



SDS No.: TK5197C-KDA-03-EN

Issue date: 09/11/2015

Revision date: 12/11/2017

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name : Cyan Toner for TASKalfa 306ci, 307ci

Consumable name : TK-5197C

Relevant identified uses of the substance or mixture and uses advised against

Identified uses : The image formation of our electrophotographic equipments.
Other uses are not recommended.

Details of the supplier of the safety data sheet

Manufacturer : KYOCERA Document Solutions Inc.

Address : 1-2-28 Tamatsukuri, Chuo-ku, Osaka 540-8585, Japan

Supplier : KYOCERA Document Solutions America, Inc.

Address : 225 Sand Road, P.O. Box 40008, Fairfield, New Jersey 07004-0008, U.S.A.

Telephone number : +1(973)808-8444

Emergency telephone number

: For safety questions, please contact each sale site during office hours.

SECTION 2: Hazards identification

Classification of the substance or mixture

Classification according to OSHA HCS (29 CFR 1910.1200)
: Not classified as hazardous mixture.

Label elements

Labelling according to OSHA HCS (29 CFR 1910.1200)
: Not applicable.

Other hazards

Hazards not otherwise classified (HNOC)

See section 4 and 11 for information on health effects and symptoms.

See section 9 for dust explosion information.

SECTION 3: Composition/information on ingredients

Substance or Mixture: : Mixture

Chemical name	Identifier CAS No.	Weight%
Polyester resin (2 kinds)	Confidential	75-85
Organic pigment	Confidential	1-5
Amorphous silica	7631-86-9	1-5
Titanium dioxide	13463-67-7	< 1



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Information of Ingredients

Substance which present a health hazard within the meaning of OSHA HCS
: Amorphous silica, Titanium dioxide

See section 8 for the information of occupational exposure limits.

See section 11 for the information of carcinogens.

SECTION 4: First aid measures

Description of first aid measures

Inhalation : Remove from exposure to fresh air and gargle with plenty of water.
Consult a doctor in case of such symptoms as coughing.

Skin Contact : Wash with soap and water.

Eye Contact : Flush with water immediately and see a doctor if irritating.

Ingestion : Rinse out the mouth. Drink one or two glasses of water to dilute.
Seek medical treatment if necessary.

Most important symptoms and effects, both acute and delayed

Potential health effects and symptoms

Inhalation : Prolonged inhalation of excessive dusts may cause lung damage.
Use of this product as intended does not result in prolonged inhalation of excessive toner dusts.

Skin contact : Unlikely to cause skin irritation.

Eye contact : May cause transient eye irritation.

Ingestion : Use of this product as intended does not result in ingestion.

Indication of any immediate medical attention and special treatment needed

: No additional information available.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media : Water spray, foam, powder, CO₂ or dry chemical.

Unsuitable extinguishing media : None specified.

Special hazards arising from the substance or mixture

Hazardous combustion products : Carbon dioxide. Carbon monoxide.

Advice for firefighters

Fire-fighting procedures : Pay attention not to blow away dust.
Drain water off around and decrease the atmosphere temperature to extinguish the fire.

Protective equipment for firefighters : None specified.



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SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

- : Avoid inhalation, ingestion, eye and skin contact in case of accidental release.
- Avoid formation of dust. Provide adequate ventilation.

Environmental precautions

- : Do not allow to enter into surface water or drains.

Methods and material for containment and cleaning up

- Method for cleaning up : Gather the released powder not to blow away and wipe up with a wet cloth.

SECTION 7: Handling and storage

Precautions for safe handling

- : Do not attempt to force open or destroy the toner container or unit.
- See installation guide of this product.

Conditions for safe storage, including any incompatibilities

- : Keep the toner container or unit tightly closed and store in a cool, dry and dark place keeping away from fire. Keep out of the reach of children.

SECTION 8: Exposure controls/personal protection

Control parameters

(Reference data)

US ACGIH TLV (TWA)

Particles: 10 mg/m³ (Inhalable particles), 3 mg/m³ (Respirable particles)

Titanium dioxide: 10 mg/m³

US OSHA PEL (TWA)

Particles: 15 mg/m³ (Total dust), 5 mg/m³ (Respirable fraction)

Amorphous silica: 80 mg/m³/ %SiO₂

Titanium dioxide: 15 mg/m³ (Total dust)

Exposure controls

- Appropriate engineering controls : Special ventilator is not required under normal intended use.
Use in a well ventilated area.
- Personal protective equipment : Respiratory protection, eye protection, hand protection, skin and body protection are not required under normal intended use.



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SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Physical state	: Solid. (Fine powder)
Color	: Cyan.
Odor	: Odorless.
Odor threshold	: No data available.
pH	: No data available.
Melting point	: 100-120 °C (Toner)
Initial boiling point and boiling range	: No data available.
Flash point	: No data available.
Evaporation rate	: No data available.
Flammability (solid, gas)	: No data available.
Upper/lower flammability or explosive limits	: No data available.
Vapour pressure	: No data available.
Vapour density	: No data available.
Relative density	: 1.2-1.4 g/cm ³ (Toner)
Solubility(ies)	: Almost insoluble in water.
Partition coefficient: n-octanol/water	: No data available.
Auto-ignition temperature	: No data available.
Decomposition temperature	: No data available.
Viscosity	: No data available.
Explosive properties	: No data available.
Oxidising properties	: No data available.

Other information

Dust explosion properties : Dust explosion is improbable under normal intended use.
Experimental explosiveness of toner is classified into the same rank such kind of powder as flour, dry milk and resin powder according to the pressure rising speed.

SECTION 10: Stability and reactivity

Reactivity	: No data available.
Chemical stability	: This product is stable under normal conditions of use and storage.
Possibility of hazardous reactions	: Hazardous reactions will not occur.
Conditions to avoid	: None specified.
Incompatible materials	: None specified.
Hazardous decomposition products	: Hazardous decomposition products are not to be produced.



