

# 1. IDENTIFICATION OF THE SUBSTANCE PREPARATION AND COMPANY UNDERTAKING

## 1.1 **PRODUCT IDENTIFIER**

Product name:Extended Yield Toner Cartridge for HP CF281A (HP 81A)Part number:HPCF281AUX

## 1.2 **IDENTIFIED USES AND USES ADVISED AGAINST**

For use in: Laser Printers

## 1.3 SUPPLIER DETAILS

| Supplier:      | Clover Imaging Group       |
|----------------|----------------------------|
|                | 4200 Columbus Street       |
|                | Ottawa, IL 61350           |
|                | United States              |
|                | Phone number: 815-431-8100 |
|                | Fax: 815-461-8583          |
| Contact Hours: | 08:00AM-05:00PM CST        |
|                |                            |

#### 1.4 **EMERGENCY TELEPHONE NUMBERS**

Supplier: 815-431-8100

\* This document provides safety-related information about ink/toner, in various forms, for use in copiers/printers etc.

# 2. HAZARDS IDENTIFICATION

## 2.1 INFORMATION and CLASSIFICATION

#### Overview:

GHS classification of the mixture: Not classified as hazardous. Other hazards which do not result in classification: Physical hazards - This mixture, like most organic powders, can cause a dust explosion if particles form thick clouds; Carcinogenicity - None of the substances in this mixture is classified for carcinogenicity by IARC or OSHA. Other information: This mixture is not classified as hazardous according to OSHA Hazard Communication Standard 29 CFR 1910.1200; This mixture complies with the requirements of the RoHS Directive 2011/65/EU and its amendment directives.

## 2.2 LABEL ELEMENTS

| Applicable Pictograms: | NO<br>PICTOGRAM |   |
|------------------------|-----------------|---|
| Danger Indications:    | Warning         | - Combustible Dust - May form combustible dust concentrations in air. |
| Risk Phrases:          | N/A             |   |
| Safety Phrases:        | N/A             |   |

#### 2.3 OTHER HAZARDS

PBT or vPvB: N/A



# 3. COMPOSITION / INFORMATION ON INGREDIENTS

| Ingredients                   | CAS number   | Weight % | OSHA<br>PEL   | ACGIH<br>TLV       | Other  |
|-------------------------------|--------------|----------|---|--------------------|--|
| Styrene Acrylate<br>Copolymer | TRADE SECRET | 40-60    |   |                    | TSCA listed/exempted: Yes  |
| Iron Oxide                    | 1317-61-9    | 35-55    | 10 mg/m3  | 5 mg/m3            | TSCA listed/exempted: Yes  |
| Amorphous Silica              | 7631-86-9    | <5       | 20 mppcf*<br>or 80/%<br>SiO2 mg/m3<br>(* million<br>particles<br>per cubic<br>foot) | Not<br>established | TSCA listed/exempted: Yes  |
| Wax                           | TRADE SECRET | 1-10     |   |                    | TSCA listed/exempted: Yes  |
|                               |              |          | TWA: 15<br>mg/m3<br>(Total dust),<br>5 mg/m3<br>(Respirable<br>fraction)            | particulate),      | Mixture as particulate not<br>otherwise classified. Refer to<br>Section 8 for information on<br>exposure limits and Section 11 for<br>toxicological information. |

The Full Text for all R-Phrases are Displayed in Section 16 COMPOSITION COMMENTS

The Data Shown is in accordance with the latest Directives.

This section provides composition information for the specified substance/mixture.

# 4. FIRST-AID MEASURES

## 4.1 FIRST AID MEASURES

# 4.1.1 FIRST AID INSTRUCTIONS BY RELEVANT ROUTES OF EXPOSURE

| Inhalation:   | Provide fresh air immediately. If symptoms occur, seek medical advice.   |
|---------------|--|
| Eye contact:  | Do not rub eyes. Immediately rinse with plenty of clean running water until particles are washed out. If irritation persists, seek medical advice. |
| Skin contact: | Wash out particles with plenty of water and soap. If irritation develops, seek medical advice.   |
| Ingestion:    | Clean mouth out with water. Drink several glasses of water. If sickness develops, seek medical advice.   |

## 4.1.2 ADDITIONAL FIRST AID INFORMATION

Additional first aid information:N/AImmediate Medical Attention Required:Immediate medical attention may be required in the unlikely event of extreme<br/>inhalation, eye contact or unusual reaction due to physical idiosyncrasy of the<br/>person.

## 4.2 SYMPTOMS AND EFFECTS

| Acute Symptoms from Exposure:   | Eye contact: Irritation may occur by mechanical abrasion. Skin contact: Minimal skin<br>irritation may occur. Inhalation: Slight irritation of respiratory tract may occur with<br>exposure to large amount of toner dust. Ingestion: Ingestion is an unlikely route of<br>entry under normal conditions of use. |
|---------------------------------|--|
| Delayed Symptoms from Exposure: | N/A  |

# 4.3 IMMEDIATE SPECIAL TREATMENT OR EQUIPMENT REQUIRED

N/A



# 5. FIRE-FIGHTING MEASURES

## 5.1 EXTINGUISHING MEDIA

| Recommended Extinguishing Media:    | Water, foam, dry chemical. |
|-------------------------------------|----------------------------|
| Extinguishing Media Not to be Used: | None known.                |

#### 5.2 SPECIAL HAZARD

Unusual Fire/Explosion Hazards:

Toner, like most organic powders, is capable of creating a dust explosion when particles form thick clouds. Carbon monoxide and carbon dioxide are hazardous resulting gases. N/A

Extinguishing Media Not to be Used:

### 5.3 ADVICE FOR FIRE FIGHTERS

Avoid inhalation of smoke. Wear protective clothing and wear self-contained breathing apparatus

## 6. ACCIDENTAL RELEASE MEASURES

## 6.1 **PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES**

## 6.1.1 **PRECAUTIONS FOR NON-EMERGENCY PERSONNEL**

Avoid dust formation. Do not breathe dust.

