Material Safety Data Sheet

Toner Type : OKT5C, OKT5M, OKT5Y, OKT5K

For Models :

C911 / ES9411
C931 / ES9431
C941 / ES9541

Oki Data Corporation

SECTION 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Identifier:

Product Name: OKT5C Toner

Product Code:

Relevant Identified Uses and Uses Advised Against : Toner for electrophotographic apparatus

Manufacturer: Mitsubishi Chemical Corporation

Address: 1-1, Marunouchi 1-Chome, Chiyoda-ku Tokyo 100-8251, Japan

Details of Supplier of Safety Data Sheet:

Supplier: Mitsubishi Chemical Corporation

Address: 1-1, Marunouchi 1-Chome, Chiyoda-ku Tokyo 100-8251, Japan

Telephone Number: +81-3-6748-7138

E-mail Address: -

Emergency Telephone Number: +81-3-6748-7138 (9AM-5:45PM, Monday through Friday)

SECTION 2 HAZARDS IDENTIFICATION

Emergency Overview: This product is not classified as dangerous according to the latest adaptations of EU Directive 1999/45/EC or 67/548/EEC.
Appearance and odor: Fine blue powder, slight plastic odor.

US Regulatory Status: Hazardous under OSHA HCS.

US Label Elements:

Signal Word: Not required

Hazard Warning: Not required

Safety Advice: Not required

Hazardous Component: Titanium dioxide is listed as IARC Group 2B, but its labeling is not required by OSHA HCS.

EU Classification: Not classified as dangerous.

EU Label Elements:

Symbol & Indication: Not required

R-Phrase: Not required

S-Phrase: Not required

Dangerous Component: Not required

Applicable Label Elements in accordance with Annex V to 1999/45/EC: Not applicable

Authorisation # under (EC) No 1907/2006: None

Other Hazards: Fine and explosion hazard:
This product, like most organic powders, can cause a dust explosion if particles form thick clouds.

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Substance or Mixture: Mixture

Ingredient(s):

Chemical Name/ Generic Name	CAS#	EC#/ Registration#	Concentration/ Concentration Range (%)	EU Classification according to 67/548/EEC		EU Classification according to (EC) No 1272/2008	
				Symbol/ Indication of Danger	R-Phrase*[1]	Hazard Class/ Category Code	Hazard Statement*[1]
Styrene acrylate copolymer	Confidential	Not applicable	80-90	None	None	None	None
Wax	Confidential	Confidential	5-15	None	None	None	None
Blue pigment	Confidential	Confidential	3-10	None	None	None	None
Amorphous Silica	7631-86-9	231-545-4	1-3	None	None	None	None
Titanium dioxide	13463-67-7	236-675-5	0.1-0.9	None	None	None	None

*1. Full texts of R-phrase(s) and Hazard statement(s) are listed in SECTION 16

Carcinogen(s):

Chemical Name:	CAS#:	Reference:
Titanium dioxide	13463-67-7	IARC Group 2B (possibly carcinogenic to humans)

PBT Substance(s) and vPvB Substance(s):

Chemical Name:	CAS#:	Category:
None		

Substance(s) listed in Candidate List of SVHC:

Chemical Name:	CAS#:	Category:
None		

SECTION 4 FIRST AID MEASURES

First Aid Measures:

Inhalation: Provide fresh air immediately. If symptoms occur, seek medical advice.

Ingestion: Clean mouth out with water. Drink several glasses of water. If sickness develops, seek medical advice.

Skin: Wash out particles with plenty of water and soap. If irritation develops, seek medical advice.

Eye: Do not rub eyes. Immediately rinse with plenty of clean running water until particles are washed out. If irritation persists, seek medical advice.

Most Important Symptoms and Effects, both Acute and Delayed:

Inhalation: Exposure to excessive amounts of dust may cause physical irritation to respiratory tract.

Ingestion: Practically non-toxic. Ingestion is a minor route of entry for intended use of this product.

Skin : May be non-irritant.

Eye:	May be non-irritant.
Chronic Effects:	Prolonged inhalation of excessive amounts of dust may cause lung damage. Use of this product as intended dose not result in inhalation of excessive amounts of dust.
Medical Conditions Generally known to be Aggravated by Exposure:	Not known.
Indication of Any Immediate Medical Attention and Special Treatment Needed:	None

SECTION 5 FIRE FIGHTING MEASURES

Extinguishing Media:

Suitable Extinguishing Media:	Carbon dioxide, water, form, dry chemical
Unsuitable Extinguishing Media:	None
Special Hazards:	It may form explosive dust-air mixtures when finely dispersed in air.
Hazardous Combustion Products:	Toner, like most organic powders, is capable of creating a dust explosion when particles are dispersed. Carbon monoxide and carbon dioxide are hazardous resulting gases.
Advice for Fire-fighters:	Wear gloves, glasses and a mask if necessary.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:	Avoid dust formation. Do not breathe dust. Wear personal protective equipment as described in Section 8.
Environmental Precautions:	Do not discharge into drains.
Methods and Material for Containment and Cleaning Up:	Eliminate source of ignition and flammables. Vacuum or sweep the material into a sealed container. If a vacuum cleaner is used, it must be dust explosion-proof. Dispose of the material in accordance with Federal/state/local requirements.
Reference to Other Sections:	Refer to section 13.

SECTION 7 HANDLING AND STORAGE

Precautions for Safe Handling:	Keep out of reach of children. Avoid dust formation. Handle in adequately ventilated areas. Do not breathe dust. Do not get in eyes or on skin. Keep away from excessive heat and sources of ignition such as sparks and open flames. Ensure all the equipment is electrically earthed/grounded before beginning operation.
Conditions for Safe Storage, Including Any Incompatibilities:	Keep out of reach of children. Keep container closed and store at room temperature. Keep away from excessive heat and sources of ignition. Do not store with strong oxidizers.
Specific End Uses:	This product is a toner used in printers/copiers.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters:

Product:	USA OSHA PEL	ACGIH TLV	EU OEL	DFG MAK
toner	Total dust: 15mg/m3 Respirable fraction: 5mg/m3	Inhalable particulate: 10mg/m3 Respirable particulate: 3mg.m3	Not established	Inhalable fraction: 4mg/m3 Respirable fraction: 1.5mg/m3

Ingredient(s):	USA OSHA PEL	ACGIH TLV	EU OEL	DFG MAK
Amorphous silica	20mppcf* or 80/%Sio2 mg/m3 (* million particles per cubic foot)	Not listed	Not established	Inhalable fraction: 4mg/m3
Titanium dioxide	Total dust: 15mg/m3	10mg/m3	Not established	Not established

Exposure Controls:

Engineering Controls: No special ventilation equipment needed under intended use of this product. But, ventilation equipment is necessary in case of dust formation.

