



SAFETY DATA SHEET

DRAFT VERSION

1. Identification

Product identifier	HP Color LaserJet CF452A Yellow Print Cartridge
Other means of identification	Not available.
Recommended use	This product is a yellow toner preparation that is used in HP Color LaserJet M652 / HP Color LaserJet M681 / HP Color LaserJet M653 / HP Color LaserJet M682 series printers.
Recommended restrictions	None known.
Company identification	HP Inc. 1501 Page Mill Road Palo Alto, CA 94304-1112 United States Telephone 650-857-5020 HP Inc. health effects line (Toll-free within the US) 1-800-457-4209 (Direct) 1-760-710-0048 HP Inc. Customer Care Line (Toll-free within the US) 1-800-474-6836 (Direct) 1-208-323-2551 Email: hpcustomer.inquiries@hp.com

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
Environmental hazards	Not classified.
OSHA defined hazards	Not classified.
Label elements	
Hazard symbol	None.
Signal word	None.
Hazard statement	Not available.
Precautionary statement	
Prevention	Not available.
Response	Not available.
Storage	Not available.
Disposal	Not available.
Hazard(s) not otherwise classified (HNOC)	None of the ingredients have been classified as carcinogens according to EU, IARC, MAK, NTP, OSHA or ACGIH.
Supplemental information	This product is not classified as hazardous according to OSHA CFR 1910.1200 (HazCom 2012).

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Styrene acrylate copolymer		Trade Secret	<85
Wax	Wax	Trade Secret	<10
Pigment	Pigment	Trade Secret	<5
Titanium dioxide		13463-67-7	<1

4. First-aid measures

Inhalation	Move person to fresh air immediately. If irritation persists, consult a physician.
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Skin contact	Wash affected areas thoroughly with mild soap and water. Get medical attention if irritation develops or persists.
Eye contact	Do not rub eyes. Immediately flush with large amounts of clean, warm water (low pressure) for at least 15 minutes or until particles are removed. If irritation persists, consult a physician.
Ingestion	Rinse mouth out with water. Drink one to two glasses of water. If symptoms occur, consult a physician.
Most important symptoms/effects, acute and delayed	Not available.

5. Fire-fighting measures

Suitable extinguishing media	CO2, water, or dry chemical
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	Not applicable.
Special protective equipment and precautions for firefighters	Not available.
Fire-fighting equipment/instructions	If fire occurs in the printer, treat as an electrical fire.
Specific methods	None established.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Minimize dust generation and accumulation.
Methods and materials for containment and cleaning up	Not available.
Environmental precautions	Do not flush into surface water or sanitary sewer system. See also section 13 Disposal considerations.

7. Handling and storage

Precautions for safe handling	Keep out of the reach of children. Avoid inhalation of dust and contact with skin and eyes. Use with adequate ventilation. Keep away from excessive heat, sparks, and open flames.
Conditions for safe storage, including any incompatibilities	Keep out of the reach of children. Keep tightly closed and dry. Store at room temperature. Store away from strong oxidizers.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Titanium dioxide (CAS 13463-67-7)	PEL	15 mg/m3	Total dust.

US. ACGIH Threshold Limit Values

Components	Type	Value
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m3

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines	USA OSHA (TWA/PEL): 15 mg/m ³ (Total Dust), 5 mg/m ³ (Respirable Fraction) ACGIH (TWA/TLV): 10 mg/m ³ (Inhalable Particulate), 3 mg/m ³ (Respirable Particulate) Amorphous silica: USA OSHA (TWA/PEL): 20 mppcf 80 (mg/m ³)/%SiO ₂ , ACGIH (TWA/TLV): 10 mg/m ³ TRGS 900 (Luftgrenzwert) - 10 mg/m ³ (Einatembare partikel), 3 mg/m ³ (Alveolengängige fraktion) UK WEL: 10 mg/m ³ (Respirable Dust), 5 mg/m ³ (Inhalable Dust)
Appropriate engineering controls	Use in a well ventilated area.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Not available.
Skin protection	
Hand protection	Not available.
Other	Not available.
Respiratory protection	Not available.
Thermal hazards	Not available.

