

Panasonic Communications Co., Ltd.
Office Network Company

9-1 Hiraide Industrial Park, Utsunomiya City, Tochigi, 321-8502 Japan
TEL : Japan (0) 28-663-3285, FAX : Japan (0) 28-663-2398

Material Safety Data Sheet

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MSDS No.: 021-000589

Date : 28 June, 2005

**SECTION 1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION
AND OF THE COMPANY/UNDERTAKING**

PRODUCT NAME : DEVELOPER(BLACK) for Panasonic Digital Color Imaging System, Model DP-C322, DP-C322F, DP-C262 and DP-C262F

PRODUCT No. : DQ-ZN480K, PJIJC0001ZA

CONTACT : Panasonic Testing Center
Winsberggring 15 / 22525 Hamburg Germany
Tel: +49-(0)40-85383-590

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS	CAS #	PROPORTION (% by wt.)	EC #	SYMBOLS	R PHRASE
Mn-Mg-Sr ferrite powder		90 - 99		None	None
Styrene/butylacrylate copolymer		1 - 10		None	None
Polyethylene		< 1		None	None
Polyethylene		< 1		None	None
Carbon Black	1333-86-4	< 1	215-609-9	None	None

SECTION 3 HAZARDOUS IDENTIFICATION

ADVERSE HUMAN HEALTH EFFECTS :

There are no significant hazards associated with this Product.

PHYSICAL AND CHEMICAL HAZARDS :

There are no significant hazards associated with this Product.

ENVIRONMENTAL EFFECTS :

There are no significant hazards associated with this Product.

SECTION 4 FIRST AID MEASURES

EYE CONTACT : Flush with a large amount of water for at least 15 minutes. Seek medical advice.

SKIN CONTACT : Wash with soap and water.

INGESTION : Rinse mouth with Water. Give several glasses of water to drink and seek medical advice.

INHALATION : Remove from exposure and provide fresh air. Rinse mouth with water.

SECTION 5 FIRE FIGHTING MEASURES

SPECIFIC METHOD : In case of fire use extinguishing media. When in a machine, treat as an electrical fire.

EXTINGUISHING MEDIA : Water spray, Foam, Dry, chemicals, CO₂

SECTION 6 ACCIDENTIAL RELEASE MEASURES

Shut off ignition sources. For small spills, sweep up or soak up with damp Cloth.
For large spills, wear proper protective equipment and place waste material in closed container.
Dispose of in accordance with national and local regulations.

SECTION 7 HANDLING AND STORAGE

HANDLING : Do not incinerate toner or a toner cartridge. Do not disassemble a cartridge.
STORAGE : Keep in cool, and dry and well-ventilated area. Keep out of reach of children.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

CONTROL PARAMETER ACGIH TLV(2004) : 10mg/m³(Total)
3mg/m³(Respirable)

PRECAUTIONARY MEASURES :

None required when used as intended in PCC equipment.
For use other than normal customer operating procedures (such as in bulk toner processing facilities), local exhaust ventilation may be required.

PERSONAL PROTECTIVE EQUIPMENT :

None required when used as intended in PCC equipment.
For use other than normal customer operating procedures (such as in bulk toner processing facilities), protective glove, goggles and respirators may be required.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/ODOR : Black powder/Faint Odor
BOILING POINT : Not applicable
Volatile(%) : Not applicable
SPECIFIC GRAVITY (H₂O=1) : Not available
SOLUBILITY IN WATER : Negligible
VAPOUR PRESSURE : Not applicable
SOFTENING POINT : Not available
INITIAL BOILING POINT : Not applicable
OTHER DATA : None

SECTION 10 STABILITY AND REACTIVITY

FLASH POINT : Not applicable
EXPLOSION LIMIT : Not applicable
FLAMMABILITY : Not flammable under conditions of use
SPONTANEOUS COMBUSTIBILITY/ REACTIVITY WITH WATER : None
SELF-REACTIVITY/EXPLOSIVE : None
DUST EXPLOSIVE : Like most organic materials in powder form, it can form explosive mixtures when dispersed in air.
STABILITY AND REACTIVITY : Stable
AUTO-IGNITION TEMPERATURE : Not applicable
OTHER DATA : None