## 6.1.2 ADDITIONAL FIRST AID INFORMATION

N/A

#### 6.1.3 PERSONAL PROTECTION

Wear personal protective equipment as described in Section 8.

# 6.2 ENVIRONMENTAL PRECAUTIONS

Regulatory Information: Keep product out of sewers and watercourses.

#### 6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANUP

Spill or Leak Cleanup Procedures: Eliminate sources of ignition and flammables. Shelter the released material (powder) from wind to avoid dust formation and scattering. Vacuum or sweep the material into a sealed container. If a vacuum cleaner is used, it must be dust explosion-proof. Dispose of the material in accordance with Federal/state/local requirements.

# 7. HANDLING AND STORAGE

#### 7.1 PRECAUTIONS FOR SAFE HANDLING

Recommendations for Handling:No special precautions when used as intended. Keep containers closed. If toner, avoid<br/>creating dust. Keep away from ignition sources.Advice on General Hygiene:Never eat, drink or smoke in work areas. Practice good personal hygiene after using this<br/>material, especially before eating, drinking, smoking, using the restroom, or applying<br/>cosmetics.

#### 7.2 CONDITIONS FOR SAFE STORAGE

Avoid high temperatures, >100°F/32°C

#### 7.3 SPECIFIC END USES

Printing devices

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1 CONTROL PARAMETERS

The best protection is to enclose operations and/or provide local exhaust ventilation at the site of chemical release in order to maintain airborne concentrations of the product below OSHA PELs (See Section 3). Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

#### 8.2 EXPOSURE CONTROLS

#### **Respiratory protection:**

IMPROPER USE OF RESPIRATORS IS DANGEROUS. Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134 and 1910.137) and, if necessary, wear a NIOSH approved respirator. Select respirator based on its suitability to provide adequate worker protection for given work conditions, levels of airborne contamination, and sufficient levels of oxygen.

#### **Eye/Face Protection:**

Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.

#### Hand/Skin Protection:

For emergency or non-routine operations (cleaning spills, reactor vessels, or storage tanks), wear an SCBA. WARNING! Air purifying respirators do not protect worker in oxygen deficient atmospheres.

#### Additional Protection:

N/A

#### **Protective Clothing and Equipment:**

Wear chemically protective gloves, boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. Wear splashproof chemical goggles and face shield when working with liquid, unless full face piece respiratory protection is worn.

#### Safety Stations:

Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

#### **Contaminated Equipment:**

Separate contaminated work clothes from street clothes. Launder before reuse. Remove material from your shoes and clean personal protective equipment. Never take home contaminated clothing.

#### Comments:

Never eat, drink or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the restroom, or applying cosmetics.

# 9. PHYSICAL AND CHEMICAL PROPERTIES

# 9.1 **DETAIL INFORMATION**

| Physical state:            | APPEARANCE: Fine black powder. |
|----------------------------|--------------------------------|
| Color:                     | Black                          |
| Odor:                      | None or slight plastic odor    |
| Odor threshold:            | N/A                            |
|                            |                                |
| Boiling point:             | N/A                            |
| Melting point:             | N/A                            |
| Flash point:               | N/A                            |
| Explosion limits:          | N/A                            |
| Relative density:          | 1.5-2.5                        |
| Auto-ignition temperature: | N/A                            |
|                            |                                |

## 9.2 OTHER INFORMATION

FLAMMABILITY: Not flammable by burning rate DOT/UN test N.1 (similar product). SOLUBILITY: Negligible in water. Partially soluble in some organic solvents such as Toluene and Tetrahydrofuran.

# **10. CHEMICAL STABILITY AND REACTIVITY**

# 10.1 Reactivity:

| Reactivity Hazards:<br>Data on Mixture Substances: | None<br>None  |
|--|---|
| 10.2 Chemical Stability:                           | The product is stable. Under normal conditions of storage and use, hazardous polymerization will not occur. |
| 10.3 Hazardous Polymerization:                     | Stable under conditions of normal use.  |
| 10.4 Conditions to Avoid:                          | Keep away from heat, flame, sparks and other ignition sources.  |
| 10.5 Incompatible Materials:                       | Strong oxidizing materials  |
| 10.6 Hazardous Decomposition:                      | Will not occur.   |



