangerous Goods IMDG CODE(Amdt. 41-22)2022 Edition, packaging requirement is special provision 188.

III) According with the UN38.3 (UNDOT)

IV) The UN classification number: Class 9 3480/ Class 9 3481.

Our products are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation according to all the applicable international and national governmental regulations, not limited to the above mentioned. We further certify that the enclosed products have been tested and fulfilled the requirements and conditions in accordance with UN Recommendations (T1~T8) on the Transport of Dangerous Goods Model Regulations and Manual of the Testes and Criteria that can be treated as "Non-Dangerous Goods"

Manual of Test and Criteria(38.3 Lithium battery)

No.	Test Item	Test Results	Remark
T1	Altitude Simulation	Passed	
T2	Thermal Test	Passed	
T3	Vibration	Passed	
T4	Shock	Passed	
T5	External Short Circuit	Passed	
T6	Impact/Crush	Passed	for cell only

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T7	Overcharge	Passed	for pack only	
T8	Forced Discharge	Passed	for cell only	

15. REGULATION INFORMATION (法规信息)

- The transportation of the lithium batteries is regulated by nations "Model Regulations on Transport of Dangerous Goods".
- Lithium batteries and cells are subjected to shipping requirements exceptions under 49 CFR 173.185.
- Shipping of lithium batteries in aircrafts are regulated by the international civil aviation organization (ICAO) and the international air transport association (IATA) requirements in special provision UN3480 PI965, UN3481 PI966 or PI967.
- Shipping of lithium batteries on sea are regulated the international maritime dangerous goods (IMDG) requirements of UN3480.

16. OTHER INFORMATION (其他信息)

Ref No. BHC925_System_MSDS_2024_06.