DNEL(s): Not available

PNEC(s): Not available

Individual Protection Measures:

Eye/Face Protection: ☐ **Required** ■ **Not Required** Personal protective equipments (gloves) are recommended when handling this product in large quantities.

Skin Protection: ☐ **Required** ■ **Not Required** Personal protective equipments (glasses) are recommended when handling this product in large quantities.

Respiratory Protection: ☐ **Required** ■ **Not Required** Personal protective equipments (mask) are recommended when handling this product in large quantities.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties:

Appearance: Fine blue powder

Odor: None or slight plastic-like odor

pH: Not applicable

Melting Point/Freezing Point (°C): Not applicable

Initial Boiling Point and Boiling Range (°C): Not applicable

Flash Point (°C): Not applicable

Evaporation Rate: Not applicable

Flammability: No data available

Upper/Lower Flammable or Explosive Limits: Not applicable

Vapor Pressure: Not applicable

Vapor Density: Not applicable

Relative Density:	About 1.2g/ cm3
Water Solubility:	Negligible
Fat Solubility:	Partially soluble in toluene and THF
Partition Coefficient (n-Octanol/Water):	Not applicable
Auto-ignition Temperature (°C):	Not available
Decomposition Temperature (°C):	> 200
Viscosity (mPa s):	Not applicable
Explosive Properties:	It may form explosive dust-air mixtures when finely dispersed in air.
Oxidizing Properties:	Not available
Other Information:	Not available

SECTION 10 STABILITY AND REACTIVITY

Reactivity:	No hazardous polymerization will occur.
Chemical Stability:	■ **Stable** □ **Unstable**
Possibility of Hazardous Reactions:	None
Conditions to Avoid:	Excessive heat, Dust formation
Incompatible Materials:	Strong oxidizers, which could vigorously oxidize organic materials in this mixture and case a fire in an extreme case.
Hazardous Decomposition Products:	Carbon monoxide and carbon dioxide when combusted.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on Toxicological Effects:

Acute Toxicity:

Inhalation:	No test data available
Ingestion:	No test data available
Skin:	No test data available

Corrosivity/Irritation:

Skin:	No test data available
Eye:	No test data available

Sensitization:

Skin:	No test data available

Repeated Dose Toxicity:

No test data available.
In a study in rats of chronic inhalation exposure to a typical toner, a mild to moderate degree of lung fibrosis was observed in 92%of the rats in the high concentration (16mg/m3) exposure group. And a minimal to mild degree of fibrosis was noted in 22% of the animals in the middle (4mg/ m3) exposure group. But no pulmonary change was reported in the lowest (1mg/ m3) exposure group, the most relevant level to potential human exposures. (Muhle et al.)
The quantity of toner exhausted with the normal use of this product is estimated less than 1mg/m3 per day.

Carcinogenicity:	No test data available. IARC has issued a notice that they will publish a monograph that lists titanium dioxide (TiO2) as possibly carcinogenic to humans (Group 2B) by inhalation (based solely on animal data). Human epidemiology studies do not suggest an increased risk of cancer in humans for occupational exposure to titanium dioxide. IARC stated that exposure levels are assumed to be lower in the user industries, with the possible exception of workers who handle large quantities of titanium dioxide. No significant exposure to titanium dioxide is thought to occur during the use of products in which titanium dioxide is bound to other materials, such as in paints. [3)]
Mutagenicity:	Based on the result of Ames test (Salmonella typhimurium TA98,TA100,TA1535,TA1537, E.coli WP2 uvrA), this product has negative mutagenicity. [1)]
Toxicity for Reproduction:	No test data available
Other Information:	Not available
Toxicokinetics, Metabolism and Distribution:	Not available

SECTION 12 ECOLOGICAL INFORMATION

Toxicity:	No data available
Persistence and Degradability:	No data available
Bioaccumulative Potential:	No data available
Mobility in Soil:	No data available
Results of PBT and vPvB Assessment:	No results that the component(s) of this product meet(s) the PBT or vPvB criteria under Regulation (EC) No 1907/2006.
Other Adverse Effects:	No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Waste Treatment Methods:	Waste material may be dumped or incinerated on condition that meets all country, state and local environmental regulations. Recommendation: Consult with the disposal agency and the relevant authorities; cleansing agent is water.

SECTION 14 TRANSPORT INFORMATION

UN Number:	None
UN Proper Shipping Name:	None
Transport Hazard Class:	None
Packing Group:	None
Environmental Hazards:	None
Special Precautions for User:	None
Transport in Bulk according to Annex II of MARPOL 73/78 and IBC Code:	Not applicable

SECTION 15 REGULATORY INFORMATION

US Information:

SARA Title III, 313:

Chemical Name:	**Wt%:**
None	

California Proposition 65:

Chemical Name:	**Wt%:**
None	

EU Information:

Safety, Health and Environmental Regulations/Legislation:

(EC) No 1907/2006: Authorisation:	Not regulated
Restriction:	Not regulated
(EC) No 1005/2009:	Not regulated
(EC) No 850/2004:	Not regulated
(EC) No 689/2008:	Not regulated
Others:	None

Chemical Safety Assessment under (EC) No 1907/2006:

Not required

SECTION 16 OTHER INFORMATION

Other Information: OSHA Hazard Communication Standard 29 CFR 1910.1210, EU Directives 1999/45/EC and 67/548/EEC mean their latest adaptation in this safety data sheet.

This information is furnished without warranty, express or implied, except that it is accurate to the best knowledge of our company. It relates only to the specific material designated herein, and does not relate to use in combination with any other material or in any process. Our company assumes no legal responsibility for use of or reliance upon this information.

Annex: None

Date of Issue: **Feb. 01, 2013**

Revision Date: **Feb. 25, 2013**

Literature Reference:

1) In-house data
2) SDS of materials
3) ・EC-directives 67/548/EEC and 99/45/EC
・IARC Monographs volumes 1-93
・EPA, Proposed Guidelines for Carcinogen Risk Assessment (1986)

Abbreviations:

EU: European Union
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
SVHC: Substances of Very High Concern
OSHA PEL: PEL (Permissible Exposure Limit) under Occupational Safety and Health Administration
ACGIH TLV: TLV (Threshold Limit Value) under American Conference of Governmental Industrial Hygienists
EU OEL: Occupational exposure limits at Community level under Directive 2004/37/EC Annex, 98/24/EC Annex, 91/322/EEC Annex, 2000/39/EC Annex, 2006/15/EC Annex and 2009/161/EU
DFG MAK: MAK (Maximale Arbeitsplatz-Konzentration) under Deutsche Forschungsgemeinschaft
DNEL: Derived No-Effect Level
PNEC: Predicted No-Effect Concentration

SECTION 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Identifier:

Product Name: OKT5M Toner

Product Code:

Relevant Identified Uses and Uses Advised Against : Toner for electrophotographic apparatus

Manufacturer: Mitsubishi Chemical Corporation

Address: 1-1, Marunouchi 1-Chome, Chiyoda-ku Tokyo 100-8251, Japan

Details of Supplier of Safety Data Sheet:

Supplier: Mitsubishi Chemical Corporation

Address: 1-1, Marunouchi 1-Chome, Chiyoda-ku Tokyo 100-8251, Japan

Telephone Number: +81-3-6748-7138

E-mail Address: -

Emergency Telephone Number: +81-3-6748-7138 (9AM-5:45PM, Monday through Friday)

SECTION 2 HAZARDS IDENTIFICATION

Emergency Overview: This product is not classified as dangerous according to the latest adaptations of EU Directive 1999/45/EC or 67/548/EEC.
Appearance and odor: Fine red powder, slight plastic odor.