# **11. INFORMATION ON TOXICOLOGICAL EFFECT**

| Nixtures:According to our test results of this or similar mixture, and the information provided by the<br>suppliers about the substances contained in this mixture, seriously dymaging effect is not<br>rederal/state/local requirements. Refer to Section 2 for potential health effects and Section 4 for<br>first aid measures.Acute Toxicity:N/A<br>N/A<br>Senious Eye Damage:<br>Inhalation:N/A<br>N/A<br>N/A<br>N/A<br>Senious Eye Damage:<br>N/A<br>N/A<br>Senious Eye Damage:<br>N/A<br>No test data available. None of the substances in this mixture is classified as a<br>respiratory sensitizer.<br>N/A<br>No test data available. None of the substances in this mixture is classified for reproductive toxicity:<br>N/A<br>No test data available. Inhalation tests of a toner for two years showed no significant<br>carcinogenicity. (Reference 1 - Test Data) In rats, chronic exposure to toner concentrations 4<br>carcindgenicity. (Reference 1 - Test Data) In rats, chronic exposure to toner concentrations<br>or signify 3 and over lead to an accumulation of particles in the lung series of this generations of the specific to toner dust but is generally observed when high concentrations of the signify soluble<br>dusts are inhaled. The lowesh-observable-effect-level (IOEL) was a mg/m3 and the no-observable-<br>effect-level (NOEL) was a mg/m3 and the n   |                            |   |
|--|----------------------------|---|
| Federal/state/local requirements. Refer to Section 2 for potential health effects and Section 4 for<br>first aid measures.Acute Toxicity:N/ASkin Corrosion/Irritation:N/ASerious Eye Damage:N/AInhalation:N/ABensitizzation:Respiratory: No test data available. None of the substances in this mixture is classified as a<br>respiratory sensitizer.Mutagenicity:Arnestest (Salmonella typhimurium, Escherichia coli) negative. (a similar product)Carcinogenicity:N/AReproductive Toxicity:N/ASTOT - Single Exposure:N/ASTOT - Single Exposure:N/AMarket Damage:N/ASTOT - Multiple Exposure:N/ASTOT - Multiple Exposure:N/AN/Amg/m3 and over lead to an accumulation of particles in the lung as well as to persistent<br>inflammatory processes and slight to moderate fibrotic changes in the lungs of rats. In hamsters,<br>these effects were only observed at significantly higher concentrations (> 20 mg/m3). The particle<br>accumulation in the lung tissue of the experimental animals is attributed to a damage and<br>overload of the lung clearance mechanisms and is called "lung overloading". This is not an effect<br>specific to torer dust but is generally observed when high concentrations of ther, slightly soluble<br>dusts are inhaled. The lowest-observable-effect-level (LOCL) was 4 mg/m3 and the no-observable-<br>effect-level (LOCL) was 4 mg/m3 in hamsters.<br>(Reference 2 - Test Data) Toner concentration under the normal use of this product is estimated to<br>be less than 1 mg/m3.<br>N/AHazard Class Information:N/AJudation exposure in Tats. "Fundam. Appl. Toxicol. 17 (1991) p.300-313. "Lung clearance <br< th=""><th>Mixtures:</th><th>suppliers about the substances contained in this mixture, seriously damaging effect is not</th></br<>  | Mixtures:                  | suppliers about the substances contained in this mixture, seriously damaging effect is not              |
| Acute Toxicity:N/ASkin Corrosion/Irritation:N/ASerious Eye Damage:N/AInhalation:N/ASenius Eye Damage:N/AInhalation:N/ASenius Eye Damage:N/AInhalation:N/ASenitzation:Respiratory: No test data available. None of the substances in this mixture is classified as a<br>respiratory sensitizer.Mutagenicity:Armes test (Salmonella typhimurium, Escherichia coli) negative. (a similar product)Carcinogenicity:N/AReproductive Toxicity:N/ASTOT - Multiple Exposure:N/AN/ANo test data available. Inhalation tests of a toner for two years showed no significant<br>carcinogenicity; (Reference 1 - Test Data) In rats, chronic exposure to toner concentrations 4<br>mg/M3 and over lead to an accumulation of particles in the lungs awell as to persistent<br>inflammatory processes and slight to moderate fibratic changes in the lungs of rats. In hamsters,<br>these effects were only observed at significantly higher concentrations (> 20 gm/M3). The particle<br>accumulation in the lung tissue of the experimental animalis is attributed to a damage and<br>overload of the lung clearance mechanisms and is called "lung overloading". This is not an effect<br>specific to toner dust but is generally observed when high concentrations (> 20 gm/M3). The particle<br>accumulation in the lowest-observable-effect-level (LOEL) was 4 mg/M3 and the no-observable-<br>effect-level (NOEL) was 1 mg/m3.Ingestion:N/AMixture on Market Data:<br>N/AMyADelayed/Immediate Effects:N/AReproduct Data on Mixture:Reference 1) "Negative Effect of Long-term Inhalation of Toner on Formatio   |                            | expected when this mixture is treated in accordance with standard industrial practices and              |
