



# SAFETY DATA SHEET

456C Toner

## Section 1. Identification

**GHS product identifier** : 456C Toner

**Product type** : Powder.

**Description :** **Part number :**

|  |                    |
|--|--------------------|
| Toner ASM 456C SS<br>Toner ASM 456C DR | 15S456C<br>15S455C |
|--|--------------------|

For actual printer/cartridge compatibility please reference [www.lexmark.com](http://www.lexmark.com)

**Application** : Laser Printer C2132, CS310, CS410, CS510, CX310, CX410, CX510, XC2130, XC2132

**Supplier's details** : Lexmark International, Inc.  
740 West New Circle Road  
Lexington, Ky 40550

**e-mail address of person responsible for this SDS** : rcassidy@lexmark.com

**Emergency telephone number (with hours of operation)** : Informations :1-859-232-2000  
Emergency:1-859-232-3333

ChemTel: US/Canada/Puerto Rico 1-800-255-3924  
International 1-813-248-0585  
(Collect calls accepted)  
24/7

## Section 2. Hazards identification

**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the substance or mixture** : COMBUSTIBLE DUSTS

Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 18.5%

### GHS label elements

**Signal word** : Warning

**Hazard statements** : May form combustible dust concentrations in air.

### Precautionary statements

**General** : Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

**Prevention** : Not applicable.

**Response** : Not applicable.

**Storage** : Not applicable.

**Disposal** : Not applicable.

**Supplemental label elements** : Keep container tightly closed. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Prevent dust accumulation.

## Section 2. Hazards identification

**Hazards not otherwise classified** : Fine dust clouds may form explosive mixtures with air. Handling and/or processing of this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose and throat.

## Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture

| Ingredient name  | %         | CAS number |
|------------------|-----------|------------|
| titanium dioxide | ≥0.3 - <1 | 13463-67-7 |

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.**

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
- Inhalation** : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

## Section 4. First aid measures

- Eye contact** : Adverse symptoms may include the following:  
irritation  
redness
- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing
- Skin contact** : No specific data.
- Ingestion** : No specific data.

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media** : Use dry chemical powder.
- Unsuitable extinguishing media** : Do not use water jet.

**Specific hazards arising from the chemical** : Fine dust clouds may form explosive mixtures with air.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
nitrogen oxides  
metal oxide/oxides

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

## Section 6. Accidental release measures

**Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

**Small spill** : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

**Large spill** : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

**Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing dust. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

**Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

**Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

## Section 8. Exposure controls/personal protection

| Ingredient name  | Exposure limits  |
|------------------|--|
| titanium dioxide | <b>ACGIH TLV (United States, 4/2014).</b><br>TWA: 10 mg/m <sup>3</sup> 8 hours.<br><b>OSHA PEL 1989 (United States, 3/1989).</b><br>TWA: 10 mg/m <sup>3</sup> 8 hours. Form: Total dust<br><b>OSHA PEL (United States, 2/2013).</b><br>TWA: 15 mg/m <sup>3</sup> 8 hours. Form: Total dust |

### Appropriate engineering controls

- : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

### Environmental exposure controls

- : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

#### Hygiene measures

- : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

#### Eye/face protection

- : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields. If operating conditions cause high dust concentrations to be produced, use dust goggles.

#### Skin protection

##### Hand protection

- : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

##### Body protection

- : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

##### Other skin protection

- : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

##### Respiratory protection

- : Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## Section 9. Physical and chemical properties

### Appearance

|  |                                 |
|--|---------------------------------|
| Physical state                               | : Solid (Finely divided solid.) |
| Color  | : Cyan                          |
| Odor   | : Faint odor (Plastic.)         |
| Odor threshold                               | : Not available.                |
| pH   | : Not available.                |
| Melting point                                | : Not determined.               |
| Boiling point                                | : Not available.                |
| Flash point                                  | : Not available.                |
| Burning time                                 | : Not available.                |
| Burning rate                                 | : Not available.                |
| Evaporation rate                             | : Not applicable.               |
| Flammability (solid, gas)                    | : Not available.                |
| Lower and upper explosive (flammable) limits | : Not available.                |
| Vapor pressure                               | : Not available.                |
| Vapor density                                | : Not applicable.               |
| Relative density                             | : Not determined.               |
| Solubility                                   | : Not available.                |
| Solubility in water                          | : Not available.                |
| Partition coefficient: n-octanol/water       | : Not available.                |
| Auto-ignition temperature                    | : Not available.                |
| Decomposition temperature                    | : Not available.                |
| SADT   | : Not available.                |
| Viscosity                                    | : Not available.                |