US Regulatory Status: Hazardous under OSHA HCS.

US Label Elements:

Signal Word: Not required

Hazard Warning: Not required

Safety Advice: Not required

Hazardous Component: Titanium dioxide is listed as IARC Group 2B, but its labeling is not required by OSHA HCS.

EU Classification: Not classified as dangerous.

EU Label Elements:

Symbol & Indication: Not required

R-Phrase: Not required

S-Phrase: Not required

Dangerous Component: Not required

Applicable Label Elements in accordance with Annex V to 1999/45/EC: Not applicable

Authorisation # under (EC) No 1907/2006: None

Other Hazards: Fine and explosion hazard:
This product, like most organic powders, can cause a dust explosion if particles form thick clouds.

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Substance or Mixture: Mixture

Ingredient(s):

Chemical Name/ Generic Name	CAS#	EC#/ Registration#	Concentration/ Concentration Range (%)	EU Classification according to 67/548/EEC		EU Classification according to (EC) No 1272/2008	
				Symbol/ Indication of Danger	R-Phrase*[1]	Hazard Class/ Category Code	Hazard Statement*[1]
Styrene acrylate copolymer	Confidential	Not applicable	80-90	None	None	None	None
Wax	Confidential	Confidential	5-15	None	None	None	None
Red pigment	Confidential	Confidential	3-10	None	None	None	None
Amorphous Silica	7631-86-9	231-545-4	1-3	None	None	None	None
Titanium dioxide	13463-67-7	236-675-5	0.1-0.9	None	None	None	None

*1. Full texts of R-phrase(s) and Hazard statement(s) are listed in SECTION 16

Carcinogen(s):

Chemical Name:	CAS#:	Reference:
Titanium dioxide	13463-67-7	IARC Group 2B (possibly carcinogenic to humans)

PBT Substance(s) and vPvB Substance(s):

Chemical Name:	CAS#:	Category:
None		

Substance(s) listed in Candidate List of SVHC:

Chemical Name:	CAS#:	Category:
None		

SECTION 4 FIRST AID MEASURES

First Aid Measures:

Inhalation: Provide fresh air immediately. If symptoms occur, seek medical advice.

Ingestion: Clean mouth out with water. Drink several glasses of water. If sickness develops, seek medical advice.

Skin: Wash out particles with plenty of water and soap. If irritation develops, seek medical advice.

Eye: Do not rub eyes. Immediately rinse with plenty of clean running water until particles are washed out. If irritation persists, seek medical advice.

Most Important Symptoms and Effects, both Acute and Delayed:

Inhalation: Exposure to excessive amounts of dust may cause physical irritation to respiratory tract.

Ingestion: Practically non-toxic. Ingestion is a minor route of entry for intended use of this product.

Skin : May be non-irritant.

Eye:	May be non-irritant.
Chronic Effects:	Prolonged inhalation of excessive amounts of dust may cause lung damage. Use of this product as intended dose not result in inhalation of excessive amounts of dust.
Medical Conditions Generally known to be Aggravated by Exposure:	Not known.
Indication of Any Immediate Medical Attention and Special Treatment Needed:	None

SECTION 5 FIRE FIGHTING MEASURES

Extinguishing Media:

Suitable Extinguishing Media:	Carbon dioxide, water, form, dry chemical
Unsuitable Extinguishing Media:	None
Special Hazards:	It may form explosive dust-air mixtures when finely dispersed in air.
Hazardous Combustion Products:	Toner, like most organic powders, is capable of creating a dust explosion when particles are dispersed. Carbon monoxide and carbon dioxide are hazardous resulting gases.
Advice for Fire-fighters:	Wear gloves, glasses and a mask if necessary.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:	Avoid dust formation. Do not breathe dust. Wear personal protective equipment as described in Section 8.
Environmental Precautions:	Do not discharge into drains.
Methods and Material for Containment and Cleaning Up:	Eliminate source of ignition and flammables. Vacuum or sweep the material into a sealed container. If a vacuum cleaner is used, it must be dust explosion-proof. Dispose of the material in accordance with Federal/state/local requirements.
Reference to Other Sections:	Refer to section 13.

SECTION 7 HANDLING AND STORAGE

Precautions for Safe Handling:	Keep out of reach of children. Avoid dust formation. Handle in adequately ventilated areas. Do not breathe dust. Do not get in eyes or on skin. Keep away from excessive heat and sources of ignition such as sparks and open flames. Ensure all the equipment is electrically earthed/grounded before beginning operation.
Conditions for Safe Storage, Including Any Incompatibilities:	Keep out of reach of children. Keep container closed and store at room temperature. Keep away from excessive heat and sources of ignition. Do not store with strong oxidizers.
Specific End Uses:	This product is a toner used in printers/copiers.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters:

Product:	USA OSHA PEL	ACGIH TLV	EU OEL	DFG MAK
toner	Total dust: 15mg/m3 Respirable fraction: 5mg/m3	Inhalable particulate: 10mg/m3 Respirable particulate: 3mg.m3	Not established	Inhalable fraction: 4mg/m3 Respirable fraction: 1.5mg/m3

Ingredient(s):	USA OSHA PEL	ACGIH TLV	EU OEL	DFG MAK
Amorphous silica	20mppcf* or 80/%Sio2 mg/m3 (* million particles per cubic foot)	Not listed	Not established	Inhalable fraction: 4mg/m3
Titanium dioxide	Total dust: 15mg/m3	10mg/m3	Not established	Not established

Exposure Controls:

Engineering Controls: No special ventilation equipment needed under intended use of this product. But, ventilation equipment is necessary in case of dust formation.

DNEL(s): Not available

PNEC(s): Not available

Individual Protection Measures:

Eye/Face Protection: ☐ **Required** ■ **Not Required** Personal protective equipments (gloves) are recommended when handling this product in large quantities.

Skin Protection: ☐ **Required** ■ **Not Required** Personal protective equipments (glasses) are recommended when handling this product in large quantities.

