KYOCERA Document Solutions

MATERIAL SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name	**Black Toner For TASKalfa 3500i, 3501i, 4500i, 4501i, 5500i, 5501i**
Manufacturer	KYOCERA Document Solutions Inc.
Address	KYOCERA Document Solutions Canada, Ltd. 6120 Kestrel Road, Mississauga, ON. L5T 1S8.
Telephone Number	905-696-2504
Date	February 03, 2016

Section 2. Composition/Information on Ingredients

Hazardous Components (Chemical Identity, Common Name/s)	OSHA PEL SubpartZ	ACGIH TLV	IARC	NTP	Weight%
(CAS No. 1333-86-4) Carbon Black	3.5mg/m^3 (TWA)	3.5mg/m^3(TWA)	Group2B	Not Listed	5-10
(CAS No. 66402-68-4) Ferrite (Ferrite including manganese)	5mg/m^3(Ceiling) (Manganese compounds (asMn))	0.2mg/m^3(TWA) (Manganese and inorganic compounds as Mn)	Not Listed	Not Listed	1-10 (as Mn:<2)
(CAS No. 7631-86-9) Amorphous silica	80mg/m^3/%SiO_2(TWA)	Not Listed	Group3	Not Listed	1-5
(CAS No. 13463-67-7) Titanium dioxide	15mg/m^3 (Total Dust) (TWA)	10mg/m^3(TWA)	Group 2B	Not Listed	<1
(Non Hazardous Ingredients)					
Polyester resin					65-75

Section 3. Hazards Identification

Most Important Hazards: None
Specific Hazards: None
Other Information on Hazards:
Potential Health Effects:
Ingestion: Ingestion is not applicable route of entry for intended use.
Inhalation: Prolonged inhalation of excessive dusts may cause lung damage.
Use of this product, as intended, does not result in inhalation of excessive dusts.
Eye Contact: May cause transient eye irritation.
Skin Contact: Unlikely to cause skin irritation.

Section 4. First Aid Measures

Inhalation	Remove from exposure to fresh air and gargle with plenty of water. Seek medical treatment in case of such a symptom as coughing.
Skin Contact	Wash with soap and water. If irritation does occur, seek medical treatment.
Eye Contact	Flush thoroughly with water and seek medical treatment if irritating.
Ingestion	Ingestion is not applicable route of entry for intended use. Rinse out mouth. Drink one or two glasses of water to dilute. Seek medical treatment if necessary.

Section 5. Fire Fighting Measures

Extinguishing Media	Water (Sprinkle with water), Foam, Powder, $C0_2$ or Dry Chemical Extinguisher.
Fire Fighting Procedure	Pay attention not to blow away toner powder. Drain water off around and decrease the atmosphere temperature to extinguish the fire.

Section 6. Accidental Release Measures

Personal Precautions	Avoid inhalation, ingestion, eye and skin contact in case of accidental toner release.
Environmental Precautions	Do not release into drains and surface water.
Method for Cleaning Up	Gather the released toner, not blowing away, and wipe up with a wet cloth.

Section 7. Handling and Storage

Handling	Keep the container tightly closed. Keep away from children.
Storage	Keep the container tightly closed and store in a cool, dry and dark place keeping away from fire. Keep away from children.

Section 8. Exposure Controls/Personal Protection

Control Parameters<Reference Data>

ACGIH $TLV_{(2)}$-TWA	Inhalable fraction $10mg/m^3$, Respirable fraction $3mg/m^3$
OSHA $PEL_{(3)}$-TWA	Total dust $15mg/m^3$, Respirable fraction $5mg/m^3$

Protective Equipment

Respiratory Protection	None required under normal use.
Eye/Face Protection	None required under normal use.
Skin/Hand/Body Protection	None required under normal use.
Ventilation	Ventilator is not required under normal use.

Section 9. Physical and Chemical Properties

Appearance	
Physical state	Solid
Form	Fine powder
Color	Black
Odor	Odorless
pH	Not applicable
Melting Point	100-120^{0}C[Toner]
Explosion Properties	Dust explosion is improbable under normal 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.
Density	1.2-1.4g/cm^3[Toner]
Solubility	Almost insoluble in water.