| Acute Toxicity:       WA         Skin Corrosion/Irritation:       N/A         Serious Eye Damage:       N/A         Inhalation:       N/A         Sensitization:       Respiratory: No test data available. None of the substances in this mixture is classified as a respiratory sensitizer.         Mutagenicity:       Ames test (Salmonella typhimurium, Escherichia coli) negative. (a similar product)         Carcinogenicity:       No test data available. None of the substances in this mixture is classified for reproductive toxicity.         STOT - Single Exposure:       No test data available. None of the substances in this mixture is classified for reproductive toxicity.         N/A       No test data available. Inhalation tests of a toner for two years showed no significant carcinogenicity. (Reference 1 - Test Data) In rats, chronic exposure to toner concentrations 4 mg/m3 and over lead to an accumulation of particles in the lung as well as to persistent inflammatory processes and slight to moderate fibrotic changes in the lung or fast. In hamsters, these effects were only observed at significantly higher concentrations of other, slightly soluble dusts are inhaled. The lowset-observable-effect-level (LOEL) was 4 mg/m3 and the no-observable-effect level (NOEL) was 1 mg/m3.         Ingestion:       N/A         Hazard Class Information:       N/A         My       N/A         Delayed/Immediate Effect:       N/A         Mixture on Market Data:       N/A         Puspadyed/ongenice Effects:       N/A <th></th> <th>Federal/state/local requirements. Refer to Section 2 for potential health effects and Section 4 for</th>   |                            | Federal/state/local requirements. Refer to Section 2 for potential health effects and Section 4 for     |
| Skin Corrosion/Irritation:N/ASerious Eye Damage:N/AInhalation:N/ASensitization:Respiratory: No test data available. None of the substances in this mixture is classified as a<br>respiratory sensitizer.Mutagenicity:Ames test (Salmonella typhimurium, Escherichia coli) negative. (a similar product)Carcinogenicity:N/AReproductive Toxicity:N/ASTOT - Single Exposure:N/ASTOT - Multiple Exposure:N/AMutagenicity:(Reference 1 - Test Data) In rats, chronic exposure to tomer concentrations 4mg/m3 and over lead to an accumulation on particles in the lung as well as to persistent<br>inflammatory processes and slight to moderate fibrotic changes in the lungs of rats. In hamsters,<br>these effects were only observed at significantly higher concentrations (> 20 mg/m3). The particle<br>accumulation in the lung tissue of the experimental animals is attributed to a damage and<br>overload of the lung clearance mechanisms and is called "lung overloading". This is not an effect<br>specific to toner dust but is generally observed when high concentrations of other, slightly soluble<br>effect-level (NOEL) was 1 mg/m3 in rats. The NOEL was 4 mg/m3 and the no-observable-<br>effect. I set Data) no Market Data:<br>N/AIngestion:N/AHazard Class Information:N/APalayed/immediate Effects:<br>N/A <tr< th=""><th></th><th>first aid measures.</th></tr<>  |                            | first aid measures.   |
| Serious Eye Damage:<br>Inhalation:N/A<br>N/A<br>N/A<br>Bensitization:N/A<br>N/A<br>Respiratory: No test data available. None of the substances in this mixture is classified as a<br>respiratory sensitizer.Mutagenicity:<br>Carcinogenicity:<br>N/AAmestest (Salmonella typhimurium, Escherichia coli) negative. (a similar product)<br>N/AKeproductive Toxicity:<br>STOT - Single Exposure:<br>STOT - Multiple Exposure:<br>STOT - Multiple Exposure:<br>N/ANo test data available. Inhalation tests of a toner for two years showed no significant<br>carcinogenicity. (Reference 1 - Test Data) In rats, chronic exposure to toner concentrations 4<br>mg/m3 and over lead to an accumulation of particles in the lung as well as to persistent<br>inflammatory processes and significantly higher concentrations (> 20 mg/m3). The particle<br>accumulation in the lung tissue of the experimental animals is attributed to a damage and<br>overload of the lung clearance mechanisms and is called "lung overloading". This is not an effect<br>specific to toner dust but is generally observed when high concentrations of other, slightly soluble<br>dusts are inhaled. The lowest-observable-effect-level (LOEL) was 4 mg/m3 and the no-observable-<br>effect-level (NOEL) was 1 mg/m3 in rats. The NOEL was greater than 6 mg/m3 in hamsters.<br>(Reference 2 - Test Data) Toner concentration under the normal use of this product is estimated to<br>be less than 1 mg/m3.Ingestion:<br>Hazard Class Information:<br>MiX<br>N/AN/AN/A<br>Delayed/Immediate Effect:<br>N/AN/ADelayed/Immediate Effect:<br>N/AN/AN/A<br>Delayed/Immediate Effect:<br>exploxyguanosine in DNA in the Lungs of Asin Vivo". Yasuo Morimoto, et. Al., Inhalation<br>strug of chronic inhalation exposure in rats." Flundam. Appl. Toxicol. 17 (1991) p.300-313. "Lung clearance<br>and retention of toner,  | Acute Toxicity:            | N/A   |
| Inhalation:N/ASensitization:N/ARespiratory: No test data available. None of the substances in this mixture is classified as a<br>respiratory: sensitizer.Mutagenicity:Ames test (Salmonella typhimurium, Escherichia coli) negative. (a similar product)Carcinogenicity:N/ANo test data available. None of the substances in this mixture is classified for reproductive toxicity.STOT - Multiple Exposure:N/ANo test data available. Inhalation tests of a toner for two years showed no significant<br>carcinogenicity: (Reference 1 - Test Data) In rats, chronic exposure to toner concentrations 4<br>mg/m3 and over lead to an accumulation of particles in the lung as suel as to persistent<br>inflammatory processes and slight to moderate fibrotic changes in the lungs of rats. In hamsters,<br>these effects were only observed with significantly higher concentrations of other, slightly soluble<br>dusts are inhaled. The lowest-observable-effect-level (LOEL) was 4 mg/m3 and the no-observable-<br>effect-level (NOEL) was 1 mg/m3 in rats. The NOEL was greater than 6 mg/m3 in hamsters.<br>(Reference 2 - Test Data) Toner concentration under the normal use of this product is estimated to<br>be less than 1 mg/m3.<br>N/AIngestion:N/AMixture on Market Data:<br>N/AMac<br>Mixture on Market Data:N/AN/ADelayed/immediate Effects:<br>inhalation exposure in TDNA in the Lungs of Rats in Vivo", Yasuo Morimoto, et. Al., Inhalation<br>Toxicolay, Vol. 17 (13) p.749-753 (2005), (Reference 2) (Zudies by Muhle, Bellmann,<br>Teetzenberg et al. "Lung clearance and retention of toner, vultiling a tracer technique during<br>chronic inhalation exposure in rats." Fundam. Appl. Toxicol. 17 (1991) p.300-313. "Lung clearance<br>and retention of toner, TiO2, and cry   | Skin Corrosion/Irritation: | N/A   |