SECTION 11 TOXICOLOGICAL INFORMATION

SKIN CORROSIVE : None
SKIN IRRITANT(RABBIT) : Not an irritant¹⁾
EYE IRRITANT(RABBIT) : Not an irritant¹⁾
HUMAN PATCH : Not available
SENSITIZATION : Skin(guinea-pig) : Not a sensitizer¹⁾
ACUTE TOXICITY : Swallowed : LD50(rat) : >5000mg/kg¹⁾
(practically non-toxic)
Skin : LD50(rabbit) : >5000mg/kg¹⁾
(practically non-toxic)
Inhaled : LC50(rat) : >4.1mg/L/4hr
(practically non-toxic)

CHRONIC TOXICITY :

The results obtained from a PCC sponsored, Chronic Toner Inhalation Study, demonstrated no lung change in rats for the lowest (1mg/m³) exposure level (i.e. the level most relevant to potential human exposure). A very slight degree of fibrosis was noted in 25% of the animals at the middle(4mg/m³)exposure level, while a slight degree of fibrosis was noted in all the animals at the highest(16mg/m³)exposure level. These findings are attributed to "lung overloading", a generic response to excessive amounts of any dust retained in the lungs for prolonged period. This study was conducted using a special test toner to comply with EPA testing protocol.

The test toner was ten times more respirable than commercially available PCC toner, and would not be functionally suitable for PCC equipment.¹⁾

CARCINOGENICITY : Carbon Black is classified as "Group2B (possibly carcinogenic to humans)" by IARC. But we obtained the results from a Chronic Toner Inhalation Study, that commercially available PCC toner has no evidence of human carcinogens. All other ingredients are not classified as "Carcinogens^{ref.1}".

MUTAGENICITY : Ames Assay: Negative

REPRODUCTION AND DEVELOPMENT :

Not classified as "Reproductive and Development Chemicals^{ref.2}".

1) This information is based on toxicity data for similar materials and ingredients.

SECTION 12 ECOLOGICAL INFORMATION

BIODEGRADABILITY : Not available.
BIOACCUMULATION : Not available.
ACUTE TOXICITY : 96hours LC50 : >500mg/L¹⁾ (practically non-toxic)
48hours EC50(daphnia):>100mg/L¹⁾ (practically non-toxic)
OTHER INFORMATION : None

1) This information is based on toxicity data for similar materials and ingredients.

SECTION 13 DISPOSAL CONSIDERATION

Dispose of in accordance with national and local regulations.

SECTION 14 TRANSPORT INFORMATION

Transport in accordance with national, and local regulations.

SECTION 15 REGULATORY INFORMATION

CLASSIFICATION and LABELLING ACCORDING TO EU DIRECTIVES:

CLASSIFICATION: Not classified as hazardous.

SECTION 16 OTHER INFORMATION

The above mentioned data correspond to our present state of knowledge and experience, but no warranty is made. Users should consider these data only as a supplement to other information and must make independent determination of the suitability and completeness of information from all sources to ensure proper use and disposal of the materials and safety and health of employees and customers.

REFERENCES

- 1: ◆ IARC Monographs on the Evaluation Carcinogenic Risks to Humans(WHO. International Agency for Research on Cancer)
 - ◆ National Toxicology Program(NTP)Report on Carcinogens(NTP)
 - ◆ TLVs and BEIs (American Conference of Governmental Industrial Hygienists)
 - ◆ Council Directive 67/548/EEC on the approximation of the laws, regulations, and administratives provisions relating to the classification, packing and labelling of dangerous substances;Annex1(EU)
 - ◆ Journal of Occupational Health(Japan Society for Occupational Health)

 - 2: ◆ Council Directive 67/548/EEC on the approximation of the laws, regulations, and administratives provisions relating to classification, packing and labelling of dangerous substaces; Annex1(EU)
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