9. Physical and chemical properties

Appearance	Fine powder
Physical state	Solid.
Color	Yellow
Odor	Slight plastic odor
Odor threshold	Not available.
pH	Not applicable
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not applicable
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not flammable
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not applicable
Solubility(ies)	
Solubility (water)	Negligible in water. Partially soluble in toluene and xylene.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not applicable
Decomposition temperature	> 392 °F (> 200 °C)
Viscosity	Not applicable
Other information	
Percent volatile	0 % estimated
Softening point	176 - 266 °F (80 - 130 °C)
Specific gravity	1 - 1.2

10. Stability and reactivity

Reactivity	Not available.
Chemical stability	Stable under normal storage conditions.
Possibility of hazardous reactions	Will not occur.
Conditions to avoid	Imaging Drum: Exposure to light
Incompatible materials	Strong oxidizers
Hazardous decomposition products	Carbon monoxide and carbon dioxide.

11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics	Not available.
Information on toxicological effects	
Acute toxicity	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation	Based on available data, the classification criteria are not met.
Respiratory or skin sensitization	
Respiratory sensitization	Based on available data, the classification criteria are not met.
Skin sensitization	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Negative, does not indicate mutagenic potential (Ames Test: Salmonella typhimurium) Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Titanium dioxide (CAS 13463-67-7)	2B Possibly carcinogenic to humans.
Reproductive toxicity	Based on available data, the classification criteria are not met.
Specific target organ toxicity - single exposure	Based on available data, the classification criteria are not met.
Specific target organ toxicity - repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.
Further information	Complete toxicity data are not available for this specific formulation Refer to Section 2 for potential health effects and Section 4 for first aid measures.

12. Ecological information

Ecotoxicity

Product		Species	Test Results
HP Color LaserJet CF452A Yellow Print Cartridge			
Aquatic			
Algae	ErC50	Algae	> 100 mg/l, 72 Hours
Crustacea	EC50	Crustacea	> 100 mg/l, 48 Hours
Fish	LC50	Fish	> 100 mg/l, 96 Hours
Components			
Titanium dioxide (CAS 13463-67-7)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	> 1000 mg/l, 48 hours
Fish	LC50	Mummichog (Fundulus heteroclitus)	> 1000 mg/l, 96 hours

Persistence and degradability	Not available.
Bioaccumulative potential	Not available.
Mobility in soil	Not available.

Other adverse effects Not available.

13. Disposal considerations

Disposal instructions Do not shred toner cartridge, unless dust-explosion prevention measures are taken. Finely dispersed particles may form explosive mixtures in air. Dispose of in compliance with federal, state, and local regulations.

HP's Planet Partners (trademark) supplies recycling program enables simple, convenient recycling of HP original inkjet and LaserJet supplies. For more information and to determine if this service is available in your location, please visit <http://www.hp.com/recycle>.

14. Transport information

Further information Not a dangerous good under DOT, IATA, ADR, IMDG, or RID.

15. Regulatory information

US federal regulations US EPA TSCA Inventory: All chemical substances in this product comply with all rules or orders under TSCA.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

Other federal regulations

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Titanium dioxide (CAS 13463-67-7)

US. New Jersey Worker and Community Right-to-Know Act

Titanium dioxide (CAS 13463-67-7)

US. Pennsylvania Worker and Community Right-to-Know Law

Titanium dioxide (CAS 13463-67-7)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

TITANIUM DIOXIDE (AIRBORNE, UNBOUND PARTICLES OF RESPIRABLE SIZE) (CAS 13463-67-7) Listed: September 2, 2011

Regulatory information All chemical substances in this HP product have been notified or are exempt from notification under chemical substances notification laws in the following countries: US (TSCA), EU (EINECS/ELINCS), Switzerland, Canada (DSL/NDSL), Australia, Japan, Philippines, South Korea, New Zealand, and China.

