

# MATERIAL SAFETY DATA SHEET

Date : 2019.4.18

MSDS No.Y-EM-4-18-01A

## SECTION 1. -----PRODUCT IDENTIFICATION-----

Product name : Chip resistor (RC Series/YC Series /RE Series /TR Series/TC Series,etc.)

Manufacturer's name :

**YAGEO CORPORATION (Suzhou factory)**

Address : No.10, Zhu Yuan Rd., Suzhou New District, Suzhou, Jiangsu Province.

TEL: +86.512.6825.5568

FAX: +86.512.6809.0039

## SECTION 2. -----COMPOSITION/INFORMATION ON INGREDIENTS-----

| Part name           | Substance                      | substance in product wt% | CAS No     |
|---------------------|--------------------------------|--------------------------|------------|
| Ceramic Substrate   | Al <sub>2</sub> O <sub>3</sub> | 75.0~93.0                | 1344-28-1  |
|                     | SiO <sub>2</sub>               | 1.5~2.0                  | 14808-60-7 |
|                     | MgO                            | 1.5~2.0                  | 1309-48-4  |
| Inner electrode(C1) | Ag                             | 0.44~1.8                 | 7440-22-4  |
|                     | Pd                             | 0.007~0.04               | 7440-05-3  |
| Inner electrode(C2) | Ag                             | 0.18~2.3                 | 7440-22-4  |
| Resistive layer     | Ag                             | 0.02~0.3                 | 7440-22-4  |
|                     | RuO <sub>2</sub>               | 0.1~1.7                  | 12036-10-1 |
|                     | Glass contain Pb               | 0.02~0.50                | 65997-18-4 |
| Barrier layer       | Ni                             | 0.06~10                  | 7440-02-0  |
| Termination layer   | Sn                             | 0.06~5                   | 7440-31-5  |
| Glass layer         | Glass                          | 0.1~1.9                  | 65997-17-3 |
| Overcoat layer      | Epoxy resin                    | 0.2 ~3.2                 | 25068-38-6 |
| Marking             | Epoxy resin                    | 0~0.03                   | 25068-38-6 |

## SECTION 3. -----HAZARDS IDENTIFICATION-----

Hazardous product for human health if swallowed

## SECTION 4. -----FIRST-AID MEASURES-----

Main effect : Risk of stomachache

Eye contact : No irritation in human.

Yageo Electronics (China) Co., Ltd. No.10, Zhu Yuan Rd., Suzhou New District, Suzhou, Jiangsu Province 215011, P.R.C.

國巨電子(中國)有限公司江蘇省蘇州市新區竹園路 10 號

Innovative Service Around the Globe

**YAGEO**

Skin contact : No irritation in human.

Ingestion : If swallowed,urge to vomit,and take to hospital at once.

#### SECTION 5. -----FIRE FIGHTING MEASURES-----

Common extinguishing means : In case of fire in close proximity,all means of extinguishing are acceptable,e.g. foam,dry chemical, carbon dioxide,water.

Inappropriate extinguishing means : No restriction

Specific hazards : Non-combustible

Extinguishing instruction : Keep person removing from an upwind of fire.

#### SECTION 6. -----ACCIDENTAL RELEASE MEASURES-----

Sweep up, place in a bag and collect for waste disposal.

Prevent discharge into the environment(sewers,river,soil,- - -)

#### SECTION 7. -----HANDLING AND STORAGE-----

Handling : Keep storage place temperature from 15 to 35 degree C, humidity from 45 to 85% RH.

Storage : Keep in original packing , the above environment, and away from corrosive materials.

#### SECTION 8. -----EXPOSURE CONTROLS/PERSONAL PROTECTION-----

Engineering control : Premises ventilation

Authorized limit values : not applicable

Respiratory protection : not applicable

Hand protection : not applicable

Eye protection : not applicable

Skin protection : not applicable

Other precaution : not applicable

#### SECTION 9. -----PHYSICAL AND CHEMICAL PROPERTIES-----

Physical state : solid

Appearance : square/Black-Gray

colors Order : none

PH value : not applicable

Decomposition temperature : not applicable

Flash point : not applicable

Boiling point : not applicable

Melting point : >1600°C

Flammable limits(LEL) : not applicable

Flammable limits(UEL) : not applicable

#### SECTION 10. -----STABILITY AND REACTIVITY-----

Stability : stable on normal temperature and pressure

Condition to avoid : high temperature and

humidity Hazardous reaction with : not applicable

Hazardous decomposition products : not applicable

#### SECTION 11. -----TOXICOLOGICAL INFORMATION-----

Acute effects : not applicable

Toxicity : not traceable

#### SECTION 12. -----ECOLOGICAL INFORMATION-----

Biological oxygen demand : not applicable

Chemical oxygen demand : not applicable

Biological /Chemical oxygen demand ratio : not applicable

Biochemical factor : not applicable

Ecotoxicity : not applicable

#### SECTION 13. -----DISPOSAL CONSIDERATIONS-----

Installed or dump in a incinerator equipped in accordance with all federal, state ,  
local and national environmental regulations.

#### SECTION 14. -----TRANSPORT INFORMATION-----

No classification assigned.

Not subject to Transport-regulation Dangerous Substances under IATA Dangerous  
Goods Regulations.

#### SECTION 15. -----REGULATORY INFORMATION-----

Designation according to EUWEEE/ROHS and Local regulations.

No classification assigned.

#### SECTION 16. -----OTHER INFORMATION-----

These data are based on our present knowledge. However, they shall not constitute a

uarantee for any specific product feature and shall not establish a legally  
valid contractual relationship.

Date of latest MSDS version : Apr.2019

Person responsible for MSDS :

Administrator: Eris Chen

Department:PED.Dep

Yageo Electronics (China) Co., Ltd

No.10, Zhu Yuan Rd., Suzhou New District, Suzhou,Jiangsu Province.