Section 10. Stability and Reactivity

Stability/Reactivity	Stable under normal use.
Hazardous Decomposition Products	None

Section 11. Toxicological Information

Acute oral toxicity	(rat)LD_{50}>2,000mg/kg (Estimated from other products containing same materials.)[Toner] (rat)LD_{50}>2,500mg/kg (Estimated from the data of constituent materials.)[Carrier]
Acute dermal toxicity	(rat)LD_{50}>2,000mg/kg (Estimated from Acute oral toxicity for same product.)[Toner] (rat)LD_{50}>2,000mg/kg (Estimated from the data of constituent materials.)[Carrier]
Acute inhalation toxicity	(rat)LC_{50}(4hr)>5.0mg/l (Estimated from other products containing same materials.)[Toner]
Acute eye irritation	(rabbit) Minimal irritant (Estimated from other products containing same materials.)[Toner]
Acute skin irritation	(rabbit) Non-irritant (Estimated from other products containing same materials.)[Toner] (rabbit) Non-irritant (Estimated from the data of constituent materials.)[Carrier]
Skin sensitization	(mouse)Non-Sensitiser (Estimated from other products containing same materials.)[Toner] (guinea pig)Non-Sensitiser (Estimated from the data of constituent materials.)[Carrier]
Mutagenicity	Ames Test is Negative.[Toner] Ames Test is Negative. (Estimated from the data of constituent materials.)[Carrier]
Information of Ingredients:	No mutagen, according to MAK, TRGS905 and (EC)No 1272/2008 AnnexVI Table3.2.
Reproductive Toxicity	
Information of Ingredients:	No reproductive toxicant, according to MAK, California Proposition 65, TRGS905 and (EC)No 1272/2008 AnnexVI Table3.2.
Carcinogenicity	
Information of Ingredients:	No carcinogen or potential carcinogen (except carbon black and titanium dioxide) according to IARC, Japan Association on Industrial Health, ACGIH, EPA, OSHA, NTP, MAK, California Proposition 65, TRGS 905, and (EC)No 1272/2008 AnnexVI Table3.2.

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. (4) 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).(5) The inhalation of excessive titanium dioxide does 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.

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 (16mg/m3) exposure group, and a minimal to mild degree of fibrosis was noted in 22% of the animal in the middle (4mg/m3) exposure group.(1) But no pulmonary change was reported in the lowest (1mg/m^3) exposure group, the most relevant level to potential human exposures.

Other Information: None

Section 12. Ecological Information

No data available.

Section 13. Disposal Considerations

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

Section 14. Transport Information

UN No.	None
UN Shipping Name	None
UN Classification	None
UN Packing Group	None
Special Precautions	None

Section 15. Regulatory Information

US Information
All components in this product comply with order under TSCA.

EU Information	Label information according to the Directives 67/548/EEC and 1999/45/EC
Symbol & Indication	Not required
R-Phrase	Not required
S-Phrase	Not required
Special markings	Not required
Hazardous ingredients for labeling	None

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

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.

<Reference>
(1) Pulmonary Response to Toner upon Chronic Inhalation Exposure in Rats H. Muhle et. al Fundamental and Applied Toxicology 17.280-299(1991)
(2) ACGIH TLV (Threshold Limit Values)
(3) OSHA PEL (Permissible Exposure Limits)
(4) IARC Monograph on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, Vol.93.
(5) NIOSH CURRENT INTELLIGENCE BULLETIN "Evaluation of Health Hazard and Recommendation for Occupational Exposure to Titanium Dioxide DRAFT".
*ISO 11014-1 Safety data sheet for chemical products.