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SAFETY DATA SHEET

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

Oral (LD₅₀) : > 2000 mg/kg (rat)
(Based on test result of similar product.) (Toner)

Dermal (LD₅₀) : No data available.
(Toner)

Inhalation (LC₅₀ (4hr)) : > 5.0 mg/l (rat)
(Based on test result of similar product.) (Toner)

Skin corrosion/irritation

Acute skin irritation : Non-irritant (rabbit)
(Based on test result of similar product.) (Toner)

Serious eye damage/irritation

Acute eye irritation : Minimal irritant (rabbit)
(Based on test result of similar product.) (Toner)

Respiratory or skin sensitisation

Skin sensitisation : Non-sensitiser (mouse)
(Based on test result of similar product.) (Toner)

Germ cell mutagenicity

: Ames Test is Negative.
(Toner)

Information of Ingredients : No mutagen, according to MAK, TRGS905 and (EC) No 1272/2008 Annex VI.

Carcinogenicity

Information of Ingredients : No carcinogen or potential carcinogen according to IARC, Japan Association on Industrial Health, ACGIH, EPA, OSHA, NTP, MAK, California Proposition 65, TRGS 905 and (EC) No 1272/2008 Annex VI.

(except titanium dioxide)

The IARC reevaluated titanium dioxide as a Group 2B carcinogen (possibly carcinogenic to humans) as the result of inhalation exposure test in rats. But, oral/skin test does not show carcinogenicity. (*2)

In the animal chronic inhalation studies for titanium dioxide, the lung tumor was observed in only rats. It is estimated that this is attributed to the overload of rat's lung clearance mechanism (overload phenomenon). (*3)

The inhalation of excessive titanium dioxide dose not occur in normal use of this product. Also, epidemiological studies to date have not revealed any evidence of the relation between occupational exposure to titanium dioxide and respiratory tract diseases.



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Reproductive toxicity

- Information of Ingredients : No reproductive toxicant according to MAK, California Proposition 65, TRGS905 and (EC) No 1272/2008 Annex VI.
- STOT-single exposure : No data available.
- STOT-repeated exposure : No data available.
- Aspiration hazard : No data available.
- Chronic effects : In a study in rats by 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 (16 mg/m³) exposure group, and a minimal to mild degree of fibrosis was noted in 22% of the animal in the middle (4 mg/m³) exposure group. (*1)
But no pulmonary change was reported in the lowest (1 mg/m³) exposure group, the most relevant level to potential human exposures.
- Other information : No data available.

SECTION 12: Ecological information

- Ecotoxicity : No data available.
- Persistence and degradability : No data available.
- Bioaccumulative potential : No data available.
- Mobility in soil : No data available.
- Other adverse effects : No additional information available.

SECTION 13: Disposal considerations

Waste treatment methods

- : Do not attempt to incinerate the toner container or unit and the waste toner yourself. Dangerous sparks may cause burn.
Any disposal practice should be done under conditions which meet local, state and federal laws and regulations relating to waste (contact local or state environmental agency for specific rules).

SECTION 14: Transport information

- UN number : None.
- UN proper shipping name : None.
- Transport hazard class(es) : None.
- Packing group : None.
- Environmental hazards : None.
- Special precautions for user : No additional information available.
- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code : Not applicable.

SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

US regulations

All ingredients in this product comply with order under TSCA.

Canada regulations

This product is not a WHMIS-controlled product, since we consider it as a Manufactured article.

EU regulations

This product is not classified as hazardous mixture according to Regulation (EC) No 1272/2008 (CLP).

This product does not contain substances which present a health or environmental hazard within the meaning of CLP.



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SECTION 16: Other information

To the best of our knowledge, the information contained herein is accurate. However, we cannot assume any liability whatsoever for the accuracy or completeness of the information contained herein.

The contents and format of this SDS are in accordance with Appendix D of 29 CFR 1910.1200.

Revision information	: SECTION 1 (Product name).
Version	: 03
Issue date	: 09/11/2015
Revision date	: 12/11/2017
Abbreviations and acronyms	
OSHA	: Occupational Safety and Health Administration (29 CFR Part 1910 Subpart Z)
HCS	: Hazard Communication Standard
CAS	: Chemical Abstracts Service
ACGIH	: American Conference of Governmental Industrial Hygienists 2016 TLVs and BEIs (Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices)
TLV	: Threshold Limit Values
PEL	: Permissible Exposure Limits
TWA	: Time Weighted Average
UN	: United Nations
IARC	: International Agency for Research on Cancer (IARC Monographs on the Evaluation of Carcinogenic Risks to Humans)
EPA	: Environmental Protection Agency (Integrated Risk Information System) (US)
NTP	: National Toxicology Program (Report on Carcinogens) (US)
MAK	: Maximale Arbeitsplatz-Konzentrationen (List of MAK and BAT Values 2011) (DFG: Deutsche Forschungsgemeinschaft)
Proposition 65	: California, Safe Drinking Water and Toxic Enforcement Act of 1986
TRGS905	: Technische Regeln für Gefahrstoffe (Deutschland)
STOT	: Specific target organ toxicity
TSCA	: Toxic Substances Control Act (US)
WHMIS	: Workplace Hazardous Materials Information System (Canada)
CLP	: Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures

Key literature references and sources for data

(*1) Pulmonary Response to Toner upon Chronic Inhalation Exposure in Rats H.Muhle et.al Fundamental and Applied Toxicology 17.280-299(1991)

Lung Clearance and Retention of Toner, Utilizing a Tracer Technique, during Chronic Inhalation Exposure in Rats B.Bellmann Fundamental and Applied Toxicology 17.300-313(1991)

(*2) IARC Monograph on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, Vol.93

(*3) NIOSH CURRENT INTELLIGENCE BULLETIN "Evaluation of Health Hazard and Recommendation for Occupational Exposure to Titanium Dioxide DRAFT"



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Issue date: 09/11/2015

Revision date: 12/11/2017

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name : Black Toner for TASKalfa 306ci, 307ci

Consumable name : TK-5197K

Relevant identified uses of the substance or mixture and uses advised against

Identified uses : The image formation of our electrophotographic equipments.
Other uses are not recommended.