## Section 10. Stability and reactivity

|                                    |   |
|------------------------------------|---|
| Reactivity                         | : No specific test data related to reactivity available for this product or its ingredients.  |
| Chemical stability                 | : The product is stable.  |
| Possibility of hazardous reactions | : Under normal conditions of storage and use, hazardous reactions will not occur.   |
| Conditions to avoid                | : Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Prevent dust accumulation. |
| Incompatible materials             | : Reactive or incompatible with the following materials:<br>oxidizing materials   |
| Hazardous decomposition products   | : Under normal conditions of storage and use, hazardous decomposition products should not be produced.  |

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

| Product/ingredient name | Result    | Species | Dose        | Exposure |
|-------------------------|-----------|---------|-------------|----------|
| 456C Toner              | LD50 Oral | Rat     | >5000 mg/kg | -        |

#### Irritation/Corrosion

| Product/ingredient name | Result               | Species | Score | Exposure                             | Observation |
|-------------------------|----------------------|---------|-------|--------------------------------------|-------------|
| titanium dioxide        | Skin - Mild irritant | Human   | -     | 72 hours 300 Micrograms Intermittent | -           |

#### Sensitization

Not available.

#### Mutagenicity

| Product/ingredient name | Test                                     | Experiment        | Result   |
|-------------------------|--|-------------------|----------|
| 456C Toner              | OECD 471 Bacterial Reverse Mutation Test | Subject: Bacteria | Negative |

**Conclusion/Summary** : Not mutagenic in Ames test.

#### Carcinogenicity

Not available.

**Conclusion/Summary** : Low acute inhalation toxicity. As with exposure to high concentrations of any dust, minimal irritation of the respiratory tract may occur. Pure titanium dioxide, a minor component of this product, has been listed by IARC as a group 2B (possible carcinogen). This classification is based on rat "lung particulate overload" studies performed with airborne particulate. Toner is not listed by IARC, NTP, or OSHA.

#### Classification

| Product/ingredient name | OSHA | IARC | NTP |
|-------------------------|------|------|-----|
| titanium dioxide        | -    | 2B   | -   |

#### Reproductive toxicity

Not available.

#### Teratogenicity

Not available.

#### Specific target organ toxicity (single exposure)

Not available.

#### Specific target organ toxicity (repeated exposure)

Not available.

#### Aspiration hazard

Not available.

**Information on the likely routes of exposure** : Routes of entry anticipated: Dermal, Inhalation.

#### Potential acute health effects

**Eye contact** : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

## Section 11. Toxicological information

- Inhalation** : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:  
irritation  
redness
- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing
- Skin contact** : No specific data.
- Ingestion** : No specific data.

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

#### Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

#### Potential chronic health effects

Not available.

- General** : Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards. Toner is negative (nonmutagenic) in the Ames assay.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Not available.

## Section 12. Ecological information

### Toxicity



## Section 12. Ecological information

| Product/ingredient name | Result                                | Species                                    | Exposure |
|-------------------------|---------------------------------------|--|----------|
| titanium dioxide        | Acute LC50 3 mg/l Fresh water         | Crustaceans - Ceriodaphnia dubia - Neonate | 48 hours |
|                         | Acute LC50 6.5 mg/l Fresh water       | Daphnia - Daphnia pulex - Neonate          | 48 hours |
| 456C Toner              | Acute LC50 >1000000 µg/l Marine water | Fish - Fundulus heteroclitus               | 96 hours |
|                         | Acute EC50 >1000 mg/l                 | Daphnia                                    | 24 hours |
|                         | Acute EC50 >1000 mg/l                 | Daphnia                                    | 48 hours |

### Persistence and degradability

Not available.