Respiratory Protection: ☐ **Required** ■ **Not Required** Personal protective equipments (mask) are recommended when handling this product in large quantities.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties:

Appearance: Fine red powder

Odor: None or slight plastic-like odor

pH: Not applicable

Melting Point/Freezing Point (°C): Not applicable

Initial Boiling Point and Boiling Range (°C): Not applicable

Flash Point (°C): Not applicable

Evaporation Rate: Not applicable

Flammability: No data available

Upper/Lower Flammable or Explosive Limits: Not applicable

Vapor Pressure: Not applicable

Vapor Density: Not applicable

Relative Density:	About 1.2g/ cm3
Water Solubility:	Negligible
Fat Solubility:	Partially soluble in toluene and THF
Partition Coefficient (n-Octanol/Water):	Not applicable
Auto-ignition Temperature (°C):	Not available
Decomposition Temperature (°C):	> 200
Viscosity (mPa s):	Not applicable
Explosive Properties:	It may form explosive dust-air mixtures when finely dispersed in air.
Oxidizing Properties:	Not available
Other Information:	Not available

SECTION 10 STABILITY AND REACTIVITY

Reactivity:	No hazardous polymerization will occur.
Chemical Stability:	■ **Stable** □ **Unstable**
Possibility of Hazardous Reactions:	None
Conditions to Avoid:	Excessive heat, Dust formation
Incompatible Materials:	Strong oxidizers, which could vigorously oxidize organic materials in this mixture and case a fire in an extreme case.
Hazardous Decomposition Products:	Carbon monoxide and carbon dioxide when combusted.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on Toxicological Effects:

Acute Toxicity:

Inhalation:	No test data available
Ingestion:	No test data available
Skin:	No test data available

Corrosivity/Irritation:

Skin:	No test data available
Eye:	No test data available

Sensitization:

Skin:	No test data available

Repeated Dose Toxicity:

No test data available.
In a study in rats of chronic inhalation exposure to a typical toner, a mild to moderate degree of lung fibrosis was observed in 92%of the rats in the high concentration (16mg/m3) exposure group. And a minimal to mild degree of fibrosis was noted in 22% of the animals in the middle (4mg/ m3) exposure group. But no pulmonary change was reported in the lowest (1mg/ m3) exposure group, the most relevant level to potential human exposures. (Muhle et al.)
The quantity of toner exhausted with the normal use of this product is estimated less than 1mg/m3 per day.

Carcinogenicity:	No test data available. IARC has issued a notice that they will publish a monograph that lists titanium dioxide (TiO2) as possibly carcinogenic to humans (Group 2B) by inhalation (based solely on animal data). Human epidemiology studies do not suggest an increased risk of cancer in humans for occupational exposure to titanium dioxide. IARC stated that exposure levels are assumed to be lower in the user industries, with the possible exception of workers who handle large quantities of titanium dioxide. No significant exposure to titanium dioxide is thought to occur during the use of products in which titanium dioxide is bound to other materials, such as in paints. [3)]
Mutagenicity:	Based on the result of Ames test (Salmonella typhimurium TA98,TA100,TA1535,TA1537, E.coli WP2 uvrA), this product has negative mutagenicity. [1)]
Toxicity for Reproduction:	No test data available
Other Information:	Not available
Toxicokinetics, Metabolism and Distribution:	Not available

SECTION 12 ECOLOGICAL INFORMATION

Toxicity:	No data available
Persistence and Degradability:	No data available
Bioaccumulative Potential:	No data available
Mobility in Soil:	No data available
Results of PBT and vPvB Assessment:	No results that the component(s) of this product meet(s) the PBT or vPvB criteria under Regulation (EC) No 1907/2006.
Other Adverse Effects:	No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Waste Treatment Methods:	Waste material may be dumped or incinerated on condition that meets all country, state and local environmental regulations. Recommendation: Consult with the disposal agency and the relevant authorities; cleansing agent is water.

SECTION 14 TRANSPORT INFORMATION

UN Number:	None
UN Proper Shipping Name:	None
Transport Hazard Class:	None
Packing Group:	None
Environmental Hazards:	None
Special Precautions for User:	None
Transport in Bulk according to Annex II of MARPOL 73/78 and IBC Code:	Not applicable

SECTION 15 REGULATORY INFORMATION

US Information:

SARA Title III, 313:

Chemical Name:	**Wt%:**
None	

California Proposition 65:

Chemical Name:	**Wt%:**
None	

EU Information:

Safety, Health and Environmental Regulations/Legislation:

(EC) No 1907/2006: Authorisation:	Not regulated
Restriction:	Not regulated
(EC) No 1005/2009:	Not regulated
(EC) No 850/2004:	Not regulated
(EC) No 689/2008:	Not regulated
Others:	None

Chemical Safety Assessment under (EC) No 1907/2006:

Not required

SECTION 16 OTHER INFORMATION

Other Information: OSHA Hazard Communication Standard 29 CFR 1910.1210, EU Directives 1999/45/EC and 67/548/EEC mean their latest adaptation in this safety data sheet.

This information is furnished without warranty, express or implied, except that it is accurate to the best knowledge of our company. It relates only to the specific material designated herein, and does not relate to use in combination with any other material or in any process. Our company assumes no legal responsibility for use of or reliance upon this information.

Annex: None

Date of Issue: **Feb. 01, 2013**

Revision Date: **Feb. 25, 2013**

Literature Reference:

1) In-house data
2) SDS of materials
3) ・EC-directives 67/548/EEC and 99/45/EC
・IARC Monographs volumes 1-93
・EPA, Proposed Guidelines for Carcinogen Risk Assessment (1986)

Abbreviations:

EU: European Union
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
SVHC: Substances of Very High Concern
OSHA PEL: PEL (Permissible Exposure Limit) under Occupational Safety and Health Administration
ACGIH TLV: TLV (Threshold Limit Value) under American Conference of Governmental Industrial Hygienists
EU OEL: Occupational exposure limits at Community level under Directive 2004/37/EC Annex, 98/24/EC Annex, 91/322/EEC Annex, 2000/39/EC Annex, 2006/15/EC Annex and 2009/161/EU
DFG MAK: MAK (Maximale Arbeitsplatz-Konzentration) under Deutsche Forschungsgemeinschaft
DNEL: Derived No-Effect Level
PNEC: Predicted No-Effect Concentration

SECTION 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Identifier:

Product Name: OKT5K Toner

Product Code:

Relevant Identified Uses and Uses Advised Against : Toner for electrophotographic apparatus

Manufacturer: Mitsubishi Chemical Corporation

Address: 1-1, Marunouchi 1-Chome, Chiyoda-ku Tokyo 100-8251, Japan

Details of Supplier of Safety Data Sheet:

Supplier: Mitsubishi Chemical Corporation

Address: 1-1, Marunouchi 1-Chome, Chiyoda-ku Tokyo 100-8251, Japan

Telephone Number: +81-3-6748-7138

E-mail Address: -

Emergency Telephone Number: +81-3-6748-7138 (9AM-5:45PM, Monday through Friday)

SECTION 2 HAZARDS IDENTIFICATION

Emergency Overview: This product is not classified as dangerous according to the latest adaptations of EU Directive 1999/45/EC or 67/548/EEC.
Appearance and odor: Fine black powder, slight plastic odor.