Details of the supplier of the safety data sheet

Manufacturer : KYOCERA Document Solutions Inc.

Address : 1-2-28 Tamatsukuri, Chuo-ku, Osaka 540-8585, Japan

Supplier : KYOCERA Document Solutions America, Inc.

Address : 225 Sand Road, P.O. Box 40008, Fairfield, New Jersey 07004-0008, U.S.A.

Telephone number : +1(973)808-8444

Emergency telephone number

: For safety questions, please contact each sale site during office hours.

SECTION 2: Hazards identification

Classification of the substance or mixture

Classification according to OSHA HCS (29 CFR 1910.1200)
: Not classified as hazardous mixture.

Label elements

Labelling according to OSHA HCS (29 CFR 1910.1200)
: Not applicable.

Other hazards

Hazards not otherwise classified (HNOC)

See section 4 and 11 for information on health effects and symptoms.

See section 9 for dust explosion information.

SECTION 3: Composition/information on ingredients

Substance or Mixture: : Mixture

Chemical name	Identifier CAS No.	Weight%
Polyester resin	Confidential	70-80
Carbon black	1333-86-4	5-10
Styrene acrylate copolymer	Confidential	1-5
Amorphous silica	7631-86-9	1-5
Titanium dioxide	13463-67-7	< 1



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Information of Ingredients

Substance which present a health hazard within the meaning of OSHA HCS

: Carbon black, Amorphous silica, Titanium dioxide

See section 8 for the information of occupational exposure limits.

See section 11 for the information of carcinogens.

SECTION 4: First aid measures

Description of first aid measures

Inhalation : Remove from exposure to fresh air and gargle with plenty of water.
Consult a doctor in case of such symptoms as coughing.

Skin Contact : Wash with soap and water.

Eye Contact : Flush with water immediately and see a doctor if irritating.

Ingestion : Rinse out the mouth. Drink one or two glasses of water to dilute.
Seek medical treatment if necessary.

Most important symptoms and effects, both acute and delayed

Potential health effects and symptoms

Inhalation : Prolonged inhalation of excessive dusts may cause lung damage.
Use of this product as intended does not result in prolonged inhalation of excessive toner dusts.

Skin contact : Unlikely to cause skin irritation.

Eye contact : May cause transient eye irritation.

Ingestion : Use of this product as intended does not result in ingestion.

Indication of any immediate medical attention and special treatment needed

: No additional information available.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media : Water spray, foam, powder, CO₂ or dry chemical.

Unsuitable extinguishing media : None specified.

Special hazards arising from the substance or mixture

Hazardous combustion products : Carbon dioxide. Carbon monoxide.

Advice for firefighters

Fire-fighting procedures : Pay attention not to blow away dust.
Drain water off around and decrease the atmosphere temperature to extinguish the fire.

Protective equipment for firefighters : None specified.



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SAFETY DATA SHEET

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

- : Avoid inhalation, ingestion, eye and skin contact in case of accidental release.
- Avoid formation of dust. Provide adequate ventilation.

Environmental precautions

- : Do not allow to enter into surface water or drains.

Methods and material for containment and cleaning up

- Method for cleaning up : Gather the released powder not to blow away and wipe up with a wet cloth.

SECTION 7: Handling and storage

Precautions for safe handling

- : Do not attempt to force open or destroy the toner container or unit.
- See installation guide of this product.

Conditions for safe storage, including any incompatibilities

- : Keep the toner container or unit tightly closed and store in a cool, dry and dark place keeping away from fire. Keep out of the reach of children.

SECTION 8: Exposure controls/personal protection

Control parameters

(Reference data)

US ACGIH TLV (TWA)

Particles: 10 mg/m³ (Inhalable particles), 3 mg/m³ (Respirable particles)

Carbon black: 3 mg/m³ (Inhalable fraction)

Titanium dioxide: 10 mg/m³

US OSHA PEL (TWA)

Particles: 15 mg/m³ (Total dust), 5 mg/m³ (Respirable fraction)

Carbon black: 3.5 mg/m³

Amorphous silica: 80 mg/m³/ %SiO₂

Titanium dioxide: 15 mg/m³ (Total dust)

Exposure controls

- Appropriate engineering controls : Special ventilator is not required under normal intended use.
Use in a well ventilated area.
- Personal protective equipment : Respiratory protection, eye protection, hand protection, skin and body protection are not required under normal intended use.



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SAFETY DATA SHEET

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Physical state	: Solid. (Fine powder)
Color	: Black.
Odor	: Odorless.
Odor threshold	: No data available.
pH	: No data available.
Melting point	: 100-120 °C (Toner)
Initial boiling point and boiling range	: No data available.
Flash point	: No data available.
Evaporation rate	: No data available.
Flammability (solid, gas)	: No data available.
Upper/lower flammability or explosive limits	: No data available.
Vapour pressure	: No data available.
Vapour density	: No data available.
Relative density	: 1.2-1.4 g/cm ³ (Toner)
Solubility(ies)	: Almost insoluble in water.
Partition coefficient: n-octanol/water	: No data available.
Auto-ignition temperature	: No data available.
Decomposition temperature	: No data available.
Viscosity	: No data available.
Explosive properties	: No data available.
Oxidising properties	: No data available.

Other information

Dust explosion properties	: Dust explosion is improbable under normal intended use. Experimental explosiveness of toner is classified into the same rank such kind of powder as flour, dry milk and resin powder according to the pressure rising speed.
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SECTION 10: Stability and reactivity

Reactivity	: No data available.
Chemical stability	: This product is stable under normal conditions of use and storage.
Possibility of hazardous reactions	: Hazardous reactions will not occur.
Conditions to avoid	: None specified.
Incompatible materials	: None specified.
Hazardous decomposition products	: Hazardous decomposition products are not to be produced.