<Abbreviation>

ACGIH	American Conference of Governmental Industrial Hygienists
OSHA	Occupational Safety and Health Administration
TWA	Time Weighted Average
IARC	International Agency for Research on Cancer
EPA	Environmental Protection Agency (USA)
NTP	National Toxicology Program
MAK	Maximale Arbeitsplatzkonzentrationen under Deutsche Forschungsgemeinschaft
Proposition 65:California	Safe Drinking Water and Toxic Enforcement Act of 1986.
TRGS905	Technische Regeln für Gefahrstoffe (Deutsche)
UN	United Nations
TSCA	Toxic Substances Control Act (USA)
WHMIS	Workplace Hazardous Materials Information System(Canada)

End of MSDS

KYOCERA Document Solutions

MATERIAL SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name	**Black Developer For TASKalfa 3500i, 3501i, 4500i, 4501i, 5500i, 5501i**
Manufacturer	KYOCERA Document Solutions Inc.
Address	KYOCERA Document Solutions Canada, Ltd. 6120 Kestrel Road, Mississauga, ON. L5T 1S8.
Telephone Number	905-696-2504
Date	February 03, 2016

Section 2. Composition/Information on Ingredients

Hazardous Components (Chemical Identity, Common Name/s)	OSHA PEL SubpartZ	ACGIH TLV	IARC	NTP	Weight%
(CAS No. 66402-68-4) Ferrite (Ferrite including manganese)	5mg/m^3(Ceiling) (Manganese compounds (asMn))	0.2mg/m^3(TWA) (Manganese and inorganic compounds as Mn)	Not Listed	Not Listed	85-95 (as Mn:15-20)
(CAS No. 1333-86-4) Carbon Black	3.5mg/m^3 (TWA)	3.5mg/m^3(TWA)	Group2B	Not Listed	<1
(Non Hazardous Ingredients)					
Polyester resin					5-10

Section 3. Hazards Identification

Most Important Hazards: None
Specific Hazards: None
Other Information on Hazards:
Potential Health Effects:

Ingestion	Ingestion is not applicable route of entry for intended use.
Inhalation	Prolonged inhalation of excessive dusts may cause lung damage. Use of this product, as intended, does not result in inhalation of excessive dusts.
Eye Contact	May cause transient eye irritation.
Skin Contact	Unlikely to cause skin irritation.

Section 4. First Aid Measures

Inhalation	Remove from exposure to fresh air and gargle with plenty of water. Seek medical treatment in case of such a symptom as coughing.
Skin Contact	Wash with soap and water. If irritation does occur, seek medical treatment.
Eye Contact	Do not rub eyes. Flush thoroughly with water and seek medical treatment if irritating.
Ingestion	Ingestion is not applicable route of entry for intended use. Rinse out mouth. Drink one or two glasses of water to dilute. Seek medical treatment if necessary.

Section 5. Fire Fighting Measures

Extinguishing Media	Water (Sprinkle with Water), Foam, Powder, $C0_2$ or Dry Chemical Extinguisher.
Fire Fighting Procedures	Pay attention not to blow away developer powder. Drain water off around and decrease atmosphere temperature to extinguish the fire.

Section 6. Accidental Release Measures

Personal Precautions	Avoid inhalation, ingestion, eye and skin contact in case of accidental developer release.
Environmental Precautions	Do not release into drains and surface water.
Method for Cleaning Up	Gather the released developer, not blowing away, and wipe up with a wet cloth.

Section 7. Handling and Storage

Handling	Keep the container tightly closed. Keep away from children.
Storage	Keep the container tightly closed and store in a cool, dry and dark place keeping away from fire. Keep away from children.

Section 8. Exposure Controls/Personal Protection

Control Parameters<Reference Data>	
ACGIH $TLV_{(2)}$-TWA	Inhalable fraction $10mg/m^3$, Respirable fraction $3mg/m^3$
OSHA $PEL_{(3)}$-TWA	Total dust $15mg/m^3$, Respirable fraction $5mg/m^3$
Protective Equipment	
Respiratory Protection	None required under normal use.
Eye/Face Protection	None required under normal use.
Skin/Hand/Body Protection	None required under normal use.
Ventilation	Ventilator is not required under normal use.

Section 9. Physical and Chemical Properties

Appearance	
Physical state	Solid
Form	Fine powder
Color	Black
Odor	Odorless
pH	Not applicable
Melting Point	No data available
Explosion Properties	Dust explosion is improbable under normal 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.
Density	3.5-5.0 g/cm^3
Solubility	Almost insoluble in water.