16. Other information, including date of preparation or last revision

Issue date Draft version.

Material name: HP Color LaserJet CF452A Yellow Print Cartridge
14222 Version #: 00 Issue date: Draft version.

Version # Draft version.

Disclaimer This Safety Data Sheet document is provided without charge to customers of HP. Data is the most current known to HP at the time of preparation of this document and is believed to be accurate. It should not be construed as guaranteeing specific properties of the products as described or suitability for a particular application. This document was prepared to the requirements of the jurisdiction specified in Section 1 above and may not meet regulatory requirements in other countries.

Manufacturer information HP Inc.
11311 Chinden Boulevard
Boise, ID 83714 USA
(Direct) 1-503-494-7199
(Toll-free within the US) 1-800-457-4209

Explanation of abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstracts Service
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFR	Code of Federal Regulations
COC	Cleveland Open Cup
DOT	Department of Transportation
EPCRA	Emergency Planning and Community Right-to-Know Act (aka SARA)
IARC	International Agency for Research on Cancer
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
RCRA	Resource Conservation and Recovery Act
REC	Recommended
REL	Recommended Exposure Limit
SARA	Superfund Amendments and Reauthorization Act of 1986
STEL	Short-Term Exposure Limit
TCLP	Toxicity Characteristics Leaching Procedure
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
VOC	Volatile Organic Compounds



SAFETY DATA SHEET

DRAFT VERSION

1. Identification

Product identifier	HP Color LaserJet CF462X-XC Yellow Print Cartridge
Other means of identification	Not available.
Recommended use	This product is a yellow toner preparation that is used in HP Color LaserJet M652 / HP Color LaserJet M681 / HP Color LaserJet M653 / HP Color LaserJet M682 series printers.
Recommended restrictions	None known.
Company identification	HP Inc. 1501 Page Mill Road Palo Alto, CA 94304-1112 United States Telephone 650-857-5020 HP Inc. health effects line (Toll-free within the US) 1-800-457-4209 (Direct) 1-760-710-0048 HP Inc. Customer Care Line (Toll-free within the US) 1-800-474-6836 (Direct) 1-208-323-2551 Email: hpcustomer.inquiries@hp.com

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
Environmental hazards	Not classified.
OSHA defined hazards	Not classified.
Label elements	
Hazard symbol	None.
Signal word	None.
Hazard statement	Not available.
Precautionary statement	
Prevention	Not available.
Response	Not available.
Storage	Not available.
Disposal	Not available.
Hazard(s) not otherwise classified (HNOC)	None of the ingredients have been classified as carcinogens according to EU, IARC, MAK, NTP, OSHA or ACGIH.
Supplemental information	This product is not classified as hazardous according to OSHA CFR 1910.1200 (HazCom 2012).

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Styrene acrylate copolymer		Trade Secret	<85
Wax	Wax	Trade Secret	<10
Pigment	Pigment	Trade Secret	<5
Titanium dioxide		13463-67-7	<1

4. First-aid measures

Inhalation	Move person to fresh air immediately. If irritation persists, consult a physician.
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Skin contact	Wash affected areas thoroughly with mild soap and water. Get medical attention if irritation develops or persists.
Eye contact	Do not rub eyes. Immediately flush with large amounts of clean, warm water (low pressure) for at least 15 minutes or until particles are removed. If irritation persists, consult a physician.
Ingestion	Rinse mouth out with water. Drink one to two glasses of water. If symptoms occur, consult a physician.
Most important symptoms/effects, acute and delayed	Not available.