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SAFETY DATA SHEET

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

Oral (LD₅₀) : > 2000 mg/kg (rat)
(Based on test result of similar product.) (Toner)

Dermal (LD₅₀) : No data available.
(Toner)

Inhalation (LC₅₀ (4hr)) : > 5.0 mg/l (rat)
(Based on test result of similar product.) (Toner)

Skin corrosion/irritation

Acute skin irritation : Non-irritant (rabbit)
(Based on test result of similar product.) (Toner)

Serious eye damage/irritation

Acute eye irritation : Minimal irritant (rabbit)
(Based on test result of similar product.) (Toner)

Respiratory or skin sensitisation

Skin sensitisation : Non-sensitiser (mouse)
(Based on test result of similar product.) (Toner)

Germ cell mutagenicity

: Ames Test is Negative.
(Toner)

Information of Ingredients : No mutagen, according to MAK, TRGS905 and (EC) No 1272/2008 Annex VI.

Carcinogenicity

Information of Ingredients : No carcinogen or potential carcinogen according to IARC, Japan Association on Industrial Health, ACGIH, EPA, OSHA, NTP, MAK, California Proposition 65, TRGS 905 and (EC) No 1272/2008 Annex VI.

(except carbon black and titanium dioxide)

The IARC reevaluated carbon black and titanium dioxide as a Group 2B carcinogen (possibly carcinogenic to humans) as the result of inhalation exposure test in rats. But, oral/skin test does not show carcinogenicity. (*2)

The evaluation of carbon black is based upon the development of lung tumors in rat receiving chronic inhalation exposures to free carbon black at level that induce particle overload of the lung.

The studies performed in animal models other than rats have not demonstrated an association between carbon black and lung tumors. Moreover, a two-years cancer bioassay using a typical toner preparation containing carbon black demonstrated no association between toner exposure and tumor development in rats. (*1)

In the animal chronic inhalation studies for titanium dioxide, the lung tumor was observed in only rats. It is estimated that this is attributed to the overload of rat's lung clearance mechanism (overload phenomenon). (*3)

The inhalation of excessive titanium dioxide dose not occur in normal use of this product. Also, epidemiological studies to date have not revealed any evidence of the relation between occupational exposure to titanium dioxide and respiratory tract diseases.



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SAFETY DATA SHEET

Reproductive toxicity

- Information of Ingredients : No reproductive toxicant according to MAK, California Proposition 65, TRGS905 and (EC) No 1272/2008 Annex VI.
- STOT-single exposure : No data available.
- STOT-repeated exposure : No data available.
- Aspiration hazard : No data available.
- Chronic effects : In a study in rats by 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 (16 mg/m³) exposure group, and a minimal to mild degree of fibrosis was noted in 22% of the animal in the middle (4 mg/m³) exposure group. (*1)
But no pulmonary change was reported in the lowest (1 mg/m³) exposure group, the most relevant level to potential human exposures.
- Other information : No data available.

SECTION 12: Ecological information

- Ecotoxicity** : No data available.
- Persistence and degradability** : No data available.
- Bioaccumulative potential** : No data available.
- Mobility in soil** : No data available.
- Other adverse effects** : No additional information available.

SECTION 13: Disposal considerations

Waste treatment methods

- : Do not attempt to incinerate the toner container or unit and the waste toner yourself. Dangerous sparks may cause burn.
Any disposal practice should be done under conditions which meet local, state and federal laws and regulations relating to waste (contact local or state environmental agency for specific rules).

SECTION 14: Transport information

- UN number** : None.
- UN proper shipping name** : None.
- Transport hazard class(es)** : None.
- Packing group** : None.
- Environmental hazards** : None.
- Special precautions for user** : No additional information available.
- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** : Not applicable.

SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

US regulations

All ingredients in this product comply with order under TSCA.

Canada regulations

This product is not a WHMIS-controlled product, since we consider it as a Manufactured article.

EU regulations

This product is not classified as hazardous mixture according to Regulation (EC) No 1272/2008 (CLP).

This product does not contain substances which present a health or environmental hazard within the meaning of CLP.



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Revision date: 12/11/2017

SAFETY DATA SHEET

SECTION 16: Other information

To the best of our knowledge, the information contained herein is accurate. However, we cannot assume any liability whatsoever for the accuracy or completeness of the information contained herein.

The contents and format of this SDS are in accordance with Appendix D of 29 CFR 1910.1200.

Revision information	: SECTION 1 (Product name).
Version	: 03
Issue date	: 09/11/2015
Revision date	: 12/11/2017
Abbreviations and acronyms	
OSHA	: Occupational Safety and Health Administration (29 CFR Part 1910 Subpart Z)
HCS	: Hazard Communication Standard
CAS	: Chemical Abstracts Service
ACGIH	: American Conference of Governmental Industrial Hygienists 2016 TLVs and BEIs (Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices)
TLV	: Threshold Limit Values
PEL	: Permissible Exposure Limits
TWA	: Time Weighted Average
UN	: United Nations
IARC	: International Agency for Research on Cancer (IARC Monographs on the Evaluation of Carcinogenic Risks to Humans)
EPA	: Environmental Protection Agency (Integrated Risk Information System) (US)
NTP	: National Toxicology Program (Report on Carcinogens) (US)
MAK	: Maximale Arbeitsplatz-Konzentrationen (List of MAK and BAT Values 2011) (DFG: Deutsche Forschungsgemeinschaft)
Proposition 65	: California, Safe Drinking Water and Toxic Enforcement Act of 1986
TRGS905	: Technische Regeln für Gefahrstoffe (Deutschland)
STOT	: Specific target organ toxicity
TSCA	: Toxic Substances Control Act (US)
WHMIS	: Workplace Hazardous Materials Information System (Canada)
CLP	: Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures

Key literature references and sources for data

(*1) Pulmonary Response to Toner upon Chronic Inhalation Exposure in Rats H.Muhle et.al Fundamental and Applied Toxicology 17.280-299(1991)

Lung Clearance and Retention of Toner, Utilizing a Tracer Technique, during Chronic Inhalation Exposure in Rats B.Bellmann Fundamental and Applied Toxicology 17.300-313(1991)

(*2) IARC Monograph on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, Vol.93

(*3) NIOSH CURRENT INTELLIGENCE BULLETIN "Evaluation of Health Hazard and Recommendation for Occupational Exposure to Titanium Dioxide DRAFT"



SDS No.: TK5197M-KDA-03-EN

Issue date: 09/11/2015

Revision date: 12/11/2017

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name : Magenta Toner for TASKalfa 306ci, 307ci

Consumable name : TK-5197M

Relevant identified uses of the substance or mixture and uses advised against

Identified uses : The image formation of our electrophotographic equipments.
Other uses are not recommended.

