

# 产品安全数据说明书

## MATERIAL SAFETY DATA SHEET

### 一、产品及公司信息 PRODUCT AND COMPANY IDENTIFICATION

产品名称：片式陶瓷电容器  
 Product Name：MULTI-LAYER CERAMIC CHIP CAPACITOR( MLCC)  
 企业名称：广东风华高新科技股份有限公司冠华片式陶瓷电容器分公司  
 Manufacture's Name:GuangDong Fenghua Advanced Technology(Holding)  
 CO.Ltd.,GuanHua MLCC Branch Company  
 地址：肇庆市风华路 18 号 风华电子工业园  
 Address: 18# Fenghua Road ZhaoQing City Guandong Province, PRC  
 邮编 Post Code：506020  
 电子邮件地址 E-mail：ghservice@china-fenghua.com  
 电话号码 Tel: 886-758-6923775  
 传真号码 Fax：0758-6923776  
 企业应急电话 Emergency Phonenumber：2865060  
 生效日期 Publication Date：2011-05-20  
 国家应急电话 Country emergency phone number：无 No

### 二、成分 /组成信息 COMPOSITION/INFORMATION ON INGREDIENTS

Component and weight%

银 /钯产品 PME Product			镍电极产品 BME Product		
构成材料 Component	含量 weight%	CAS NO.	构成材料 Component	含量 weight%	CAS NO.
瓷粉 Ceramic Powder	86.40%	12047-27-7	NFO系列瓷粉 (二氧化锆、氧化钙、)	60% 27.10%	1314-23-4 1305-78-8
			X7R系列瓷粉 (钛酸钡)	87.96%	12047-27-7
			Y5V系列瓷粉 (二氧化钛、氧化钡)	47.962% 40%	13463-67-7 1304-28-5
银 Ag	9.12%	7440-22-4	内电极镍 Ni	5.86~6.70%	7440-02-0
钯 Pd	1.60%	7440-05-3	外电极铜 Cu	2.59~3.27%	7440-50-8
镍 Ni	0.85%	7440-02-0	镀层镍 Ni	0.86%	7440-02-0
锡 Sn	2.03%	7440-31-5	镀层锡 Sn	2.07%	7440-31-5

注：以上数据以“0603”规格电容为例

Above data with "0603" specification capacitance for example.

### 三、危险性概述 HAZARD IDENTIFICATION

侵入途径 Hazard Class：无 No

食入健康危害 Adverse human health hazards：无 No

环境危害：该物质可能对环境有危害，应特别注意对土地的污染。

Environmental effects: May cause long-term adverse effects in the aquatic environment

燃爆危险 Flammable hazard：无爆炸危险 No。

### 四、急救措施 FIRST-AID MEASURES

如果吸入 Inhalation：无吸入危险 No inhalation hazard。

如果吞食：饮足量温水，催吐，就医

Ingestion：If victim is conscious let him drink enough water, press him to spue. Do not give an unconscious person anything to drink. Arrange for transport to the nearest medical facility for examination and treatment by a physician as soon as possible, or call for a doctor.

接触皮肤：用肥皂水及清水彻底冲洗皮肤

Skin contact: wash with soapy water or rinse with much water

接触眼睛：立即翻开上下眼睑，用流动清水或生理盐水冲洗至少 15min

Eye contact：Gently rinse the affected eyes under the eyelids, with clean water or physiological salt water for at least 15 minutes.

### 五、灭火措施 FIRE FIGHTING MEASURES

危险特性：高压或大容量产品充电后，人体接触容易产生放电。

Specific hazards: After high voltage and high capacitance products charged, It ' s easy to discharge if human body contact the products.

有害燃烧产物 Hazardous decomposition products in fire：无 No

灭火方法及灭火剂：干粉、水、砂土扑救。

Extinguishing method and media: Dry chemical powder, water or sand and earth.

### 六、应急处理、泄漏意外处理 ACCIDENTAL RELEASE MEASURES

应急处理：切断火源。迅速撤离泄漏污染区人员，并进行隔离，严格限制出入。建议应急处理人员戴防电手套。尽可能切断泄漏源。防止进入下水道、排洪沟等限制性空间。

Emergency procedure: Shut off all sources of ignition; Remove all the people from the

contaminated area immediately and keep the area separately, no people in and out. Wear proper protective equipment(i.e. electrostatic-proof gloves). Shut off all sources of release. Prevent discharge into the environment (sewers, river, soil, etc).

泄漏处理：尽可能用毛扫扫起收集至专用的容器内，回收或运至废物处理场所处理。

In case of release: sweep up, place in a special capacitor, and recycle or transport to waste disposal area.

## 七、安全储存管理及注意事项 HANDLING AND STORAGE

操作处置注意事项：加强通风。操作人员必须经过专门培训，严格遵守操作规程。建议接触高压或大容量产品的操作人员佩戴防电手套，接触其它产品时应戴白纱手套，以免污染产品。远离火种、热源、工作场所严禁吸烟。避免产品长时间暴露在空气中，防止与水接触。搬运时要轻装轻卸，防止包装及容器坏。

Handling: Use only in the well-ventilated areas. Handling operator must be trained very well and must obey the operation regulations. When touch high voltage products or high capacitance products, the operator must wear electrostatic-proof gloves. When touch other products, the operator must wear voile gloves to avoid any products contamination. Keep far away from sources of fire and heat, and no smoking in work site. Cannot keep the products exposed in air for long time, and prevent the products from touching water. Gentle handling to prevent packing bags or containers from being damaged.