5. Fire-fighting measures

Suitable extinguishing media	CO2, water, or dry chemical
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	Not applicable.
Special protective equipment and precautions for firefighters	Not available.
Fire-fighting equipment/instructions	If fire occurs in the printer, treat as an electrical fire.
Specific methods	None established.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Minimize dust generation and accumulation.
Methods and materials for containment and cleaning up	Not available.
Environmental precautions	Do not flush into surface water or sanitary sewer system. See also section 13 Disposal considerations.

7. Handling and storage

Precautions for safe handling	Keep out of the reach of children. Avoid inhalation of dust and contact with skin and eyes. Use with adequate ventilation. Keep away from excessive heat, sparks, and open flames.
Conditions for safe storage, including any incompatibilities	Keep out of the reach of children. Keep tightly closed and dry. Store at room temperature. Store away from strong oxidizers.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Titanium dioxide (CAS 13463-67-7)	PEL	15 mg/m3	Total dust.

US. ACGIH Threshold Limit Values

Components	Type	Value
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m3

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines	USA OSHA (TWA/PEL): 15 mg/m ³ (Total Dust), 5 mg/m ³ (Respirable Fraction) ACGIH (TWA/TLV): 10 mg/m ³ (Inhalable Particulate), 3 mg/m ³ (Respirable Particulate) Amorphous silica: USA OSHA (TWA/PEL): 20 mppcf 80 (mg/m ³)/%SiO ₂ , ACGIH (TWA/TLV): 10 mg/m ³ TRGS 900 (Luftgrenzwert) - 10 mg/m ³ (Einatembare partikel), 3 mg/m ³ (Alveolengängige fraktion) UK WEL: 10 mg/m ³ (Respirable Dust), 5 mg/m ³ (Inhalable Dust)
Appropriate engineering controls	Use in a well ventilated area.

Individual protection measures, such as personal protective equipment

Eye/face protection	Not available.
Skin protection	
Hand protection	Not available.
Other	Not available.
Respiratory protection	Not available.
Thermal hazards	Not available.

9. Physical and chemical properties

Appearance	Fine powder
Physical state	Solid.
Color	Yellow
Odor	Slight plastic odor
Odor threshold	Not available.
pH	Not applicable
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not applicable
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not flammable
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not applicable
Solubility(ies)	
Solubility (water)	Negligible in water. Partially soluble in toluene and xylene.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not applicable
Decomposition temperature	> 392 °F (> 200 °C)
Viscosity	Not applicable
Other information	
Percent volatile	0 % estimated
Softening point	176 - 266 °F (80 - 130 °C)
Specific gravity	1 - 1.2

10. Stability and reactivity

Reactivity	Not available.
Chemical stability	Stable under normal storage conditions.
Possibility of hazardous reactions	Will not occur.
Conditions to avoid	Imaging Drum: Exposure to light
Incompatible materials	Strong oxidizers
Hazardous decomposition products	Carbon monoxide and carbon dioxide.

11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics	Not available.
Information on toxicological effects	
Acute toxicity	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation	Based on available data, the classification criteria are not met.
Respiratory or skin sensitization	
Respiratory sensitization	Based on available data, the classification criteria are not met.
Skin sensitization	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Negative, does not indicate mutagenic potential (Ames Test: Salmonella typhimurium) Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Titanium dioxide (CAS 13463-67-7)	2B Possibly carcinogenic to humans.
Reproductive toxicity	Based on available data, the classification criteria are not met.
Specific target organ toxicity - single exposure	Based on available data, the classification criteria are not met.
Specific target organ toxicity - repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.
Further information	Complete toxicity data are not available for this specific formulation Refer to Section 2 for potential health effects and Section 4 for first aid measures.