Details of the supplier of the safety data sheet

Manufacturer : KYOCERA Document Solutions Inc.

Address : 1-2-28 Tamatsukuri, Chuo-ku, Osaka 540-8585, Japan

Supplier : KYOCERA Document Solutions America, Inc.

Address : 225 Sand Road, P.O. Box 40008, Fairfield, New Jersey 07004-0008, U.S.A.

Telephone number : +1(973)808-8444

Emergency telephone number

: For safety questions, please contact each sale site during office hours.

SECTION 2: Hazards identification

Classification of the substance or mixture

Classification according to OSHA HCS (29 CFR 1910.1200)
: Not classified as hazardous mixture.

Label elements

Labelling according to OSHA HCS (29 CFR 1910.1200)
: Not applicable.

Other hazards

Hazards not otherwise classified (HNOC)

See section 4 and 11 for information on health effects and symptoms.

See section 9 for dust explosion information.

SECTION 3: Composition/information on ingredients

Substance or Mixture: : Mixture

Chemical name	Identifier CAS No.	Weight%
Polyester resin (2 kinds)	Confidential	75-85
Organic pigment	Confidential	1-5
Amorphous silica	7631-86-9	1-5
Titanium dioxide	13463-67-7	< 1



SDS No.: TK5197M-KDA-03-EN

Issue date: 09/11/2015

Revision date: 12/11/2017

SAFETY DATA SHEET

Information of Ingredients

Substance which present a health hazard within the meaning of OSHA HCS
: Amorphous silica, Titanium dioxide

See section 8 for the information of occupational exposure limits.

See section 11 for the information of carcinogens.

SECTION 4: First aid measures

Description of first aid measures

Inhalation : Remove from exposure to fresh air and gargle with plenty of water.
Consult a doctor in case of such symptoms as coughing.

Skin Contact : Wash with soap and water.

Eye Contact : Flush with water immediately and see a doctor if irritating.

Ingestion : Rinse out the mouth. Drink one or two glasses of water to dilute.
Seek medical treatment if necessary.

Most important symptoms and effects, both acute and delayed

Potential health effects and symptoms

Inhalation : Prolonged inhalation of excessive dusts may cause lung damage.
Use of this product as intended does not result in prolonged inhalation of excessive toner dusts.

Skin contact : Unlikely to cause skin irritation.

Eye contact : May cause transient eye irritation.

Ingestion : Use of this product as intended does not result in ingestion.

Indication of any immediate medical attention and special treatment needed

: No additional information available.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media : Water spray, foam, powder, CO₂ or dry chemical.

Unsuitable extinguishing media : None specified.

Special hazards arising from the substance or mixture

Hazardous combustion products : Carbon dioxide. Carbon monoxide.

Advice for firefighters

Fire-fighting procedures : Pay attention not to blow away dust.
Drain water off around and decrease the atmosphere temperature to extinguish the fire.

Protective equipment for firefighters : None specified.



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SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

- : Avoid inhalation, ingestion, eye and skin contact in case of accidental release.
- Avoid formation of dust. Provide adequate ventilation.

Environmental precautions

- : Do not allow to enter into surface water or drains.

Methods and material for containment and cleaning up

- Method for cleaning up : Gather the released powder not to blow away and wipe up with a wet cloth.

SECTION 7: Handling and storage

Precautions for safe handling

- : Do not attempt to force open or destroy the toner container or unit.
- See installation guide of this product.

Conditions for safe storage, including any incompatibilities

- : Keep the toner container or unit tightly closed and store in a cool, dry and dark place keeping away from fire. Keep out of the reach of children.

SECTION 8: Exposure controls/personal protection

Control parameters

(Reference data)

US ACGIH TLV (TWA)

Particles: 10 mg/m³ (Inhalable particles), 3 mg/m³ (Respirable particles)

Titanium dioxide: 10 mg/m³

US OSHA PEL (TWA)

Particles: 15 mg/m³ (Total dust), 5 mg/m³ (Respirable fraction)

Amorphous silica: 80 mg/m³/ %SiO₂

Titanium dioxide: 15 mg/m³ (Total dust)

Exposure controls

- Appropriate engineering controls : Special ventilator is not required under normal intended use.
Use in a well ventilated area.
- Personal protective equipment : Respiratory protection, eye protection, hand protection, skin and body protection are not required under normal intended use.



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SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Physical state	: Solid. (Fine powder)
Color	: Magenta.
Odor	: Odorless.
Odor threshold	: No data available.
pH	: No data available.
Melting point	: 100-120 °C (Toner)
Initial boiling point and boiling range	: No data available.
Flash point	: No data available.
Evaporation rate	: No data available.
Flammability (solid, gas)	: No data available.
Upper/lower flammability or explosive limits	: No data available.
Vapour pressure	: No data available.
Vapour density	: No data available.
Relative density	: 1.2-1.4 g/cm ³ (Toner)
Solubility(ies)	: Almost insoluble in water.
Partition coefficient: n-octanol/water	: No data available.
Auto-ignition temperature	: No data available.
Decomposition temperature	: No data available.
Viscosity	: No data available.
Explosive properties	: No data available.
Oxidising properties	: No data available.

Other information

Dust explosion properties	: Dust explosion is improbable under normal intended use. Experimental explosiveness of toner is classified into the same rank such kind of powder as flour, dry milk and resin powder according to the pressure rising speed.
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SECTION 10: Stability and reactivity

Reactivity	: No data available.
Chemical stability	: This product is stable under normal conditions of use and storage.
Possibility of hazardous reactions	: Hazardous reactions will not occur.
Conditions to avoid	: None specified.
Incompatible materials	: None specified.
Hazardous decomposition products	: Hazardous decomposition products are not to be produced.