| Sensitization:Respiratory: No test data available. None of the substances in this mixture is classified as a<br>respiratory sensitizer.Mutagenicity:Amest test (Salmonella typhimurium, Escherichia coli) negative. (a similar product)Carcinogenicity:N/AReproductive Toxicity:No test data available. None of the substances in this mixture is classified for reproductive toxicity.STOT - Single Exposure:N/ASTOT - Multiple Exposure:No test data available. Inhalation tests of a toner for two years showed no significant<br>carcinogenicity. (Reference 1 - Test Data) In rats, chronic exposure to toner concentrations 4<br>mg/m3 and over lead to an accumulation of particles in the lungs or alts. In harsters,<br>these effects were only observed at significantly higher concentrations (> 20 mg/m3). The particle<br>accumulation in the lung tissue of the experimental animals is attributed to a damage and<br>overload of the lung clearance mechanisms and is called "lung overloading". This is not an effect<br>specific to toner dust but is generally observed when high concentrations of other, slightly soluble<br>dusts are inhaled. The lowest-observable-effect-level (LOEL) was 4 mg/m3 and the no-observable<br>effect-level (NOEL) was 1 mg/m3 in rats. The NOEL was greater than 6 mg/m3 in hamsters.<br>(Reference 2 - Test Data) Toner concentration under the normal use of this product is estimated to<br>be less sthan 1 mg/m3.Hazard Class Information:N/AHazard Class Information:N/APelayed/Immediate Effects:N/ATest Data on Mixture:M/AReference 1) "Negative Effect of Long-term Inhalation of Toner on Formation of<br>8-Hydroxydoexyguanosine in DNA in the Lungs of Rats in Vivo", Yasuo Morimoto, et. Al., Inhalation<br>Toxicology, Vol. 17 (13) p. 749-753 (  | Serious Eye Damage:        | N/A   |
| Mutagenicity:       Carcinogenicity:       Arnes test (Salmonella typhimurium, Escherichia coli) negative. (a similar product)         N/A       No test data available. None of the substances in this mixture is classified for reproductive toxicity.         STOT - Multiple Exposure:       N/A         No test data available. None of the substances in this mixture is classified for reproductive toxicity.         N/A         STOT - Multiple Exposure:       No         STOT - Multiple Exposure:       No test data available. Inhalation tests of a toner for two years showed no significant carcinogenicity. (Reference 1 - Test Data) In rats, chronic exposure to toner concentrations 4 mg/m3 and over lead to an accumulation of particles in the lung as well as to persistent inflammatory processes and slight to moderate fibrotic changes in the lungs of rats. In hamsters, these effects were only observed at significantly higher concentrations (> 20 mg/m3). The particle accumulation in the lung clearance mechanisms and is called "lung overloading". This is not an effect specific to toner dust but is generally observed luce! (LOEL) was 4 mg/m3 and the no-observable-effect-leve! (NOEL) was 1 mg/m3 in rats. The NOEL was greater than 6 mg/m3 in hamsters. (Reference 2 - Test Data) Toner concentrations the normal use of this product is estimated to be less than 1 mg/m3. N/A         Mataged/Immediate Effects:       N/A         VA       N/A         Delayed/Immediate Effects:       N/A         Reference 1) "Negative Effect of Long-term Inhalation of Toner on Formation of (Reference 2) T (13) p. 749-753 (2005). (Reference 2) T (2016 by Muhle, Bellmann, Creutzenberg et al.   | Inhalation:                | N/A   |
| mutagenicity:<br>Carcinogenicity:Ames test (Salmonella typhimurium, Escherichia coli) negative. (a similar product)NA<br>Reproductive Toxicity:<br>STOT - Single Exposure:No test data available. None of the substances in this mixture is classified for reproductive toxicity.<br>N/ASTOT - Multiple Exposure:<br>STOT - Multiple Exposure:No test data available. Inhalation tests of a toner for two years showed no significant<br>carcinogenicity. (Reference 1 - Test Data) In rats, chronic exposure to toner concentrations 4<br>mg/m3 and over lead to an accumulation of particles in the lung as well as to persistent<br>inflammatory processes and slight to moderate fibratic changes in the lungs of rats. In hamsters,<br>these effects were only observed at significantly higher concentrations (> 20 mg/m3). The particle<br>accumulation in the lung tissue of the experimental animals is attributed to a damage and<br>overload of the lung clearance mechanisms and is called "lung overloading". This is not an effect<br>specific to toner dust but is generally observed when high concentrations of other, slightly soluble<br>dusts are inhaled. The lowest-observable-effect-level (LOEL) was 4 mg/m3 and the no-observable-<br>effect-level (LOEL) was 1 mg/m3 in rats. The NOEL was greater than 6 mg/m3 in hamsters.<br>(Reference 2 - Test Data) Toner concentration under the normal use of this product is estimated to<br>be less than 1 mg/m3.<br>N/AIngestion:<br>Hazard Class Information:<br>Mixture on Market Data:<br>Symptoms:<br>Lease on Mixture:N/AV/AN/APelayed/Immediate Effects:<br>Indiation exposure in TAS. "Fundam. Appl. Toxicol 17 (1991) p.300-313. "Lung clearance<br>and retention of toner, tillizing a tracer technique during<br>chronic inhalation exposure in TaS." Fundam. Appl. Toxicol. 17 (1991) p.230-299.<br>"Pulmonary response to toner, TiO2, and crystalline Silica   | Sensitization:             | Respiratory: No test data available. None of the substances in this mixture is classified as a          |