US Regulatory Status: Hazardous under OSHA HCS.

US Label Elements:

Signal Word: Not required

Hazard Warning: Not required

Safety Advice: Not required

Hazardous Component: Carbon black is listed as IARC Group 2B, but its labeling is not required by OSHA HCS.

Titanium dioxide is listed as IARC Group 2B, but its labeling is not required by OSHA HCS.

EU Classification: Not classified as dangerous.

EU Label Elements:

Symbol & Indication: Not required

R-Phrase: Not required

S-Phrase: Not required

Dangerous Component: Not required

Applicable Label Elements in accordance with Annex V to 1999/45/EC: Not applicable

Authorisation # under (EC) No 1907/2006: None

Other Hazards: Fine and explosion hazard:
This product, like most organic powders, can cause a dust explosion if particles form thick clouds.

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Substance or Mixture: Mixture

Ingredient(s):

Chemical Name/ Generic Name	CAS#	EC#/ Registration#	Concentration/ Concentration Range (%)	EU Classification according to 67/548/EEC		EU Classification according to (EC) No 1272/2008	
				Symbol/ Indication of Danger	R-Phrase*[1]	Hazard Class/ Category Code	Hazard Statement*[1]
Styrene acrylate copolymer	Confidential	Not applicable	80-90	None	None	None	None
Wax	Confidential	Confidential	5-15	None	None	None	None
Carbon black	1333-86-4	215-609-9	3-10	None	None	None	None
Amorphous Silica	7631-86-9	231-545-4	1-3	None	None	None	None
Titanium dioxide	13463-67-7	236-675-5	0.1-0.9	None	None	None	None

*1. Full texts of R-phrase(s) and Hazard statement(s) are listed in SECTION 16

Carcinogen(s):

Chemical Name:	CAS#:	Reference:
Carbon black	1333-86-4	IARC Group 2B (possibly carcinogenic to humans)
Titanium dioxide	13463-67-7	IARC Group 2B (possibly carcinogenic to humans)

PBT Substance(s) and vPvB Substance(s):

Chemical Name:	CAS#:	Category:
None		

Substance(s) listed in Candidate List of SVHC:

Chemical Name:	CAS#:	Category:
None		

SECTION 4 FIRST AID MEASURES

First Aid Measures:

Inhalation: Provide fresh air immediately. If symptoms occur, seek medical advice.

Ingestion: Clean mouth out with water. Drink several glasses of water. If sickness develops, seek medical advice.

Skin: Wash out particles with plenty of water and soap. If irritation develops, seek medical advice.

Eye: Do not rub eyes. Immediately rinse with plenty of clean running water until particles are washed out. If irritation persists, seek medical advice.

Most Important Symptoms and Effects, both Acute and Delayed:

Inhalation: Exposure to excessive amounts of dust may cause physical irritation to respiratory tract.

Ingestion:	Practically non-toxic. Ingestion is a minor route of entry for intended use of this product.
Skin :	May be non-irritant.
Eye:	May be non-irritant.
Chronic Effects:	Prolonged inhalation of excessive amounts of dust may cause lung damage. Use of this product as intended dose not result in inhalation of excessive amounts of dust.
Medical Conditions Generally known to be Aggravated by Exposure:	Not known.
Indication of Any Immediate Medical Attention and Special Treatment Needed:	None

SECTION 5 FIRE FIGHTING MEASURES

Extinguishing Media:

Suitable Extinguishing Media:	Carbon dioxide, water, form, dry chemical
Unsuitable Extinguishing Media:	None
Special Hazards:	It may form explosive dust-air mixtures when finely dispersed in air.
Hazardous Combustion Products:	Toner, like most organic powders, is capable of creating a dust explosion when particles are dispersed. Carbon monoxide and carbon dioxide are hazardous resulting gases.
Advice for Fire-fighters:	Wear gloves, glasses and a mask if necessary.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:	Avoid dust formation. Do not breathe dust. Wear personal protective equipment as described in Section 8.
Environmental Precautions:	Do not discharge into drains.
Methods and Material for Containment and Cleaning Up:	Eliminate source of ignition and flammables. Vacuum or sweep the material into a sealed container. If a vacuum cleaner is used, it must be dust explosion-proof. Dispose of the material in accordance with Federal/state/local requirements.
Reference to Other Sections:	Refer to section 13.

SECTION 7 HANDLING AND STORAGE

Precautions for Safe Handling:	Keep out of reach of children. Avoid dust formation. Handle in adequately ventilated areas. Do not breathe dust. Do not get in eyes or on skin. Keep away from excessive heat and sources of ignition such as sparks and open flames. Ensure all the equipment is electrically earthed/grounded before beginning operation.
Conditions for Safe Storage, Including Any Incompatibilities:	Keep out of reach of children. Keep container closed and store at room temperature. Keep away from excessive heat and sources of ignition. Do not store with strong oxidizers.
Specific End Uses:	This product is a toner used in printers/copiers.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters:

Product:	USA OSHA PEL	ACGIH TLV	EU OEL	DFG MAK
toner	Total dust: 15mg/m3 Respirable fraction: 5mg/m3	Inhalable particulate: 10mg/m3 Respirable particulate: 3mg.m3	Not established	Inhalable fraction: 4mg/m3 Respirable fraction: 1.5mg/m3

Ingredient(s):	USA OSHA PEL	ACGIH TLV	EU OEL	DFG MAK
Carbon black	3.5mg/m3	3.5mg/m3	Not established	Not established
Amorphous silica	20mppcf* or 80/%Sio2 mg/m3 (* million particles per cubic foot)	Not listed	Not established	Inhalable fraction: 4mg/m3
Titanium dioxide	Total dust: 15mg/m3	10mg/m3	Not established	Not established

Exposure Controls:

Engineering Controls: No special ventilation equipment needed under intended use of this product. But, ventilation equipment is necessary in case of dust formation.

DNEL(s): Not available

PNEC(s): Not available

Individual Protection Measures:

Eye/Face Protection: ☐ **Required** ■ **Not Required** Personal protective equipments (gloves) are recommended when handling this product in large quantities.

Skin Protection: ☐ **Required** ■ **Not Required** Personal protective equipments (glasses) are recommended when handling this product in large quantities.