12. Ecological information

Ecotoxicity

Product		Species	Test Results
HP Color LaserJet CF462X-XC Yellow Print Cartridge			
Aquatic			
Algae	ErC50	Algae	> 100 mg/l, 72 Hours
Crustacea	EC50	Crustacea	> 100 mg/l, 48 Hours
Fish	LC50	Fish	> 100 mg/l, 96 Hours
Components			
Titanium dioxide (CAS 13463-67-7)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	> 1000 mg/l, 48 hours
Fish	LC50	Mummichog (Fundulus heteroclitus)	> 1000 mg/l, 96 hours

Persistence and degradability	Not available.
Bioaccumulative potential	Not available.
Mobility in soil	Not available.

Other adverse effects Not available.

13. Disposal considerations

Disposal instructions Do not shred toner cartridge, unless dust-explosion prevention measures are taken. Finely dispersed particles may form explosive mixtures in air. Dispose of in compliance with federal, state, and local regulations.

HP's Planet Partners (trademark) supplies recycling program enables simple, convenient recycling of HP original inkjet and LaserJet supplies. For more information and to determine if this service is available in your location, please visit <http://www.hp.com/recycle>.

14. Transport information

Further information Not a dangerous good under DOT, IATA, ADR, IMDG, or RID.

15. Regulatory information

US federal regulations US EPA TSCA Inventory: All chemical substances in this product comply with all rules or orders under TSCA.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

Other federal regulations

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Titanium dioxide (CAS 13463-67-7)

US. New Jersey Worker and Community Right-to-Know Act

Titanium dioxide (CAS 13463-67-7)

US. Pennsylvania Worker and Community Right-to-Know Law

Titanium dioxide (CAS 13463-67-7)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

TITANIUM DIOXIDE (AIRBORNE, UNBOUND PARTICLES OF RESPIRABLE SIZE) (CAS 13463-67-7) Listed: September 2, 2011

Regulatory information All chemical substances in this HP product have been notified or are exempt from notification under chemical substances notification laws in the following countries: US (TSCA), EU (EINECS/ELINCS), Switzerland, Canada (DSL/NDSL), Australia, Japan, Philippines, South Korea, New Zealand, and China.

16. Other information, including date of preparation or last revision

Issue date Draft version.

Version # Draft version.

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Manufacturer information HP Inc.
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(Toll-free within the US) 1-800-457-4209

Explanation of abbreviations

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EPCRA	Emergency Planning and Community Right-to-Know Act (aka SARA)
IARC	International Agency for Research on Cancer
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
RCRA	Resource Conservation and Recovery Act
REC	Recommended
REL	Recommended Exposure Limit
SARA	Superfund Amendments and Reauthorization Act of 1986
STEL	Short-Term Exposure Limit
TCLP	Toxicity Characteristics Leaching Procedure
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
VOC	Volatile Organic Compounds



SAFETY DATA SHEET

DRAFT VERSION

1. Identification

Product identifier	HP Color LaserJet CF472X-XC Yellow Print Cartridge
Other means of identification	Not available.
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Recommended restrictions	None known.
Company identification	HP Inc. 1501 Page Mill Road Palo Alto, CA 94304-1112 United States Telephone 650-857-5020 HP Inc. health effects line (Toll-free within the US) 1-800-457-4209 (Direct) 1-760-710-0048 HP Inc. Customer Care Line (Toll-free within the US) 1-800-474-6836 (Direct) 1-208-323-2551 Email: hpcustomer.inquiries@hp.com

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
Environmental hazards	Not classified.
OSHA defined hazards	Not classified.
Label elements	
Hazard symbol	None.
Signal word	None.
Hazard statement	Not available.
Precautionary statement	
Prevention	Not available.
Response	Not available.
Storage	Not available.
Disposal	Not available.
Hazard(s) not otherwise classified (HNOC)	None of the ingredients have been classified as carcinogens according to EU, IARC, MAK, NTP, OSHA or ACGIH.
Supplemental information	This product is not classified as hazardous according to OSHA CFR 1910.1200 (HazCom 2012).