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SAFETY DATA SHEET

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

Oral (LD₅₀) : > 2000 mg/kg (rat)
(Based on test result of similar product.) (Toner)

Dermal (LD₅₀) : No data available.
(Toner)

Inhalation (LC₅₀ (4hr)) : > 5.0 mg/l (rat)
(Based on test result of similar product.) (Toner)

Skin corrosion/irritation

Acute skin irritation : Non-irritant (rabbit)
(Based on test result of similar product.) (Toner)

Serious eye damage/irritation

Acute eye irritation : Minimal irritant (rabbit)
(Based on test result of similar product.) (Toner)

Respiratory or skin sensitisation

Skin sensitisation : Non-sensitiser (mouse)
(Based on test result of similar product.) (Toner)

Germ cell mutagenicity

: Ames Test is Negative.
(Toner)

Information of Ingredients : No mutagen, according to MAK, TRGS905 and (EC) No 1272/2008 Annex VI.

Carcinogenicity

Information of Ingredients : No carcinogen or potential carcinogen according to IARC, Japan Association on Industrial Health, ACGIH, EPA, OSHA, NTP, MAK, California Proposition 65, TRGS 905 and (EC) No 1272/2008 Annex VI.

(except titanium dioxide)

The IARC reevaluated titanium dioxide as a Group 2B carcinogen (possibly carcinogenic to humans) as the result of inhalation exposure test in rats. But, oral/skin test does not show carcinogenicity. (*2)

In the animal chronic inhalation studies for titanium dioxide, the lung tumor was observed in only rats. It is estimated that this is attributed to the overload of rat's lung clearance mechanism (overload phenomenon). (*3)

The inhalation of excessive titanium dioxide dose not occur in normal use of this product. Also, epidemiological studies to date have not revealed any evidence of the relation between occupational exposure to titanium dioxide and respiratory tract diseases.



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Reproductive toxicity

- Information of Ingredients : No reproductive toxicant according to MAK, California Proposition 65, TRGS905 and (EC) No 1272/2008 Annex VI.
- STOT-single exposure : No data available.
- STOT-repeated exposure : No data available.
- Aspiration hazard : No data available.
- Chronic effects : In a study in rats by 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 (16 mg/m³) exposure group, and a minimal to mild degree of fibrosis was noted in 22% of the animal in the middle (4 mg/m³) exposure group. (*1)
But no pulmonary change was reported in the lowest (1 mg/m³) exposure group, the most relevant level to potential human exposures.
- Other information : No data available.

SECTION 12: Ecological information

- Ecotoxicity : No data available.
- Persistence and degradability : No data available.
- Bioaccumulative potential : No data available.
- Mobility in soil : No data available.
- Other adverse effects : No additional information available.

SECTION 13: Disposal considerations

Waste treatment methods

- : Do not attempt to incinerate the toner container or unit and the waste toner yourself. Dangerous sparks may cause burn.
Any disposal practice should be done under conditions which meet local, state and federal laws and regulations relating to waste (contact local or state environmental agency for specific rules).

SECTION 14: Transport information

- UN number : None.
- UN proper shipping name : None.
- Transport hazard class(es) : None.
- Packing group : None.
- Environmental hazards : None.
- Special precautions for user : No additional information available.
- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code : Not applicable.

SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

US regulations

All ingredients in this product comply with order under TSCA.

Canada regulations

This product is not a WHMIS-controlled product, since we consider it as a Manufactured article.

EU regulations

This product is not classified as hazardous mixture according to Regulation (EC) No 1272/2008 (CLP).

This product does not contain substances which present a health or environmental hazard within the meaning of CLP.



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SECTION 16: Other information

To the best of our knowledge, the information contained herein is accurate. However, we cannot assume any liability whatsoever for the accuracy or completeness of the information contained herein.

The contents and format of this SDS are in accordance with Appendix D of 29 CFR 1910.1200.

Revision information	: SECTION 1 (Product name).
Version	: 03
Issue date	: 09/11/2015
Revision date	: 12/11/2017
Abbreviations and acronyms	
OSHA	: Occupational Safety and Health Administration (29 CFR Part 1910 Subpart Z)
HCS	: Hazard Communication Standard
CAS	: Chemical Abstracts Service
ACGIH	: American Conference of Governmental Industrial Hygienists 2016 TLVs and BEIs (Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices)
TLV	: Threshold Limit Values
PEL	: Permissible Exposure Limits
TWA	: Time Weighted Average
UN	: United Nations
IARC	: International Agency for Research on Cancer (IARC Monographs on the Evaluation of Carcinogenic Risks to Humans)
EPA	: Environmental Protection Agency (Integrated Risk Information System) (US)
NTP	: National Toxicology Program (Report on Carcinogens) (US)
MAK	: Maximale Arbeitsplatz-Konzentrationen (List of MAK and BAT Values 2011) (DFG: Deutsche Forschungsgemeinschaft)
Proposition 65	: California, Safe Drinking Water and Toxic Enforcement Act of 1986
TRGS905	: Technische Regeln für Gefahrstoffe (Deutschland)
STOT	: Specific target organ toxicity
TSCA	: Toxic Substances Control Act (US)
WHMIS	: Workplace Hazardous Materials Information System (Canada)
CLP	: Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures

Key literature references and sources for data

(*1) Pulmonary Response to Toner upon Chronic Inhalation Exposure in Rats H.Muhle et.al Fundamental and Applied Toxicology 17.280-299(1991)

Lung Clearance and Retention of Toner, Utilizing a Tracer Technique, during Chronic Inhalation Exposure in Rats B.Bellmann Fundamental and Applied Toxicology 17.300-313(1991)

(*2) IARC Monograph on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, Vol.93

(*3) NIOSH CURRENT INTELLIGENCE BULLETIN "Evaluation of Health Hazard and Recommendation for Occupational Exposure to Titanium Dioxide DRAFT"



SDS No.: TK5197Y-KDA-03-EN

Issue date: 09/11/2015

Revision date: 12/11/2017

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name : Yellow Toner for TASKalfa 306ci, 307ci

Consumable name : TK-5197Y

Relevant identified uses of the substance or mixture and uses advised against

Identified uses : The image formation of our electrophotographic equipments.
Other uses are not recommended.

