



# 产品安全说明书

## PRODUCT SAFETY INFORMATION SHEET

### 一、物品及厂商资料 PRODUCT AND COMPANY IDENTIFICATION

化学品名称: RS、RA、RG 系列高频覆铜板  
 Trade name: RS、RA、RG Series High frequency copper clad laminate  
 化学品类别: 含氟聚合类  
 Chemical family: Polytetrafluoroethylene Composite  
 产品用途: 印刷线路板基材  
 Use of article: Printed Circuit Boards  
 制造商名称: 无锡睿龙新材料科技有限公司  
 Manufacturer name: Wuxi Relong New Material Technology Co.,Ltd  
 制造商地址: 江苏省无锡市滨湖区马山镇常康路 11 号  
 Manufacturer's address: NO.11 Chang Kang Road, Mashan Town, Binhu District, Wuxi, Jiangsu, China.  
 制造商应急电话: 0510-68578712-801 传真: 0510-68578717  
 Manufacturer emergency phone: 0510-68578712-801 Fax: 0510-68578717  
 参考文献: GB/T 16483, 化学品安全技术说明书  
 Bibliography: GB/T 16483, Safety data sheet for chemical products-Content and order of section.

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

组分名称 Chemical Name	CAS No.	EINECS/ELINCS	%
聚四氟乙烯 Polytetrafluoroethylene	9002-84-0	204-126-9	Varies
玻璃纤维布 Fiberglass	65997-17-3	266-046-0	Varies
熔融石英 Amorphous Silica	60676-86-0	262-373-8	Varies
陶瓷填料 Ceramic Filler(Nuisance Dust)	NA	NA	Varies
铜箔 Copper Foil (Dust)	7440-50-8	231-159-6	Varies

### 三、危害识别 HAZARDS IDENTIFICATION

材料分类: CLASSIFICATION OF THE MATERIAL: 无资料 NE  
 标签要求: LABELING REQUIREMENTS: 无资料 NE  
 过度暴露影响: EFFECTS OF OVEREXPOSURE: 正常处理不会产生。当切割或其他操作可能产生粉尘。超过分解温度下进行操作时可能会产生有毒烟雾。  
 None are expected with normal handling. Cutting and other finishing operations may create dust. Ventilation and personnel protection should be similar to all



operations generating nuisance dust. Processing material at temperatures exceeding decomposition temperature may release toxic fumes.

吸入: INHALATION:

灰尘可引起呼吸道刺激。暴露在铜尘或者 PTFE 分解产物下可能会引起肺部金属或者聚合物烟尘发热。此特点类似于流感症状（发热，寒战，肌肉疼痛）一般会持续 24h。

Dust may cause respiratory irritation. Remove to fresh air and seek medical attention if necessary. Exposure to copper fume or PTFE decomposition products may cause symptoms of metal of Polymer Fume Fever. This is characterized by flu like symptoms (fever, chills, muscle aches) that last 24hours.

眼睛接触:  
EYE CONTACT:

粉尘可能引起刺激。

Dust may cause irritation. Flush eyes with water and seek medical attention if necessary.

皮肤接触:  
SKIN CONTACT:

粉尘可能会引起刺激，用肥皂和水彻底清洗。

Dust may cause irritation. Wash thoroughly with soap and water.

摄入:  
INGESTION:

未知

None known.

慢性病:  
CHRONIC:

未知

NE

#### 四、急救措施 FIRST-AID MEASURES

吸入:  
INHALATION:

移至新鲜空气中。如果症状持续，请就医

Remove to fresh air. Obtain medical attention if symptoms persist.

眼睛接触:  
EYE CONTACT:

用大量水冲洗眼睛 15-20 分钟。如果症状持续请就医

Flush eyes with large amounts of water for 15 to 20 minutes. Obtain medical attention if symptoms persist.

皮肤接触:  
SKIN CONTACT:

用清水和肥皂水冲洗 15 到 20 分钟，不要抓或者挠。如果症状持续请就医。

Immediately take off all contaminated clothing and flush area with water for 15 to 20 minutes. Obtain medical attention if symptoms persist.

摄入:  
INGESTION:

请就医。

Please medical attention.