Respiratory Protection: ☐ **Required** ■ **Not Required** Personal protective equipments (mask) are recommended when handling this product in large quantities.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties:

Appearance: Fine black powder

Odor: None or slight plastic-like odor

pH: Not applicable

Melting Point/Freezing Point (°C): Not applicable

Initial Boiling Point and Boiling Range (°C): Not applicable

Flash Point (°C): Not applicable

Evaporation Rate: Not applicable

Flammability:	Similar product shows not "highly flammable" by A10 method of Directive 92/69/EEC.
Upper/Lower Flammable or Explosive Limits:	Not applicable
Vapor Pressure:	Not applicable
Vapor Density:	Not applicable
Relative Density:	About 1.2g/ cm3
Water Solubility:	Negligible
Fat Solubility:	Partially soluble in toluene and THF
Partition Coefficient (n-Octanol/Water):	Not applicable
Auto-ignition Temperature (°C):	Not available
Decomposition Temperature (°C):	> 200
Viscosity (mPa s):	Not applicable
Explosive Properties:	It may form explosive dust-air mixtures when finely dispersed in air.
Oxidizing Properties:	Not available
Other Information:	Not available

SECTION 10 STABILITY AND REACTIVITY

Reactivity:	No hazardous polymerization will occur.
Chemical Stability:	■ **Stable** ☐ **Unstable**
Possibility of Hazardous Reactions:	None
Conditions to Avoid:	Excessive heat, Dust formation
Incompatible Materials:	Strong oxidizers, which could vigorously oxidize organic materials in this mixture and case a fire in an extreme case.
Hazardous Decomposition Products:	Carbon monoxide and carbon dioxide when combusted.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on Toxicological Effects:

Acute Toxicity:

Inhalation:	No test data available.
Ingestion:	No test data available.
Skin:	No test data available.

Corrosivity/Irritation:

Skin:	No test data available.
Eye:	No test data available.

Sensitization:

Skin:	No test data available.

Repeated Dose Toxicity:	No test data available. In a study in rats of chronic inhalation exposure to a typical toner, a mild to moderate degree of lung fibrosis was observed in 92%of the rats in the high concentration (16mg/m3) exposure group. And a minimal to mild degree of fibrosis was noted in 22% of the animals in the middle (4mg/ m3) exposure group. But no pulmonary change was reported in the lowest (1mg/ m3) exposure group, the most relevant level to potential human exposures. (Muhle et al.) The quantity of toner exhausted with the normal use of this product is estimated less than 1mg/m3 per day.
Carcinogenicity:	No test data available. In 1996 the IARC reevaluated carbon black as a Group 2B carcinogen (possible human carcinogen). This classification is given to chemicals for which there is inadequate human evidence, but sufficient animal evidence on which to base an opinion of carcinogenicity. The classification is based upon the development of lung tumors in rats receiving chronic inhalation exposures to free carbon black at levels that induce particle overload of the lung. Studies performed in animal models other than rats did not show any association between carbon black and lung tumors. Moreover, a two-year cancer bioassay using a typical toner product containing carbon black demonstrated no association between toner exposure and tumor development in rats. IARC has issued a notice that they will publish a monograph that lists titanium dioxide (TiO2) as possibly carcinogenic to humans (Group 2B) by inhalation (based solely on animal data). Human epidemiology studies do not suggest an increased risk of cancer in humans for occupational exposure to titanium dioxide. IARC stated that exposure levels are assumed to be lower in the user industries, with the possible exception of workers who handle large quantities of titanium dioxide. No significant exposure to titanium dioxide is thought to occur during the use of products in which titanium dioxide is bound to other materials, such as in paints. [3)]
Mutagenicity:	Based on the result of Ames test (Salmonella typhimurium TA98,TA100,TA1535,TA1537, E.coli WP2 uvrA), this product has negative mutagenicity. [1)]
Toxicity for Reproduction:	No test data available
Other Information:	Not available
Toxicokinetics, Metabolism and Distribution:	Not available

SECTION 12 ECOLOGICAL INFORMATION

Toxicity:	No data available
Persistence and Degradability:	No data available
Bioaccumulative Potential:	No data available
Mobility in Soil:	No data available
Results of PBT and vPvB Assessment:	No results that the component(s) of this product meet(s) the PBT or vPvB criteria under Regulation (EC) No 1907/2006.
Other Adverse Effects:	No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Waste Treatment Methods:	Waste material may be dumped or incinerated on condition that meets all country, state and local environmental regulations. Recommendation: Consult with the disposal agency and the relevant authorities; cleansing agent is water.

SECTION 14 TRANSPORT INFORMATION

UN Number:	None
UN Proper Shipping Name:	None
Transport Hazard Class:	None
Packing Group:	None
Environmental Hazards:	None
Special Precautions for User:	None
Transport in Bulk according to Annex II of MARPOL 73/78 and IBC Code:	Not applicable

SECTION 15 REGULATORY INFORMATION

US Information:

SARA Title III, 313:

Chemical Name:	**Wt%:**
None	

California Proposition 65:

Chemical Name:	**Wt%:**
None "Carbon black (airborne, unbound particles of respirable size)" is a California Proposition 65 listed substance. Please note that all three listing qualifiers (airborne, unbound (not bound within a matrix), and respirable size (10micrometers or less in diameter)) must be met for this substance to be considered a Proposition 65 substance. The carbon black in this product is bounded within resin matrix.	

EU Information:

Safety, Health and Environmental Regulations/Legislation:

(EC) No 1907/2006: Authorisation:	Not regulated
Restriction:	Not regulated
(EC) No 1005/2009:	Not regulated
(EC) No 850/2004:	Not regulated
(EC) No 689/2008:	Not regulated
Others:	None

Chemical Safety Assessment under (EC) No 1907/2006:

Not required

SECTION 16 OTHER INFORMATION

Other Information: OSHA Hazard Communication Standard 29 CFR 1910.1210, EU Directives 1999/45/EC and 67/548/EEC mean their latest adaptation in this safety data sheet.

This information is furnished without warranty, express or implied, except that it is accurate to the best knowledge of our company. It relates only to the specific material designated herein, and does not relate to use in combination with any other material or in any process. Our company assumes no legal responsibility for use of or reliance upon this information.

