

SAFETY DATA SHEET

No. R-180110-001

Date : Jan 10, 2018

SECTION 1. - - - - - CHEMICAL IDENTIFICATION - - - - -

Product name: MLCC (Multi-Layer Ceramic Capacitor)

Product code: **NPO, X7R, X5R, Y5V SERIES**

Manufacturer's name : Yageo Corporation Nantze Branch

Address : No.16, West 3rd St, N.E.P.Z., Kaohsiung 81170, Taiwan,R.O.C.

TEL: 886-7-9618999

FAX :886-7-9616898

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

NPO(NME) SERIES

	Material	wt%	CAS No
Ceramic substrate	TiO ₂	88-93	13463-67-7
	Others	0.8-1.0	-
Inner electrode	Silver	2.0-7.5	7440-22-4
	Palladium	0.25-2.8	7440-05-3
Termination electrode	Silver	2.2-21	7440-22-4
Under plating	Nickel	0.2-3	7440-02-0
Surface plating	Tin	0.65-6	7440-31-5

NPO SERIES

	Material	wt%	CAS No
Ceramic substrate	CaZrO ₃	64-90	12013-47-7
Inner electrode	Nickel	3.2-8.4	7440-02-0
Termination electrode	Copper	4.3-19.8	7440-50-8
Under plating	Nickel	0.4-2	7440-02-0
Surface plating	Tin	1.2-6.5	7440-31-5

X7R / X5R SERIES

	Material	wt%	CAS No
Ceramic substrate	BaTiO ₃	45-94	12047-27-7
Inner electrode	Nickel	1.6-13.8	7440-02-0
Termination electrode	Copper	2.95-25.5	7440-50-8
Under plating	Nickel	0.075-5.5	7440-02-0
Surface plating	Tin	0.26-19	7440-31-5

Y5V SERIES

	Material	wt%	CAS No
Ceramic substrate	BaTiO ₃	45-85	12047-27-7
Inner electrode	Nickel	7.3-13.8	7440-02-0
Under plating	Copper	4.1-18.5	7440-50-8
Termination plating	Nickel	0.11-7.5	7440-02-0
Surface plating	Tin	0.4-18.5	7440-31-5

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.

Skin contact : No irritation in human.

Ingestion : If swallowed, wash out mouth with water provided person is conscious.

First aid : Consult with a physician in all cases.and take to hospital.

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 if temperature is lower than 1200 degree C.

Protective measure in case of intervention : The product does not require any apecial precaution

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 in a above environment , and original packing ,closed to be free of chlorine and bromide material contaminant .

Storage : Keep storage place temperature from 20 to 40 degree C,humidity from 45 to 75% RH .

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 : Gray brown / Silver metal
Order : None
PH value : Not applicable
Decomposition temperature : Not applicable
Flash point : Not applicable
Boiling point : Not applicable
Melting point : About 1200 degree C
Flammable limits(LEL) : Not applicable
Flammable limits(UEL) : Not applicable
The energy storage capacity of watt-hours equal or less than 0.3Wh

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 Sony SS-00259 ,EU WEEE/ROHS and customer 's related standard.
No classification assigned.

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

Yageo Corporation Nantze Branch No.16, West 3rd St, N.E.P.Z., Kaohsiung 81170, Taiwan
www.yageo.com
page: 3/4



These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product feature and shall not establish a legally valid contractual relationship.

Person responsible for SDS :

E-mail address: GP_service@yageo.com

Yageo Corporation Nantze Branch

No.16, West 3rd St, N.E.P.Z., Kaohsiung 81170,

Taiwan, R.O.C

TEL: 886-7-9618999

FAX: 886-7-9616898