## 五、消防措施 FIRE-FIGHTING MEASURES

闪点:	无资料	爆炸极限: LEL 无, UEL 无
FLASH POINT:	NE °C (°F)	Flammable Limits: LEL <u>NA</u> UEL <u>NA</u>
自然温度:	无资料	
AUTOIGNITION TEMPERATURE:	NE °C (°F)	
灭火方法及灭火剂:	洒水√ 泡沫√ CO <sub>2</sub> √ 干粉√ 其他√ -	
EXTINGUISHING MEDIA:	Water Spray√ Foam√ CO <sub>2</sub> √ Dry Chemical√ Other√-	
闪点:	无资料	爆炸极限: LEL 无, UEL 无
灭火注意事项:	消防员需要配备自给式空气呼吸器和全身防护服。	
SPECIAL FIRE FIGHTING PROCEDURES:	Decomposition in a fire may produce toxic fumes. Firefighters should be equipped with self-contained breathing apparatus and turnout gear.	
有害燃烧产物:	未知.	
UNUSUAL FIRE AND EXPLOSION HAZARDS:	None known.	

## 六、泄漏应急措施 ACCIDENTAL RELEASE MEASURES

个人防护措施:	防止火灾中有害烟雾的扩散, 请佩戴合适的防护用品, 不要呼吸还有粉尘的空气。消除火源, 避免皮肤和眼睛接触。
PERSONAL PRECAUTIONS:	In case of fire, toxic fumes are emitted. Wear suitable protective equipment. Do not breathe dust. Eliminate sources of ignition. Avoid contact with skin and eyes.
环境预防措施:	避免进入地下水、地表水或者土壤
ENVIRONMENTAL PRECAUTIONS:	Prevent from entering sewer system, surface water, or soil.
清除方法:	扫或铲到合适的容器里处理。避免产生有害粉尘。
CLEANING METHODS:	Sweep or shovel into appropriate container for disposal. Avoid creation of nuisance dust.

## 七、操作处置与储存 HANDLING AND STORAGE

操作注意事项:	穿戴合适的防护设备, 参照第 8 部分。接触后用肥皂水和清水清洗双手。
HANDLING:	Wear suitable protective equipment, refer to Section 8. Wash hands with soap and water after contact.
储存注意事项:	保存在阴凉通风处。
STORAGE:	Keep in a cool, well-ventilated area.

## 八、接触控制/个体防护 EXPOSURE CONTROLS/PERSONAL PROTECTION

呼吸防护:	如果机械通风不充分不足以将现场接触的浓度维持在 2 部分中列出的范围内, 需要佩戴满足安全标准的呼吸器。
RESPIRATORY PROTECTION:	None needed under normal conditions. If material is heated and odors are noticeable and/or irritating a respirator meeting safety standard should be used. A qualified individual should evaluate each situation.

### 通风

### VENTILATION

局部:	建议会产生粉尘或者材料需要加热在 500oF 的条件下采取, 有粉尘产生的地方采取通风, 遵守好的工业卫生习惯。
LOCAL:	It is suggested that dust or materials should be heated under 500oF conditions, where dust is produced and ventilation is adopted, and good industrial hygiene practices are observed.

整体:	建议所有操作岗位执行
<b>GENERAL:</b>	<b>Recommended for all industrial operations.</b>
<u>个人防护</u>	
<b><u>PERSONAL PROTECTION</u></b>	
手部:	防切割手套
<b>HAND:</b>	<b>Gloves to avoid skin contact if desired.</b>
眼睛:	建议所有操作岗位佩戴有侧边的护目镜，不要佩戴隐形眼镜
<b>EYE:</b>	<b>Safety glasses with side-shields are recommended in all industrial operations</b>
	<b>None Required</b>
其他:	区域中配备洗眼器和淋浴.
<b>OTHER:</b>	<b>Safety shower/eyewash in the area.</b>