Annex: None

Date of Issue: **Feb. 01, 2013**

Revision Date: **Feb. 25, 2013**

Literature Reference:

1) In-house data
2) SDS of materials
3) ・EC-directives 67/548/EEC and 99/45/EC
・IARC Monographs volumes 1-93
・EPA, Proposed Guidelines for Carcinogen Risk Assessment (1986)

Abbreviations:

EU: European Union
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
SVHC: Substances of Very High Concern
OSHA PEL: PEL (Permissible Exposure Limit) under Occupational Safety and Health Administration
ACGIH TLV: TLV (Threshold Limit Value) under American Conference of Governmental Industrial Hygienists
EU OEL: Occupational exposure limits at Community level under Directive 2004/37/EC Annex, 98/24/EC Annex, 91/322/EEC Annex, 2000/39/EC Annex, 2006/15/EC Annex and 2009/161/EU
DFG MAK: MAK (Maximale Arbeitsplatz-Konzentration) under Deutsche Forschungsgemeinschaft
DNEL: Derived No-Effect Level
PNEC: Predicted No-Effect Concentration

SECTION 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Identifier:

Product Name: OKT5Y Toner

Product Code:

Relevant Identified Uses and Uses Advised Against : Toner for electrophotographic apparatus

Manufacturer: Mitsubishi Chemical Corporation

Address: 1-1, Marunouchi 1-Chome, Chiyoda-ku Tokyo 100-8251, Japan

Details of Supplier of Safety Data Sheet:

Supplier: Mitsubishi Chemical Corporation

Address: 1-1, Marunouchi 1-Chome, Chiyoda-ku Tokyo 100-8251, Japan

Telephone Number: +81-3-6748-7138

E-mail Address: -

Emergency Telephone Number: +81-3-6748-7138 (9AM-5:45PM, Monday through Friday)

SECTION 2 HAZARDS IDENTIFICATION

Emergency Overview: This product is not classified as dangerous according to the latest adaptations of EU Directive 1999/45/EC or 67/548/EEC.
Appearance and odor: Fine yellow powder, slight plastic odor.

US Regulatory Status: Hazardous under OSHA HCS.

US Label Elements:

Signal Word: Not required

Hazard Warning: Not required

Safety Advice: Not required

Hazardous Component: Titanium dioxide is listed as IARC Group 2B, but its labeling is not required by OSHA HCS.

EU Classification: Not classified as dangerous.

EU Label Elements:

Symbol & Indication: Not required

R-Phrase: Not required

S-Phrase: Not required

Dangerous Component: Not required

Applicable Label Elements in accordance with Annex V to 1999/45/EC: Not applicable

Authorisation # under (EC) No 1907/2006: None

Other Hazards: Fine and explosion hazard:
This product, like most organic powders, can cause a dust explosion if particles form thick clouds.

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Substance or Mixture: Mixture

Ingredient(s):

Chemical Name/ Generic Name	CAS#	EC#/ Registration#	Concentration/ Concentration Range (%)	EU Classification according to 67/548/EEC		EU Classification according to (EC) No 1272/2008	
				Symbol/ Indication of Danger	R-Phrase*[1]	Hazard Class/ Category Code	Hazard Statement*[1]
Styrene acrylate copolymer	Confidential	Not applicable	80-90	None	None	None	None
Wax	Confidential	Confidential	5-15	None	None	None	None
Yellow pigment	Confidential	Confidential	3-10	None	None	None	None
Amorphous Silica	7631-86-9	231-545-4	1-3	None	None	None	None
Titanium dioxide	13463-67-7	236-675-5	0.1-0.9	None	None	None	None

*1. Full texts of R-phrase(s) and Hazard statement(s) are listed in SECTION 16

Carcinogen(s):

Chemical Name:	CAS#:	Reference:
Titanium dioxide	13463-67-7	IARC Group 2B (possibly carcinogenic to humans)

PBT Substance(s) and vPvB Substance(s):

Chemical Name:	CAS#:	Category:
None		

Substance(s) listed in Candidate List of SVHC:

Chemical Name:	CAS#:	Category:
None		

SECTION 4 FIRST AID MEASURES

First Aid Measures:

Inhalation: Provide fresh air immediately. If symptoms occur, seek medical advice.

Ingestion: Clean mouth out with water. Drink several glasses of water. If sickness develops, seek medical advice.

Skin: Wash out particles with plenty of water and soap. If irritation develops, seek medical advice.

Eye: Do not rub eyes. Immediately rinse with plenty of clean running water until particles are washed out. If irritation persists, seek medical advice.

Most Important Symptoms and Effects, both Acute and Delayed:

Inhalation: Exposure to excessive amounts of dust may cause physical irritation to respiratory tract.

Ingestion: Practically non-toxic. Ingestion is a minor route of entry for intended use of this product.

Skin : May be non-irritant.

Eye:	May be non-irritant.
Chronic Effects:	Prolonged inhalation of excessive amounts of dust may cause lung damage. Use of this product as intended dose not result in inhalation of excessive amounts of dust.
Medical Conditions Generally known to be Aggravated by Exposure:	Not known.
Indication of Any Immediate Medical Attention and Special Treatment Needed:	None

SECTION 5 FIRE FIGHTING MEASURES

Extinguishing Media:

Suitable Extinguishing Media:	Carbon dioxide, water, form, dry chemical
Unsuitable Extinguishing Media:	None
Special Hazards:	It may form explosive dust-air mixtures when finely dispersed in air.
Hazardous Combustion Products:	Toner, like most organic powders, is capable of creating a dust explosion when particles are dispersed. Carbon monoxide and carbon dioxide are hazardous resulting gases.
Advice for Fire-fighters:	Wear gloves, glasses and a mask if necessary.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:	Avoid dust formation. Do not breathe dust. Wear personal protective equipment as described in Section 8.
Environmental Precautions:	Do not discharge into drains.
Methods and Material for Containment and Cleaning Up:	Eliminate source of ignition and flammables. Vacuum or sweep the material into a sealed container. If a vacuum cleaner is used, it must be dust explosion-proof. Dispose of the material in accordance with Federal/state/local requirements.
Reference to Other Sections:	Refer to section 13.

SECTION 7 HANDLING AND STORAGE

Precautions for Safe Handling:	Keep out of reach of children. Avoid dust formation. Handle in adequately ventilated areas. Do not breathe dust. Do not get in eyes or on skin. Keep away from excessive heat and sources of ignition such as sparks and open flames. Ensure all the equipment is electrically earthed/grounded before beginning operation.
Conditions for Safe Storage, Including Any Incompatibilities:	Keep out of reach of children. Keep container closed and store at room temperature. Keep away from excessive heat and sources of ignition. Do not store with strong oxidizers.
Specific End Uses:	This product is a toner used in printers/copiers.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters:

Product:	USA OSHA PEL	ACGIH TLV	EU OEL	DFG MAK
toner	Total dust: 15mg/m3 Respirable fraction: 5mg/m3	Inhalable particulate: 10mg/m3 Respirable particulate: 3mg.m3	Not established	Inhalable fraction: 4mg/m3 Respirable fraction: 1.5mg/m3

Ingredient(s):	USA OSHA PEL	ACGIH TLV	EU OEL	DFG MAK
Amorphous silica	20mppcf* or 80/%Sio2 mg/m3 (* million particles per cubic foot)	Not listed	Not established	Inhalable fraction: 4mg/m3
Titanium dioxide	Total dust: 15mg/m3	10mg/m3	Not established	Not established

Exposure Controls:

Engineering Controls: No special ventilation equipment needed under intended use of this product. But, ventilation equipment is necessary in case of dust formation.