### Bioaccumulative potential

| Product/ingredient name | LogP <sub>ow</sub> | BCF | Potential |
|-------------------------|--------------------|-----|-----------|
| titanium dioxide        | -                  | 352 | low       |

### Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Other adverse effects** : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

|                                   | DOT Classification | TDG Classification | Mexico Classification | ADR/RID        | IMDG           | IATA           |
|-----------------------------------|--------------------|--------------------|-----------------------|----------------|----------------|----------------|
| <b>UN number</b>                  | Not regulated.     | Not regulated.     | Not regulated.        | Not regulated. | Not regulated. | Not regulated. |
| <b>UN proper shipping name</b>    | -                  | -                  | -                     | -              | -              | -              |
| <b>Transport hazard class(es)</b> | -                  | -                  | -                     | -              | -              | -              |
| <b>Packing group</b>              | -                  | -                  | -                     | -              | -              | -              |

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## Section 14. Transport information

| Environmental hazards  | No. | No. | No. | No. | No. | No. |
|------------------------|-----|-----|-----|-----|-----|-----|
| Additional information | -   | -   | -   | -   | -   | -   |

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** : Not available.

## Section 15. Regulatory information

### United States

- TSCA (USA)** : All ingredients are listed on the Toxic Substances Control Act (TSCA) inventory, have been registered, or are exempt.
- SARA / EPCRA (USA)** : None of the ingredients in this product has a final reportable quantity (RQ) under Emergency Planning and Community Right-to Know Act (EPCRA)- Section 302: Extremely Hazardous Substances (EHS) or notification requirements for EHS under Section 304.
- California Prop. 65** : This product contains no known materials at levels which the State of California has found to cause cancer, birth defects or other reproductive harm - California Proposition 65.

### International regulations lists

- EINECS (Europe)** : All ingredients are listed on the European Inventory of Existing Commercial Substances (EINECS) list, have been registered on the European List of New Chemical Substances (ELINCS), or are exempt.
- REACH Status** : EU (REACH): All components of the toner formulation are registered, pre-registered or exempt under REACH. Pre-registered chemicals will be registered between 2011 and 2018.
- ENCS (Japan)** : All ingredients are listed on the Japanese Existing and New Chemical Substances (ENCS) list, have been registered, or are exempt.
- AICS (Australia)** : All ingredients are listed in Australian Inventory of Chemical Substances (AICS), have been registered, or are exempt.
- Philippines inventory (PICCS)** : All ingredients are listed on the Philippines Inventory (PICCS) or are exempt.
- Korea inventory (KECI)** : All ingredients are listed on the Korean Existing Chemicals List (ECL), have been registered, or are exempt.
- China inventory (IECSC)** : All ingredients are listed on the Chinese inventory (IECSC) or are exempt.

### Canada

- WHMIS (Canada)** : Not controlled under WHMIS (Canada).
- DSL/NDSL** : All ingredients are listed on the Canadian Domestic Substances List (DSL), have been registered on the Non-Domestic Substances List (NDSL), or are exempt.

**Mexico Classification** : Health: 1 Flammability: 1 Reactivity: 0

## Section 16. Other information

### History

**Date of issue/Date of revision** : 4/29/2015.

**Date of previous issue** : 4/15/2015.

**Version** : 3

### Key to abbreviations

: ATE = Acute Toxicity Estimate  
 BCF = Bioconcentration Factor  
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
 IATA = International Air Transport Association  
 IBC = Intermediate Bulk Container  
 IMDG = International Maritime Dangerous Goods  
 LogPow = logarithm of the octanol/water partition coefficient  
 MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
 UN = United Nations

### References

: HCS (U.S.A.)- Hazard Communication Standard  
 International transport regulations  
 IATA Dangerous Goods Regulation (DGR) 55th Edition 2014

✔ Indicates information that has changed from previously issued version.

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.