## 九、理化特性

外观:	覆铜板
<b>APPEARANCE:</b>	<b>Copper Clad Laminate</b>
气味:	无
<b>ODOR:</b>	<b>None</b>
物理状态:	固体
<b>PHYSICAL STATE:</b>	<b>Solid</b>
沸点(°C):	不适用
<b>BOILING POINT:</b>	<b>NA °C (°F)</b>
熔点(°C):	不适用
<b>MELTING POINT:</b>	<b>327 °C (°F)</b>
凝固点:	不适用
<b>FREEZING POINT:</b>	<b>NA °C (°F)</b>
闪点(°C):	不适用
<b>FLASH POINT:</b>	<b>NA °C (°F)</b>
溶解性:	不适用
<b>WATER SOLUBILITY:</b>	<b>In-Soluble</b>
蒸汽密度:	不适用
<b>VAPOR DENSITY:</b>	<b>NA</b>
饱和蒸气压(kPa):	不适用
<b>VAPOR PRESSURE:</b>	<b>NA</b>
相对密度:	不适用(Water = 1)
<b>SPECIFIC GRAVITY:</b>	<b>NA (Water = 1)</b>
分配系数:	不适用
<b>PARTITION COEFFICIENT:</b>	<b>NA</b>
蒸汽速率:	NA
<b>EVAPORATION RATE:</b>	<b>NA</b>
相对蒸汽密度:	不适用
<b>RELATIVE DENSITY:</b>	<b>NA</b>
粘度:	不适用
<b>VISCOSITY:</b>	<b>NA</b>
自燃温度:	不适用
<b>AUTO-IGNITION TEMPERATURE:</b>	<b>NA °C (°F)</b>

分解温度:	不适用
DECOMPOSITION TEMPERATURE:	NA °C (°F)
PH:	不适用
PH:	NA
易燃性:	不适用
FLAMMABILITY:	NA

## 十、稳定性和反应活性 STABILITY AND REACTIVITY

稳定性 √ 不稳定  
 STABLE √ UNSTABLE

PTFE 在高于 500 oF 下开始缓慢的分解，在高于 750 oF 下开始快速分解，因此不建议工艺在此情况下长期持续。

PTFE begins to decompose above 500°F and increases rapidly above 750°F. Processing at these temperatures for prolonged periods of time is not recommended.

避免接触的条件:  
 MATERIALS TO AVOID:

无资料

有害聚合:  
 HAZARDOUS POLYMERIZATION

可能会发生 不发生 √

May Occur Does Not Occur √

分解产物:  
 HAZARDOUS DECOMPOSITION

可以分解: 四氟乙烯, 六氟丙烯, 全氟异丁烯, 碳酰氟。

Decomposition may emit tetrafluoroethylene, hexafluoropropylene, perfluoroisobutylene, and carbonyl fluoride.

## 十一、毒理学资料 TOXICOLOGICAL INFORMATION

致癌性:  
 CARCINOGENIC STATUS:

玻璃纤维(连续长丝): IARC 第 3 组(未分类)。对人类致癌性)。

Fiberglass (continuous filament): IARC Group 3 (unclassifiable as to carcinogenicity to humans).

生殖危害:  
 REPRODUCTIVE HAZARDS:

不适用

NE

## 十二、生态学资料 ECOLOGICAL INFORMATION

生态毒性  
 ECOTOXICITY: 不适用  
 NE

## 十三、废弃处置 DISPOSAL CONSIDERATION

物理/化学性质在处理过程中的影响:  
 PHYSICAL/CHEMICAL PROPERTIES AFFECTING DISPOSAL: 不适用  
 NE

环境毒性:  
 ENVIRONMENTAL TOXICITY DATA: 不适用  
 NE

废弃处置方法:  
 WASTE DISPOSAL METHOD: 根据可适用的当地法规进行处置  
 Dispose of in accordance with local laws .

## 十四、运输信息 TRANSPORT INFORMATION

UN 编号:  
 UN NUMBER: 无规定  
 Not Regulated

包装类别:  
 PACKING GROUP: 无规定  
 Not Regulated

危险等级(ES):	无规定
HAZARD CLASS (ES):	Not Regulated
环境危害:	不适用
ENVIRONMENTAL HAZARDS:	NE

## 十五、法规信息 REGULATORY INFORMATION

### 国际法规:

#### INTERNATIONAL REGULATIONS:

中国 (IECSC)	豁免物质
China (IECSC)	Article - exempt
加拿大 (DSL/NDSL):	豁免物质
Canadian (DSL/NDSL):	Article - exempt
澳大利亚 (ACIS):	豁免物质
Australian (ACIS):	Article - exempt
韩国 (KECI):	豁免物质
Korea (KECI):	Article - exempt
日本 (ENCS, MITI):	豁免物质
Japan (ENCS, MITI):	Article - exempt
欧盟指示 2011/65/EC (RoHS):	不含任何故意添加 RoHS 指令所提到的物质
EU Directive 2011/65 / EC (RoHS):	It does not contain any intentional addition of the substances mentioned in the RoHS Directive

## 十六、其它信息 OTHER INFORMATION

NA = 不适用  
NA = Not Applicable  
NE = 未建立  
NE = Not Established  
NC = 未分类  
NC = Not Classified

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