DNEL(s): Not available

PNEC(s): Not available

Individual Protection Measures:

Eye/Face Protection: ☐ **Required** ■ **Not Required** Personal protective equipments (gloves) are recommended when handling this product in large quantities.

Skin Protection: ☐ **Required** ■ **Not Required** Personal protective equipments (glasses) are recommended when handling this product in large quantities.

Respiratory Protection: ☐ **Required** ■ **Not Required** Personal protective equipments (mask) are recommended when handling this product in large quantities.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties:

Appearance: Fine yellow powder

Odor: None or slight plastic-like odor

pH: Not applicable

Melting Point/Freezing Point (°C): Not applicable

Initial Boiling Point and Boiling Range (°C): Not applicable

Flash Point (°C): Not applicable

Evaporation Rate: Not applicable

Flammability: No data available

Upper/Lower Flammable or Explosive Limits: Not applicable

Vapor Pressure: Not applicable

Vapor Density: Not applicable

Relative Density:	About 1.2g/ cm3
Water Solubility:	Negligible
Fat Solubility:	Partially soluble in toluene and THF
Partition Coefficient (n-Octanol/Water):	Not applicable
Auto-ignition Temperature (°C):	Not available
Decomposition Temperature (°C):	> 200
Viscosity (mPa s):	Not applicable
Explosive Properties:	It may form explosive dust-air mixtures when finely dispersed in air.
Oxidizing Properties:	Not available
Other Information:	Not available

SECTION 10 STABILITY AND REACTIVITY

Reactivity:	No hazardous polymerization will occur.
Chemical Stability:	■ **Stable** □ **Unstable**
Possibility of Hazardous Reactions:	None
Conditions to Avoid:	Excessive heat, Dust formation
Incompatible Materials:	Strong oxidizers, which could vigorously oxidize organic materials in this mixture and case a fire in an extreme case.
Hazardous Decomposition Products:	Carbon monoxide and carbon dioxide when combusted.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on Toxicological Effects:

Acute Toxicity:

Inhalation:	No test data available
Ingestion:	No test data available
Skin:	No test data available

Corrosivity/Irritation:

Skin:	No test data available
Eye:	No test data available

Sensitization:

Skin:	No test data available

Repeated Dose Toxicity:

No test data available.
In a study in rats of chronic inhalation exposure to a typical toner, a mild to moderate degree of lung fibrosis was observed in 92%of the rats in the high concentration (16mg/m3) exposure group. And a minimal to mild degree of fibrosis was noted in 22% of the animals in the middle (4mg/ m3) exposure group. But no pulmonary change was reported in the lowest (1mg/ m3) exposure group, the most relevant level to potential human exposures. (Muhle et al.)
The quantity of toner exhausted with the normal use of this product is estimated less than 1mg/m3 per day.

Carcinogenicity:	No test data available. IARC has issued a notice that they will publish a monograph that lists titanium dioxide (TiO2) as possibly carcinogenic to humans (Group 2B) by inhalation (based solely on animal data). Human epidemiology studies do not suggest an increased risk of cancer in humans for occupational exposure to titanium dioxide. IARC stated that exposure levels are assumed to be lower in the user industries, with the possible exception of workers who handle large quantities of titanium dioxide. No significant exposure to titanium dioxide is thought to occur during the use of products in which titanium dioxide is bound to other materials, such as in paints. [3)]
Mutagenicity:	Based on the result of Ames test (Salmonella typhimurium TA98,TA100,TA1535,TA1537, E.coli WP2 uvrA), this product has negative mutagenicity. [1)]
Toxicity for Reproduction:	No test data available
Other Information:	Not available
Toxicokinetics, Metabolism and Distribution:	Not available

SECTION 12 ECOLOGICAL INFORMATION

Toxicity:	No data available
Persistence and Degradability:	No data available
Bioaccumulative Potential:	No data available
Mobility in Soil:	No data available
Results of PBT and vPvB Assessment:	No results that the component(s) of this product meet(s) the PBT or vPvB criteria under Regulation (EC) No 1907/2006.
Other Adverse Effects:	No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Waste Treatment Methods:	Waste material may be dumped or incinerated on condition that meets all country, state and local environmental regulations. Recommendation: Consult with the disposal agency and the relevant authorities; cleansing agent is water.

SECTION 14 TRANSPORT INFORMATION

UN Number:	None
UN Proper Shipping Name:	None
Transport Hazard Class:	None
Packing Group:	None
Environmental Hazards:	None
Special Precautions for User:	None
Transport in Bulk according to Annex II of MARPOL 73/78 and IBC Code:	Not applicable

SECTION 15 REGULATORY INFORMATION

US Information:

SARA Title III, 313:

Chemical Name:	**Wt%:**
None	

California Proposition 65:

Chemical Name:	**Wt%:**
None	

EU Information:

Safety, Health and Environmental Regulations/Legislation:

(EC) No 1907/2006: Authorisation:	Not regulated
Restriction:	Not regulated
(EC) No 1005/2009:	Not regulated
(EC) No 850/2004:	Not regulated
(EC) No 689/2008:	Not regulated
Others:	None

Chemical Safety Assessment under (EC) No 1907/2006:

Not required

SECTION 16 OTHER INFORMATION

Other Information: OSHA Hazard Communication Standard 29 CFR 1910.1210, EU Directives 1999/45/EC and 67/548/EEC mean their latest adaptation in this safety data sheet.

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Annex: None

Date of Issue: **Feb. 01, 2013**

Revision Date: **Feb. 25, 2013**

Literature Reference:

1) In-house data
2) SDS of materials
3) ・EC-directives 67/548/EEC and 99/45/EC
・IARC Monographs volumes 1-93
・EPA, Proposed Guidelines for Carcinogen Risk Assessment (1986)

Abbreviations:

EU: European Union
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
SVHC: Substances of Very High Concern
OSHA PEL: PEL (Permissible Exposure Limit) under Occupational Safety and Health Administration
ACGIH TLV: TLV (Threshold Limit Value) under American Conference of Governmental Industrial Hygienists
EU OEL: Occupational exposure limits at Community level under Directive 2004/37/EC Annex, 98/24/EC Annex, 91/322/EEC Annex, 2000/39/EC Annex, 2006/15/EC Annex and 2009/161/EU
DFG MAK: MAK (Maximale Arbeitsplatz-Konzentration) under Deutsche Forschungsgemeinschaft
DNEL: Derived No-Effect Level
PNEC: Predicted No-Effect Concentration