| Carcinogenicity:<br>Reproductive Toxicity:<br>STOT - Single Exposure:N/A<br>No test data available. None of the substances in this mixture is classified for reproductive toxicity.<br>N/A<br>No test data available. Inhalation tests of a toner for two years showed no significant<br>carcinogenicity. (Reference 1 - Test Data) In rats, chronic exposure to toner concentrations 4<br>mg/m3 and over lead to an accumulation of particles in the lung as well as to persistent<br>inflammatory processes and slight to moderate fibratic changes in the lungs of rats. In hamsters,<br>these effects were only observed at significantly higher concentrations (> 20 mg/m3). The particle<br>accumulation in the lung tissue of the experimental animals is attributed to a damage and<br>overload of the lung clearance mechanisms and is called "lung overloading". This is not an effect<br>specific to toner dust but is generally observed when high concentrations of other, slightly soluble<br>dusts are inhaled. The lowest-observable-effect-level (LOEL) was 4 mg/m3 and the no-observable-<br>effect-level (NOEL) was 1 mg/m3 in rats. The NOEL was greater than 6 mg/m3 in hamsters.<br>(Reference 2 - Test Data) Toner concentration under the normal use of this product is estimated to<br>be less than 1 mg/m3.<br>N/A<br>N/A<br>N/A<br>N/A<br>Delayed/Immediate Effects:<br>N/A<br>(Reference 1) "Negative Effect of Long-term Inhalation of Toner on Formation of<br>8-Hydroxydeoxyguanosine in DNA in the Lungs of Rats in Vivo", Yasuo Morimoto, et. Al., Inhalation<br>Toxicology, Vol. 17 (13) p.749-753 (2005). (Reference 2) Studies by Muhle, Bellmann,<br>Creutzenberg et al. "Lung clearance and retention of toner, utilizing a tracer technique during<br>chronic inhalation exposure in rats." Fundam. Appl. Toxicol. 17 (1991) p.200-213. "Lung clearance<br>and retention of toner, TiO2, and crystalline Silica upon chronic inhalation exposure in rats." Fundam. Appl. Toxicol. 17 (1991) p.200-299.<br>"Pulmonary response to  |                            | respiratory sensitizer.   |
| Carcinogenicity:<br>Reproductive Toxicity:<br>N/AN/ANo test data available. None of the substances in this mixture is classified for reproductive toxicity.<br>N/ASTOT - Multiple Exposure:<br>STOT - Multiple Exposure:N/ANo test data available. Inhalation tests of a toner for two years showed no significant<br>carcinogenicity. (Reference 1 - Test Data) In rats, chronic exposure to toner concentrations 4<br>mg/m3 and over lead to an accumulation of particles in the lung as well as to persistent<br>inflammatory processes and slight to moderate fibratic changes in the lung or rats. In hamsters,<br>these effects were only observed at significantly higher concentrations (> 20 mg/m3). The particle<br>accumulation in the lung tissue of the experimental animals is attributed to a damage and<br>overload of the lung clearance mechanisms and is called "lung overloading". This is not an effect<br>specific to toner dust but is generally observed when high concentrations of other, slightly soluble<br>dusts are inhaled. The lowest-observable-effect-level (LOEL) was 4 mg/m3 and the no-observable-<br>effect-level (NOEL) was 1 mg/m3 in rats. The NOEL was greater than 6 mg/m3 in hamsters.<br>(Reference 2 - Test Data) Toner concentration under the normal use of this product is estimated to<br>be less than 1 mg/m3.<br>N/AMazard Class Information:<br>Mixture on Market Data:<br>Symptoms:<br>Delayed/Immediate Effects:<br>Test Data on Mixture:N/AN/A<br>N/A<br>N/AN/A<br>(Reference 1) "Negative Effect of Long-term Inhalation of Toner on Formation of<br>8-Hydroxydeoxyguanosine in DNA in the Lungs of Rats in Vivo", Yasuo Morimoto, et. Al., Inhalation<br>Toxicology, Vol. 17 (13) p.749-753 (2005). (Reference 2) Studies by Muhle, Bellmann,<br>Creutzenberg et al. "Lung clearance and retention of toner, utilizing a tracer technique during<br>chronic inhalation exposure in rats." F  | Mutagenicity:              | Ames test (Salmonella typhimurium, Escherichia coli) negative. (a similar product)                      |
| Reproductive Toxicity:<br>STOT - Single Exposure:<br>STOT - Multiple Exposure:<br>NA<br>Ne test data available. Inhalation tests of a toner for two years showed no significant<br>carcinogencity. (Reference 1 - Test Data) In rats, chronic exposure to toner concentrations 4<br>mg/m3 and over lead to a damage and<br>overload of the lung clearance mechanisms and is called "lung overloading". This is not an effect<br>specific to toner dust but is generally observed when high concentrations of other, slightly soluble<br>dusts are inhaled. The lowest-observable-effect-level (LOEL) was 4 mg/m3 and the no-observable-<br>effect-level (NOEL) was 1 mg/m3. In rats. The NOEL was greater than 6 mg/m3 in hamsters.<br>(Reference 2 - Test Data) In mg/m3.<br>NA<br>MA<br>MA<br>MA<br>MA<br>MA<br>MA<br>Test Data on Mixture:<br>MA<br>MA<br>Test Data on Mixture:<br>MA<br>MA<br>Creutzenberg et al. "Lung clearance and retention of Toner   |                            |   |
| STOT - Single Exposure:<br>STOT - Multiple Exposure:N/ASTOT - Multiple Exposure:No test data available. Inhalation tests of a toner for two years showed no significant<br>carcinogenicity. (Reference 1 - Test Data) In rats, chronic exposure to toner concentrations 4<br>mg/m3 and over lead to an accumulation of particles in the lung as well as to persistent<br>inflammatory processes and slight to moderate fibrotic changes in the lung of rats. In hamsters,<br>these effects were only observed at significantly higher concentrations (> 20 mg/m3). The particle<br>accumulation in the lung tissue of the experimental animals is attributed to a damage and<br>overload of the lung clearance mechanisms and is called "lung overloading". This is not an effect<br>specific to toner dust but is generally observed when high concentrations of other, slightly soluble<br>dusts are inhaled. The lowest-observable-effect-level (LOEL) was 4 mg/m3 and the no-observable-<br>effect-level (NOEL) was 1 mg/m3 in rats. The NOEL was greater than 6 mg/m3 in hamsters.