

**Section 1: Material and Manufacturer information**

Product Name : Chip Resistor/Chip Resistor Array/Chip Resistor Network	
Part Number : Chip RTT&RTH&RTR&RTG&RTV&RTP/ Array RTA/ Network RTN	
Company Name : RALEC TECHNOLOGY (KUNSHAN) CO.,LTD	
Company Address : NO.333, HUANGPUJIANG ROAD,KUNSHAN,JS,CHINA	
Phone : 0512-57709898	Fax:0512-57709900

**Section 2: Identification Information of Hazardous**

Most Important Dangerous Effect	Dangerous Effect for Healthy : Inhalation : No likely to be inhaled due to physical form. Ingestion : May cause harm in digestive organs. Lead compounds may cause lead poisoning. Contact : Eye/Skin- No harm by contact.
	Environmental Effect: ---
	Dangerous of Physical and Chemical: It is combined by ion-bonds and stable substance, so there is no fire, flame, bomb dangerous and no chemical toxicological.
	Special Dangerous: ---
Main Symptom: ---	
Classified for Parts Dangerous: ---	

**Section 3: Identification Information of Composition**

## Pure Material :

Chinese and English Name: Chip Resistor/ Chip Resistor Array / Chip Resistor Network
Synonymy Name : Chip Resistor /Chip Resistor Array/Chip Resistor Network
Chemical Abstract Sequence ( CAS NO ) :- - -
Hazardous Material Composition : - - -

## Mixed Material :

Chemical Characteristic:				
Disassemble part	Chemical Ingredient	Chemical formula	CAS NO.	Proportion (Wt %)
Ceramic substrate	Aluminum	Al <sub>2</sub> O <sub>3</sub>	1344-28-1	73~94
G1 overcoat	Glass frit	Glass frit	65997-18-4	0.3~2
Top/Bottom conductor Side end (for chip array)	Silver and silver oxide	Ag	7440-22-4	0.5~6
Side end (for single chip)	Ni-Cr	Ni Cr	7440-02-0 7440-47-3	0.3~7
G2 overcoat / marking	Epoxy	Epoxy	25085-99-8	0.5~5
Resistive layer	Lead and Lead Compounds	PbO	1317-36-8	<0.5
	Ruthenium oxide	RuO <sub>2</sub>	12036-10-1	<0.5
Terminal plating (barrier layer)	Nickel	Ni	7440-02-0	<6
Terminal plating (outer layer)	Tin	Sn	7440-31-5	<6

**Section 4: First-aid Corrective**

Emergence method of different exposed path
Inhalation : No likely to be inhaled due to physical form.
Skin Contact: Go medical at once if the skin is irritability ◦ Normal operative aid for skin-cut.
Eye Contact : 1. Flush the irritated eyes with clean water at least 5 minutes. 2. Go medical at once.
Ingestion : 1. No any further ingestion while conscious-less. 2. Water rinse the mouth as if well conscious being.3.No any aid for vomit. 4. 240-300 ml water drinking. 5. Repeat gargling and drinking as if physical vomit. 6. CPR as if breathing halt. 7. Go medical at once.
The most important symptom and dangerous effect : ---
The protection for first-aid personnel : ---

**Section 5: Fire-Fighting Measures**

Suitable Fire-extinguisher : CO2 、 Dry fire-extinguisher 、 Water ◦
Encounter special dangerous when extinguishing fire: Burn-out brought conductive and smoke.
Special procedure for extinguisher : ---
Special protective equipment for fireman : Fireman should wear protective clothing and breathing apparatus ◦

**Section 6: Accidental Handling Method**

Attentive items for individual : None
Attentive items for environment : None
Clean Method : Sweep and gather up material and place in proper container for disposal or recovery.

**Section 7: Safety Handling and Storage Method**

Handling Storage : Store with no pollution and waterproof space.
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**Section 8: Expose and Chemical Properties**

Engineer Controls : A continuous supply of fresh air to the workplace.
Control Parameter : ---
Protective equipment for individual : Breathing protection-Wear dustproof mask Protection of hand-Wear gloves. Protection of Eye-Wear safety glasses 、 Washing utensil. Protection of skin and body-Safety shoe.
Hygiene Corrective : ---

**Section 9: Physical and Chemical Properties**

Substance form : Solid	Melting point/freezing point, volatilization rate, flammability (solid, gaseous) Partition coefficient: n-octanol/water
Shape : Slice(or fragile tiny bead)	Specific Gravity : None
Color : Silver and black	Fire-flash point : None
PH value : None	Solubility in water : Insoluble
Odor : None	Explosion boundary : None
Temperature of natural fire : ---	Temperature of decomposition : ---

**Section 10: Stability and Reactivity**

Stability : Generally stable
Probably dangerous reaction in special condition : ---
Avoidance condition : Heat 、 Flame 、 Humid 、 Water
Avoidance substance : Strong oxidizing agents 、 Acid

**Section 11: Toxicity Information**

Most toxicity : ---	Sensitive : ---
Chronic or prolonged toxicity : Lead could result in lead poison.	Special Effect : ---

**Section 12: Ecological Information**

Probably environmental effect/Environmental distribution: 1.No accumulation. 2. No effect with environment.
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**Section 13: Disposal Consideration**

Disposal method of waste: Recycling and production accord with the regulation of waste cleaning method.
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**Section 14: Delivery Information**

United Code : ---
Delivery rule in domestic : Compliance the delivery and storage rules of export processing zone.
Delivery method of special and attentive items : Delivery accord with the regulation of environmental protection.

**Section 15: Regulation Information**

Application regulation : Handling by relevant business rules of 「Cleaning method of waste」 .
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## Section 16: Other Information

Reference : ---	
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Date :	Jun. 17, 2017.
Remark :	Above symbol as"---" means no relevant information in current.

Above relevant information is correct, but sometimes there are some mistakes can't be avoided. Various values and data provided are for reference only. Users needed to adjust the application for each condition. If users didn't follow the rules appropriately that we wouldn't take the responsibility for the matter by the notification.