



MATERIAL SAFETY DATA SHEET

No.R-100317-001

Date : January 22,2010

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: 886-7-3614101

FAX :886-7-9616898

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

NPO SERIES

	Material	wt%	CAS No
Ceramic	TiO ₂	88-92.5	13463-67-7
Inner electrode	Silver	3.9-7.1	7440-22-4
	Palladium	0.4-0.8	7440-05-3
Termination electrode	Silver	2.2-2.9	7440-22-4
Plating	Nickle	0.2-0.3	7440-02-0
	Tin	0.65-0.8	7440-31-5

NPO BME SERIES

	Material	wt%	CAS No
Ceramic	BaTiO ₃	67-87	12047-27-7
Inner electrode	Nickle	3.2-8.4	7440-02-0
Termination electrode	Copper	4.3-19.3	7440-50-8
Plating	Nickle	0.4-1.9	7440-02-0
	Tin	1.2-5.6	7440-31-5

X7R / X5R SERIES

	Material	wt%	CAS No
Ceramic	BaTiO ₃	46.2-94	12047-27-7
Inner electrode	Nickle	1.6-12.8	7440-02-0
Termination electrode	Copper	2.95-24.5	7440-50-8
Plating	Nickle	0.075-5	7440-02-0
	Tin	0.26-17.95	7440-31-5



Y5V SERIES

	Material	wt%	CAS No
Ceramic	BaTiO3	73.2-85	12047-27-7
Inner electrode	Nickle	7.3-12.4	7440-02-0
Termination electrode	Copper	4.1-17.4	7440-50-8
Plating	Nickle	0.11-0.5	7440-02-0
	Tin	0.4-1.65	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 apcial 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

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 -----

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 MSDS :

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