<br>(Reference 2 - Test Data) Toner concentration under the normal use of this product is estimated to<br>be less than 1 mg/m3.Ingestion:<br>Mixture on Market Data:<br>Symptoms:<br>Delayed/Immediate Effects:N/AN/A<br>Creutzenberg et al. "Lung clearance and retention of Toner on Formation of<br>8-Hydroxydeoxyguanosine in DNA in the lungs of Rats in Vivo", Yasuo Morimoto, et. Al., Inhalation<br>Toxicology, Vol. 17 (13) p.749-753 (2005). (Reference 2) Studies by Muhle, Bellmann,<br>Creutzenberg et al. "Lung clearance and retention of toner, utilizing a tracer technique during<br>chronic inhalation exposure in rats." Fundam. Appl. Toxicol 17 (1991) p.300-313. "Lung clearance<br>and retention of toner, Tilgy and then prosone in thalation exposure in rats." Fundam. Appl. Toxicol. 10 (1998) p.731-751. "Subchronic<br>inhalation exposure in otor, TiO2 and crystalline Silica, u  |                            | No test data available. None of the substances in this mixture is classified for reproductive toxicity. |
| STOT - Multiple İxposure:No test data available. Inhalation tests of a toner for two years showed no significant<br>carcinogenicity. (Reference 1 - Test Data) In rats, chronic exposure to toner concentrations 4<br>mg/m3 and over lead to an accumulation of particles in the lungs are lla sto persistent<br>inflammatory processes and slight to moderate fibrotic changes in the lungs of rats. In hamsters,<br>these effects were only observed at significantly higher concentrations (> 20 mg/m3). The particle<br>accumulation in the lung tissue of the experimental animals is attributed to a damage and<br>overload of the lung clearance mechanisms and is called "lung overloading". This is not an effect<br>specific to toner dust but is generally observed when high concentrations of other, slightly soluble<br>dusts are inhaled. The lowest-observable-effect-level (LOEL) was 4 mg/m3 and the no-observable-<br>effect-level (NOEL) was 1 mg/m3 in rats. The NOEL was greater than 6 mg/m3 in hamsters.<br>(Reference 2 - Test Data) Toner concentration under the normal use of this product is estimated to<br>be less than 1 mg/m3.Ingestion:N/AMixture on Market Data:N/ASymptoms:N/ADelayed/Immediate Effects:N/ACreutzenberg et al. "Lung clearance and retention of toner, vitilizing a tracer technique during<br>chronic inhalation exposure in rats." Fundam. Appl. Toxicol 17 (1991) p.300-313. "Lung clearance<br>and retention of toner, riley and rystaline Silica, utilizing a tracer technique during<br>chronic inhalation exposure in rats." Fundam. Appl. Toxicol. 10 (1998) p.731-751. "Subchronic<br>inhalation exposure in Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.731-751. "Subchronic<br>inhalation exposure in Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.731-751. "Subchronic<br>inhalation exposure in Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.731-751. "Subch   | STOT - Single Exposure:    |   |
| <ul> <li>carcinogenicity. (Reference 1 - Test Data) In rats, chronic exposure to toner concentrations 4 mg/m3 and over lead to an accumulation of particles in the lungs are lass. In hamsters, these effects were only observed at significantly higher concentrations (&gt; 20 mg/m3). The particle accumulation in the lung tissue of the experimental animals is attributed to a damage and overload of the lung clearance mechanisms and is called "lung overloading". This is not an effect specific to toner dust but is generally observed when high concentrations of other, slightly soluble dusts are inhaled. The lowest-observable-effect-level (LOEL) was 4 mg/m3 and the no-observable-effect-level (NOEL) was 1 mg/m3 in rats. The NOEL was greater than 6 mg/m3 in hamsters. (Reference 2 - Test Data) Toner concentration under the normal use of this product is estimated to be less than 1 mg/m3.</li> <li>N/A</li> <li>Hazard Class Information: N/A</li> <li>MA</li> <li>Melayed Mixture on Market Data: N/A</li> <li>Pelayed/Immediate Effects: N/A</li> <li>Reference 1) "Negative Effect of Long-term Inhalation of Toner on Formation of 8-Hydroxydeoxyguanosine in DNA in the Lungs of Rats in Vivo", Yasuo Morimoto, et. Al., Inhalation Toxicology, Vol. 17 (13) p.749-753 (2005). (Reference 2) Studies by Muhle, Bellmann, Creutzenberg et al. "Lung clearance and retention of toner, vilizing a tracer technique during chronic inhalation exposure in rats." Fundam. Appl. Toxicol. 10 (1991) p.300-313. "Lung clearance and retention of toner, vilizing a tracer technique during chronic inhalation exposure in rats." Fundam. Appl. Toxicol. 17 (1991) p.280-299. "Pulmonary response to toner, incla and resposure in rats." Fundam. Appl. Toxicol. 17 (1991) p.280-299.</li> <li>Not Meeting Classification: N/A</li> <li>N/A</li> <li>N/A</li> <li>N/A</li> </ul>  |                            | No test data available. Inhalation tests of a toner for two years showed no significant                 |
| Inflammatory processes and slight to moderate fibrotic changes in the lungs of rats. In hamsters,<br>these effects were only observed at significantly higher concentrations (> 20 mg/m3). The particle<br>accumulation in the lung tissue of the experimental animals is attributed to a damage and<br>overload of the lung clearance mechanisms and is called "lung overloading". This is not an effect<br>specific to toner dust but is generally observed when high concentrations of other, slightly soluble<br>dusts are inhaled. The lowest-observable-effect-level (LOEL) was 4 mg/m3 and the no-observable-<br>effect-level (NOEL) was 1 mg/m3 in rats. The NOEL was greater than 6 mg/m3 in hamsters.<br>(Reference 2 - Test Data) Toner concentration under the normal use of this product is estimated to<br>be less than 1 mg/m3.Ingestion:N/AHazard Class Information:N/AMixture on Market Data:N/ASymptoms:N/ADelayed/Immediate Effects:N/ATest Data on Mixture:(Reference 1) "Negative Effect of Long-term Inhalation of Toner on Formation of<br>8-Hydroxydeoxyguanosine in DNA in the Lungs of Rats in Vivo", Yasuo Morimoto, et. Al., Inhalation<br>Toxicology, Vol. 17 (13) p.749-753 (2005). (Reference 2) Studies by Muhle, Bellmann,<br>Creutzenberg et al. "Lung clearance and retention of toner, utilizing a tracer technique during<br>chronic inhalation exposure in rats." Inhal. Toxicol. 