Details of the supplier of the safety data sheet

Manufacturer : KYOCERA Document Solutions Inc.

Address : 1-2-28 Tamatsukuri, Chuo-ku, Osaka 540-8585, Japan

Supplier : KYOCERA Document Solutions America, Inc.

Address : 225 Sand Road, P.O. Box 40008, Fairfield, New Jersey 07004-0008, U.S.A.

Telephone number : +1(973)808-8444

Emergency telephone number

: For safety questions, please contact each sale site during office hours.

SECTION 2: Hazards identification

Classification of the substance or mixture

Classification according to OSHA HCS (29 CFR 1910.1200)

: Not classified as hazardous mixture.

Label elements

Labelling according to OSHA HCS (29 CFR 1910.1200)

: Not applicable.

Other hazards

Hazards not otherwise classified (HNOC)

See section 4 and 11 for information on health effects and symptoms.

See section 9 for dust explosion information.

SECTION 3: Composition/information on ingredients

Substance or Mixture: : Mixture

Chemical name	Identifier CAS No.	Weight%
Polyester resin (2 kinds)	Confidential	75-85
Organic pigment	Confidential	1-5
Amorphous silica	7631-86-9	1-5
Titanium dioxide	13463-67-7	< 1



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Information of Ingredients

Substance which present a health hazard within the meaning of OSHA HCS
: Amorphous silica, Titanium dioxide

See section 8 for the information of occupational exposure limits.

See section 11 for the information of carcinogens.

SECTION 4: First aid measures

Description of first aid measures

Inhalation : Remove from exposure to fresh air and gargle with plenty of water.
Consult a doctor in case of such symptoms as coughing.

Skin Contact : Wash with soap and water.

Eye Contact : Flush with water immediately and see a doctor if irritating.

Ingestion : Rinse out the mouth. Drink one or two glasses of water to dilute.
Seek medical treatment if necessary.

Most important symptoms and effects, both acute and delayed

Potential health effects and symptoms

Inhalation : Prolonged inhalation of excessive dusts may cause lung damage.
Use of this product as intended does not result in prolonged inhalation of excessive toner dusts.

Skin contact : Unlikely to cause skin irritation.

Eye contact : May cause transient eye irritation.

Ingestion : Use of this product as intended does not result in ingestion.

Indication of any immediate medical attention and special treatment needed

: No additional information available.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media : Water spray, foam, powder, CO₂ or dry chemical.

Unsuitable extinguishing media : None specified.

Special hazards arising from the substance or mixture

Hazardous combustion products : Carbon dioxide. Carbon monoxide.

Advice for firefighters

Fire-fighting procedures : Pay attention not to blow away dust.
Drain water off around and decrease the atmosphere temperature to extinguish the fire.

Protective equipment for firefighters : None specified.



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Issue date: 09/11/2015

Revision date: 12/11/2017

SAFETY DATA SHEET

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

- : Avoid inhalation, ingestion, eye and skin contact in case of accidental release.
- Avoid formation of dust. Provide adequate ventilation.

Environmental precautions

- : Do not allow to enter into surface water or drains.

Methods and material for containment and cleaning up

- Method for cleaning up : Gather the released powder not to blow away and wipe up with a wet cloth.
-

SECTION 7: Handling and storage

Precautions for safe handling

- : Do not attempt to force open or destroy the toner container or unit.
- See installation guide of this product.

Conditions for safe storage, including any incompatibilities

- : Keep the toner container or unit tightly closed and store in a cool, dry and dark place keeping away from fire. Keep out of the reach of children.
-

SECTION 8: Exposure controls/personal protection

Control parameters

(Reference data)

US ACGIH TLV (TWA)

Particles: 10 mg/m³ (Inhalable particles), 3 mg/m³ (Respirable particles)

Titanium dioxide: 10 mg/m³

US OSHA PEL (TWA)

Particles: 15 mg/m³ (Total dust), 5 mg/m³ (Respirable fraction)

Amorphous silica: 80 mg/m³/%SiO₂

Titanium dioxide: 15 mg/m³ (Total dust)

Exposure controls

Appropriate engineering controls

- : Special ventilator is not required under normal intended use.
- Use in a well ventilated area.

Personal protective equipment

- : Respiratory protection, eye protection, hand protection, skin and body protection are not required under normal intended use.



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Issue date: 09/11/2015

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SAFETY DATA SHEET

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Physical state	: Solid. (Fine powder)
Color	: Yellow.
Odor	: Odorless.
Odor threshold	: No data available.
pH	: No data available.
Melting point	: 100-120 °C (Toner)
Initial boiling point and boiling range	: No data available.
Flash point	: No data available.
Evaporation rate	: No data available.
Flammability (solid, gas)	: No data available.
Upper/lower flammability or explosive limits	: No data available.
Vapour pressure	: No data available.
Vapour density	: No data available.
Relative density	: 1.2-1.4 g/cm ³ (Toner)
Solubility(ies)	: Almost insoluble in water.
Partition coefficient: n-octanol/water	: No data available.
Auto-ignition temperature	: No data available.
Decomposition temperature	: No data available.
Viscosity	: No data available.
Explosive properties	: No data available.
Oxidising properties	: No data available.

Other information

Dust explosion properties : Dust explosion is improbable under normal intended use.
Experimental explosiveness of toner is classified into the same rank such kind of powder as flour, dry milk and resin powder according to the pressure rising speed.

SECTION 10: Stability and reactivity

Reactivity	: No data available.
Chemical stability	: This product is stable under normal conditions of use and storage.
Possibility of hazardous reactions	: Hazardous reactions will not occur.
Conditions to avoid	: None specified.
Incompatible materials	: None specified.
Hazardous decomposition products	: Hazardous decomposition products are not to be produced.