储存注意事项：储存于阴凉、通风库房。远离火种、热源。仓温不宜超过 28℃，湿度不宜超过 80%。保持容器密封。应与氧化剂、水、化学品分开存放，切忌混储。储区应备有泄漏应急处理设备和合适的收容材料。

Storage: Keep the storage place shady and cool and well ventilated. Keep storage place far away from the sources of fire and heat. Keep storage place temperature lower than 28 degree C, humidity lower than 80%. Keep container tightly closed. Keep the products separately from oxidant, water and other chemical products, avoid by all means mix them. There must be accidental release facilities and proper collect container.

## 八、暴露控制及个人防护 EXPOSURE CONTROL/PERSONAL PROTECTIO

最高容许浓度 Authorized limit values：无 not applicable

监测方法 Inspection method：无 not applicable

工程控制 Engineering control：生产过程密闭，加强通风 Premises ventilation.

呼吸系统防护 Respiratory protection：无特别要求 no special requirement

眼睛防护 Eye protection：戴防护眼镜 wear eyeglass shield

身体防护 Body protection : 穿一般工作服 wear work clothes

手防护 : 戴防静电手套或白纱手套。

Hand protection: wear electrostatic gloves or voile gloves

其他防护 : 工作现场禁止吸烟、进食和饮水。工作前避免饮用酒精性饮料。工作后, 淋浴更衣。进行就业前和定期的体检。

Other protection: No smoking, no eating nor water drinking in work field. No drinking or alcohol drink before working. Shower and clothes-changing after work. Medical examination before employment and periodic medical examination.

## 九、物理及化学特征 PHYSICAL AND CHEMICAL PROPERTIES

物质状态 Physical state	气味 Odor	溶解性 Solubility in water	熔点 Melting point/range	沸点 Melting point/range
片状固体 sheet solid	无 Odor less	不溶于水 insoluble	无 Not applicable Relative density ( water=1 )	无 Not applicable Relative density (air=1)

Major application: For SMT circuit

## 十、稳定性和反应性 STABILITY AND REACTIVITY

稳定性 Stability : 稳定 stable

禁配物 No mixing with : 水、高压 water, high voltage

避免接触的条件 : 明火、高热、潮湿。

Conditions to avoid: fire, high temperature and high humidity

聚合危害 Aggregation hazards : 不能发生分解产物 : will not happen

## 十一、毒理学资料 TOXICOLOGICAL INFORMATION

急性毒性 Acute toxicity : 无 toxicosis: not applicable

急性中毒 Acute toxicosis : 无 not applicable ;

慢性中毒 Chronic toxicosis : 无 not applicable

刺激性 Pungent : 无 not applicable

亚急性和慢性毒性 Sub-acute and chronic toxicity : 无 not applicable

致突变性 Mutation : 无 not applicable

无致畸性 Monstrosity : 无 not applicable

致癌性 Carcinogenic: 无 not applicable

## 十二、生态学资料 ECOLOGICAL INFORMATION

生态毒理毒性 Biological toxicity : 无 not applicable

生物降解性 Biological decomposition : 无 not applicable

非生物降解性 Abiological Accumulation : 无 not applicable

### 十三、废弃处置 DISPOSAL CONSIDERATION

废弃物性质 Castoff: : 危险废物 hazardous waste.

废弃处置方法 : 交合格的处理商进行处理

Disposal method : Incinerating in a proper installation.

### 十四、运输信息 TRANSPORT INFORMATION

危险货物编号 Hazard number : 无 not applicable

UN编号 UN-number : 无 not applicable

包装标志 Packing Sign : 无 not applicable

包装方法 : 塑料袋、塑料盘、防静电盒或外加纸箱。

Packing method : plastic bag, plastic plate, electrostatic-proof box or paper box outside.

运输注意事项 : 夏季应早晚运输, 防止日光曝晒。运输按规定路线行驶。

Transportation: transport in the morning and evening in summer to avoid insolation.

Drive along the regulated road.

### 十五、法规资料 Regulations material

- 1 《关于在电气电子设备中限制使用某些有害物质指令 In electrical and electronic equipment on limit the use of certain hazardous substances in command》( **RoHS**),
- 2 《电子信息产品污染控制管理办法 Electronic information products pollution control management approach》
- 3 《电子信息产品中有毒有害物质的限量要求 Electronic information products in the poisonous and harmful material set limit to requirements》
- 4 《电子信息产品污染控制标识要求 Electronic information products pollution control marking requirements》
- 5 《电子信息产品中有毒有害物质的检测方法 Electronic information products in the poisonous and harmful material detection methods》

### 十六、其他资料 OTHER INFORMATION

缩写词解释 : CAS = 美国化学文摘检索服务号

备注 : 以上物质均符合 REACH SVHC 法律法规

### 十七、备注 NOTE

《国际航空运输危险品条例》第 4.2 节中说明双电层电容器的能量储存大于 0.3 瓦 (瓦小时) 被归类为 UN3499 产品。贴片电容器能量小于 0.3 瓦 (瓦小时) 所以不属于条例中第 4.2 节 UN3499 类产品, 故包装上无特殊注明。The international air transport of dangerous goods ordinance section 4.2 of the electric double layer capacitor energy storage is greater than 0.3 w (watt) are classified as UN3499 products. SMD capacitor energy is less than 0.3 w (watt) so do not belong to the regulations in section 4.2 UN3499 products, therefore, no special mark on the package.