Section 10. Stability and Reactivity

Stability/Reactivity	Stable under normal use.
Hazardous Decomposition Products	None

Section 11. Toxicological Information

Acute oral toxicity	(rat)LD_{50}>2,000mg/kg (Estimated from other products containing same materials.)[Toner] (rat)LD_{50}>2,500mg/kg (Estimated from the data of constituent materials.)[Carrier]
Acute dermal toxicity	(rat)LD_{50}>2,000mg/kg (Estimated from Acute oral toxicity for same product.)[Toner] (rat)LD_{50}>2,000mg/kg (Estimated from the data of constituent materials.)[Carrier]
Acute inhalation toxicity	(rat)LC_{50}(4hr)>5.0mg/l (Estimated from other products containing same materials.)[Toner]
Acute eye irritation	(rabbit) Minimal irritant (Estimated from other products containing same materials.)[Toner]
Acute skin irritation	(rabbit) Non-irritant (Estimated from other products containing same materials.)[Toner] (rabbit) Non-irritant (Estimated from the data of constituent materials.)[Carrier]
Skin sensitization	(mouse)Non-Sensitiser (Estimated from other products containing same materials.)[Toner] (guinea pig)Non-Sensitiser (Estimated from the data of constituent materials.)[Carrier]
Mutagenicity	Ames Test is Negative.[Toner] Ames Test is Negative. (Estimated from the data of constituent materials.)[Carrier]
Information of Ingredients	No mutagen, according to MAK, TRGS905 and (EC)No 1272/2008; AnnexVI Table 3.2.
Reproductive Toxicity	
Information of Ingredients	No reproductive toxicant, according to MAK, California Proposition 65, TRGS905 and (EC)No 1272/2008 AnnexVI Table3.2.
Carcinogenicity	
Information of Ingredients	No carcinogen or potential carcinogen (except carbon black) according to IARC, Japan Association on Industrial Health, ACGIH, EPA, OSHA, NTP, MAK, California Proposition 65, TRGS905 and (EC)No 1272/2008 AnnexVI Table3.2.

The IARC reevaluated carbon black 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.(4) 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-year's cancer bioassay using a typical toner preparation containing carbon black demonstrated no association between toner exposure and tumor development in rats.(1)

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 (16mg/m^3) exposure group, and a minimal to mild degree of fibrosis was noted in 22% of the animal in the middle (4mg/m^3) exposure group.(1) But no pulmonary change was reported in the lowest (1mg/m^3) exposure group, the most relevant level to potential human exposures.

Other Information: None

Section 12. Ecological Information

No data available.

Section 13. Disposal Considerations

Do not incinerate developer and developer containers. 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 province environmental agency for specific rules).

Section 14. Transport Information

UN No.	None
UN Shipping Name	None
UN Classification	None
UN Packing Group	None
Special Precautions	None

Section 15. Regulatory Information

US Information
All components in this product comply with order under TSCA.
Canada Information
This product is not a WHMIS-controlled product, since we consider it as a Manufactured article.

EU Information	Label information according to the Directives 67/548/EEC and 1999/45/EC)
Symbol & Indication	Not required
R-Phrase	Not required
S-Phrase	Not required
Special markings	Not required
Hazardous ingredients for labeling	None

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.

<Reference>
(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
(2) ACGIH TLV (Threshold Limit Values)
(3) OSHA PEL (Permissible Exposure Limits)
(4) IARC Monograph on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, Vol.93.
*ISO 11014-1 Safety data sheet for chemical products.
<Abbreviation>

ACGIH	American Conference of Governmental Industrial Hygienists
OSHA	Occupational Safety and Health Administration
TWA	Time Weighted Average
IARC	International Agency for Research on Cancer
EPA	Environmental Protection Agency (USA)
NTP	National Toxicology Program
MAK	Maximale Arbeitsplatzkonzentrationen under Deutsche Forschungsgemeinschaft
Proposition 65:California	Safe Drinking Water and Toxic Enforcement Act of 1986.
TRGS905	Technische Regeln für Gefahrstoffe (Deutsche)
UN	United Nations
TSCA	Toxic Substances Control Act (USA)
WHMIS	Workplace Hazardous Materials Information System(Canada)

End of MSDS