SDS No.: TK5197Y-KDA-03-EN

Issue date: 09/11/2015

Revision date: 12/11/2017

SAFETY DATA SHEET

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

Oral (LD₅₀) : > 2000 mg/kg (rat)
(Based on test result of similar product.) (Toner)

Dermal (LD₅₀) : No data available.
(Toner)

Inhalation (LC₅₀ (4hr)) : > 5.0 mg/l (rat)
(Based on test result of similar product.) (Toner)

Skin corrosion/irritation

Acute skin irritation : Non-irritant (rabbit)
(Based on test result of similar product.) (Toner)

Serious eye damage/irritation

Acute eye irritation : Minimal irritant (rabbit)
(Based on test result of similar product.) (Toner)

Respiratory or skin sensitisation

Skin sensitisation : Non-sensitiser (mouse)
(Based on test result of similar product.) (Toner)

Germ cell mutagenicity

: Ames Test is Negative.
(Toner)

Information of Ingredients : No mutagen, according to MAK, TRGS905 and (EC) No 1272/2008 Annex VI.

Carcinogenicity

Information of Ingredients : No carcinogen or potential carcinogen according to IARC, Japan Association on Industrial Health, ACGIH, EPA, OSHA, NTP, MAK, California Proposition 65, TRGS 905 and (EC) No 1272/2008 Annex VI.

(except titanium dioxide)

The IARC reevaluated titanium dioxide as a Group 2B carcinogen (possibly carcinogenic to humans) as the result of inhalation exposure test in rats. But, oral/skin test does not show carcinogenicity. (*2)

In the animal chronic inhalation studies for titanium dioxide, the lung tumor was observed in only rats. It is estimated that this is attributed to the overload of rat's lung clearance mechanism (overload phenomenon). (*3)

The inhalation of excessive titanium dioxide dose not occur in normal use of this product. Also, epidemiological studies to date have not revealed any evidence of the relation between occupational exposure to titanium dioxide and respiratory tract diseases.



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Issue date: 09/11/2015

Revision date: 12/11/2017

SAFETY DATA SHEET

Reproductive toxicity

- Information of Ingredients : No reproductive toxicant according to MAK, California Proposition 65, TRGS905 and (EC) No 1272/2008 Annex VI.
- STOT-single exposure : No data available.
- STOT-repeated exposure : No data available.
- Aspiration hazard : No data available.
- Chronic effects : In a study in rats by 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 (16 mg/m³) exposure group, and a minimal to mild degree of fibrosis was noted in 22% of the animal in the middle (4 mg/m³) exposure group. (*1)
But no pulmonary change was reported in the lowest (1 mg/m³) exposure group, the most relevant level to potential human exposures.
- Other information : No data available.

SECTION 12: Ecological information

- Ecotoxicity : No data available.
- Persistence and degradability : No data available.
- Bioaccumulative potential : No data available.
- Mobility in soil : No data available.
- Other adverse effects : No additional information available.

SECTION 13: Disposal considerations

Waste treatment methods

- : Do not attempt to incinerate the toner container or unit and the waste toner yourself. Dangerous sparks may cause burn.
Any disposal practice should be done under conditions which meet local, state and federal laws and regulations relating to waste (contact local or state environmental agency for specific rules).

SECTION 14: Transport information

- UN number : None.
- UN proper shipping name : None.
- Transport hazard class(es) : None.
- Packing group : None.
- Environmental hazards : None.
- Special precautions for user : No additional information available.
- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code : Not applicable.

SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

US regulations

All ingredients in this product comply with order under TSCA.

Canada regulations

This product is not a WHMIS-controlled product, since we consider it as a Manufactured article.

EU regulations

This product is not classified as hazardous mixture according to Regulation (EC) No 1272/2008 (CLP).

This product does not contain substances which present a health or environmental hazard within the meaning of CLP.



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Issue date: 09/11/2015

Revision date: 12/11/2017

SAFETY DATA SHEET

SECTION 16: Other information

To the best of our knowledge, the information contained herein is accurate. However, we cannot assume any liability whatsoever for the accuracy or completeness of the information contained herein.

The contents and format of this SDS are in accordance with Appendix D of 29 CFR 1910.1200.

Revision information	: SECTION 1 (Product name).
Version	: 03
Issue date	: 09/11/2015
Revision date	: 12/11/2017
Abbreviations and acronyms	
OSHA	: Occupational Safety and Health Administration (29 CFR Part 1910 Subpart Z)
HCS	: Hazard Communication Standard
CAS	: Chemical Abstracts Service
ACGIH	: American Conference of Governmental Industrial Hygienists 2016 TLVs and BEIs (Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices)
TLV	: Threshold Limit Values
PEL	: Permissible Exposure Limits
TWA	: Time Weighted Average
UN	: United Nations
IARC	: International Agency for Research on Cancer (IARC Monographs on the Evaluation of Carcinogenic Risks to Humans)
EPA	: Environmental Protection Agency (Integrated Risk Information System) (US)
NTP	: National Toxicology Program (Report on Carcinogens) (US)
MAK	: Maximale Arbeitsplatz-Konzentrationen (List of MAK and BAT Values 2011) (DFG: Deutsche Forschungsgemeinschaft)
Proposition 65	: California, Safe Drinking Water and Toxic Enforcement Act of 1986
TRGS905	: Technische Regeln für Gefahrstoffe (Deutschland)
STOT	: Specific target organ toxicity
TSCA	: Toxic Substances Control Act (US)
WHMIS	: Workplace Hazardous Materials Information System (Canada)
CLP	: Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures

Key literature references and sources for data

(*1) Pulmonary Response to Toner upon Chronic Inhalation Exposure in Rats H.Muhle et.al Fundamental and Applied Toxicology 17.280-299(1991)

Lung Clearance and Retention of Toner, Utilizing a Tracer Technique, during Chronic Inhalation Exposure in Rats B.Bellmann Fundamental and Applied Toxicology 17.300-313(1991)

(*2) IARC Monograph on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, Vol.93

(*3) NIOSH CURRENT INTELLIGENCE BULLETIN "Evaluation of Health Hazard and Recommendation for Occupational Exposure to Titanium Dioxide DRAFT"