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Mixtures

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Titanium dioxide		13463-67-7	<1

4. First-aid measures

Inhalation	Move person to fresh air immediately. If irritation persists, consult a physician.
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Skin contact	Wash affected areas thoroughly with mild soap and water. Get medical attention if irritation develops or persists.
Eye contact	Do not rub eyes. Immediately flush with large amounts of clean, warm water (low pressure) for at least 15 minutes or until particles are removed. If irritation persists, consult a physician.
Ingestion	Rinse mouth out with water. Drink one to two glasses of water. If symptoms occur, consult a physician.
Most important symptoms/effects, acute and delayed	Not available.

5. Fire-fighting measures

Suitable extinguishing media	CO2, water, or dry chemical
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	Not applicable.
Special protective equipment and precautions for firefighters	Not available.
Fire-fighting equipment/instructions	If fire occurs in the printer, treat as an electrical fire.
Specific methods	None established.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Minimize dust generation and accumulation.
Methods and materials for containment and cleaning up	Not available.
Environmental precautions	Do not flush into surface water or sanitary sewer system. See also section 13 Disposal considerations.

7. Handling and storage

Precautions for safe handling	Keep out of the reach of children. Avoid inhalation of dust and contact with skin and eyes. Use with adequate ventilation. Keep away from excessive heat, sparks, and open flames.
Conditions for safe storage, including any incompatibilities	Keep out of the reach of children. Keep tightly closed and dry. Store at room temperature. Store away from strong oxidizers.

8. Exposure controls/personal protection

Occupational exposure limits

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Components	Type	Value	Form
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US. ACGIH Threshold Limit Values

Components	Type	Value
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m3

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines	USA OSHA (TWA/PEL): 15 mg/m ³ (Total Dust), 5 mg/m ³ (Respirable Fraction) ACGIH (TWA/TLV): 10 mg/m ³ (Inhalable Particulate), 3 mg/m ³ (Respirable Particulate) Amorphous silica: USA OSHA (TWA/PEL): 20 mppcf 80 (mg/m ³)/%SiO ₂ , ACGIH (TWA/TLV): 10 mg/m ³ TRGS 900 (Luftgrenzwert) - 10 mg/m ³ (Einatembare partikel), 3 mg/m ³ (Alveolengängige fraktion) UK WEL: 10 mg/m ³ (Respirable Dust), 5 mg/m ³ (Inhalable Dust)
Appropriate engineering controls	Use in a well ventilated area.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Not available.
Skin protection	
Hand protection	Not available.
Other	Not available.
Respiratory protection	Not available.
Thermal hazards	Not available.

9. Physical and chemical properties

Appearance	Fine powder
Physical state	Solid.
Color	Yellow
Odor	Slight plastic odor
Odor threshold	Not available.
pH	Not applicable
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not applicable
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not flammable
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not applicable
Solubility(ies)	
Solubility (water)	Negligible in water. Partially soluble in toluene and xylene.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not applicable
Decomposition temperature	> 392 °F (> 200 °C)
Viscosity	Not applicable
Other information	
Percent volatile	0 % estimated
Softening point	176 - 266 °F (80 - 130 °C)
Specific gravity	1 - 1.2

10. Stability and reactivity

Reactivity	Not available.
Chemical stability	Stable under normal storage conditions.
Possibility of hazardous reactions	Will not occur.
Conditions to avoid	Imaging Drum: Exposure to light
Incompatible materials	Strong oxidizers
Hazardous decomposition products	Carbon monoxide and carbon dioxide.

11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics Not available.

Information on toxicological effects

Acute toxicity Based on available data, the classification criteria are not met.

Skin corrosion/irritation Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation Based on available data, the classification criteria are not met.

Respiratory or skin sensitization

Respiratory sensitization Based on available data, the classification criteria are not met.

Skin sensitization Based on available data, the classification criteria are not met.

Germ cell mutagenicity Negative, does not indicate mutagenic potential (Ames Test: Salmonella typhimurium)
Based on available data, the classification criteria are not met.

Carcinogenicity Based on available data, the classification criteria are not met.

IARC Monographs. Overall Evaluation of Carcinogenicity

Titanium dioxide (CAS 13463-67-7) 2B Possibly carcinogenic to humans.

Reproductive toxicity Based on available data, the classification criteria are not met.

Specific target organ toxicity - single exposure Based on available data, the classification criteria are not met.

Specific target organ toxicity - repeated exposure Based on available data, the classification criteria are not met.

Aspiration hazard Based on available data, the classification criteria are not met.

Further information Complete toxicity data are not available for this specific formulation
Refer to Section 2 for potential health effects and Section 4 for first aid measures.

12. Ecological information

Ecotoxicity

Product		Species	Test Results
HP Color LaserJet CF472X-XC Yellow Print Cartridge			
Aquatic			
Algae	ErC50	Algae	> 100 mg/l, 72 Hours
Crustacea	EC50	Crustacea	> 100 mg/l, 48 Hours
Fish	LC50	Fish	> 100 mg/l, 96 Hours

Components		Species	Test Results
Titanium dioxide (CAS 13463-67-7)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	> 1000 mg/l, 48 hours
Fish	LC50	Mummichog (Fundulus heteroclitus)	> 1000 mg/l, 96 hours

Persistence and degradability Not available.

Bioaccumulative potential Not available.

Mobility in soil Not available.

Other adverse effects Not available.

13. Disposal considerations

Disposal instructions Do not shred toner cartridge, unless dust-explosion prevention measures are taken. Finely dispersed particles may form explosive mixtures in air. Dispose of in compliance with federal, state, and local regulations.

HP's Planet Partners (trademark) supplies recycling program enables simple, convenient recycling of HP original inkjet and LaserJet supplies. For more information and to determine if this service is available in your location, please visit <http://www.hp.com/recycle>.

14. Transport information

Further information Not a dangerous good under DOT, IATA, ADR, IMDG, or RID.

15. Regulatory information

US federal regulations US EPA TSCA Inventory: All chemical substances in this product comply with all rules or orders under TSCA.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

Other federal regulations

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Titanium dioxide (CAS 13463-67-7)

US. New Jersey Worker and Community Right-to-Know Act

Titanium dioxide (CAS 13463-67-7)

US. Pennsylvania Worker and Community Right-to-Know Law

Titanium dioxide (CAS 13463-67-7)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

TITANIUM DIOXIDE (AIRBORNE, UNBOUND PARTICLES OF RESPIRABLE SIZE) (CAS 13463-67-7) Listed: September 2, 2011

Regulatory information All chemical substances in this HP product have been notified or are exempt from notification under chemical substances notification laws in the following countries: US (TSCA), EU (EINECS/ELINCS), Switzerland, Canada (DSL/NDSL), Australia, Japan, Philippines, South Korea, New Zealand, and China.

16. Other information, including date of preparation or last revision

Issue date Draft version.

Version # Draft version.

Disclaimer This Safety Data Sheet document is provided without charge to customers of HP. Data is the most current known to HP at the time of preparation of this document and is believed to be accurate. It should not be construed as guaranteeing specific properties of the products as described or suitability for a particular application. This document was prepared to the requirements of the jurisdiction specified in Section 1 above and may not meet regulatory requirements in other countries.

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Explanation of abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstracts Service
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFR	Code of Federal Regulations
COC	Cleveland Open Cup
DOT	Department of Transportation
EPCRA	Emergency Planning and Community Right-to-Know Act (aka SARA)
IARC	International Agency for Research on Cancer
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
RCRA	Resource Conservation and Recovery Act
REC	Recommended
REL	Recommended Exposure Limit
SARA	Superfund Amendments and Reauthorization Act of 1986
STEL	Short-Term Exposure Limit
TCLP	Toxicity Characteristics Leaching Procedure
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
VOC	Volatile Organic Compounds