10 (1998) p.731-751. "Subchronic<br>inhalation exposure in rats." Inhal. Toxicol. 2 (1990) p.341-360. "Pulmonary response to toner, triO2 and crystalline Silica upon chronic inhalation exposure in rats." Inhal. Toxicol. 10 (1998) p.731-751. "Subchronic<br>inhalation exposure in rats." Inhal. Toxicol. 10 (1998) p.731-751. "Subchronic<br>inhalation exposure in rats." Inhal. Toxicol. 10 (1998) p.731-751. "Subchronic<br>inhalation exposure in rats." Inhal. Toxicol. 10 (1998) p.731-75   |                            | carcinogenicity. (Reference 1 - Test Data) In rats, chronic exposure to toner concentrations 4          |
| Inflammatory processes and slight to moderate fibrotic changes in the lungs of rats. In hamsters,<br>these effects were only observed at significantly higher concentrations (> 20 mg/m3). The particle<br>accumulation in the lung tissue of the experimental animals is attributed to a damage and<br>overload of the lung clearance mechanisms and is called "lung overloading". This is not an effect<br>specific to toner dust but is generally observed when high concentrations of other, slightly soluble<br>dusts are inhaled. The lowest-observable-effect-level (LOEL) was 4 mg/m3 and the no-observable-<br>effect-level (NOEL) was 1 mg/m3 in rats. The NOEL was greater than 6 mg/m3 in hamsters.<br>(Reference 2 - Test Data) Toner concentration under the normal use of this product is estimated to<br>be less than 1 mg/m3.Ingestion:N/AHazard Class Information:N/AMixture on Market Data:N/ASymptoms:N/ADelayed/Immediate Effects:N/ATest Data on Mixture:(Reference 1) "Negative Effect of Long-term Inhalation of Toner on Formation of<br>8-Hydroxydeoxyguanosine in DNA in the Lungs of Rats in Vivo", Yasuo Morimoto, et. Al., Inhalation<br>Toxicology, Vol. 17 (13) p.749-753 (2005). (Reference 2) Studies by Muhle, Bellmann,<br>Creutzenberg et al. "Lung clearance and retention of toner, utilizing a tracer technique during<br>chronic inhalation exposure in rats." Inhal. Toxicol. 10 (1998) p.731-751. "Subchronic<br>inhalation exposure in rats." Inhal. Toxicol. 2 (1990) p.341-360. "Pulmonary response to toner,<br>upon chronic inhalation exposure in rats." Inhal. Toxicol. 10 (1998) p.731-751. "Subchronic<br>inhalation exposure in rats." Inhal. Toxicol. 10 (1998) p.731-751. "Subchronic<br>inhalation exposure in rats." Inhal. Toxicol. 10 (1998) p.731-751. "Subchronic<br>inhalation exposure in rats." Inhal. Toxicol. 10 (1998) p.731-751. "Subchronic<br>inhala   |                            | mg/m3 and over lead to an accumulation of particles in the lung as well as to persistent                |
| accumulation in the lung tissue of the experimental animals is attributed to a damage and<br>overload of the lung clearance mechanisms and is called "lung overloading". This is not an effect<br>specific to toner dust but is generally observed when high concentrations of other, slightly soluble<br>dusts are inhaled. The lowest-observable-effect-level (LOEL) was 4 mg/m3 and the no-observable-<br>effect-level (NOEL) was 1 mg/m3 in rats. The NOEL was greater than 6 mg/m3 in hamsters.<br>(Reference 2 - Test Data) Toner concentration under the normal use of this product is estimated to<br>be less than 1 mg/m3.Ingestion:N/AHazard Class Information:N/ASymptoms:N/AOpelayed/Immediate Effects:N/ATest Data on Mixture:(Reference 1) "Negative Effect of Long-term Inhalation of Toner on Formation of<br>8-Hydroxydeoxyguanosine in DNA in the Lungs of Rats in Vivo", Yasuo Morimoto, et. Al., Inhalation<br>Toxicology, Vol. 17 (13) p.749-753 (2005). (Reference 2) Studies by Muhle, Bellmann,<br>Creutzenberg et al. "Lung clearance and retention of toner, tillizing a tracer technique during<br>chronic inhalation exposure in rats." Fundam. Appl. Toxicol 10 (1998) p.731-751. "Subchronic<br>inhalation study of toner in rats." Inhal. Toxicol. 10 (1998) p.731-751. "Subchronic<br>inhalation exposure in rats." Inhal. Toxicol. 11 (1991) p.280-299.<br>"Pulmonary response to toner, TiO2 and crystalline Silica upon chronic inhalation exposure in<br>Syrian golden hamsters." Inhal. Toxicol. 17 (1991) p.280-299.<br>"Pulmonary response to toner, TiO2 and crystalline Silica upon chronic inhalation exposure in<br>Syrian golden hamsters." Inhal. Toxicol. 11 (1998) p.699-729.Not Meeting Classification:N/A   |                            |   |
| accumulation in the lung tissue of the experimental animals is attributed to a damage and<br>overload of the lung clearance mechanisms and is called "lung overloading". This is not an effect<br>specific to toner dust but is generally observed when high concentrations of other, slightly soluble<br>dusts are inhaled. The lowest-observable-effect-level (LOEL) was 4 mg/m3 and the no-observable-<br>effect-level (NOEL) was 1 mg/m3 in rats. The NOEL was greater than 6 mg/m3 in hamsters.<br>(Reference 2 - Test Data) Toner concentration under the normal use of this product is estimated to<br>be less than 1 mg/m3.Ingestion:N/AHazard Class Information:N/ASymptoms:N/AOpelayed/Immediate Effects:N/ASymptoms:N/AOpelayed/Immediate Effects:N/ATest Data on Mixture:(Reference 1) "Negative Effect of Long-term Inhalation of Toner on Formation of<br>8-Hydroxydeoxyguanosine in DNA in the Lungs of Rats in Vivo", Yasuo Morimoto, et. Al., Inhalation<br>Toxicology, Vol. 17 (13) p.749-753 (2005). (Reference 2) Studies by Muhle, Bellmann,<br>Creutzenberg et al. "Lung clearance and retention of toner, tillizing a tracer technique during<br>chronic inhalation exposure in rats." Fundam. Appl. Toxicol 17 (1991) p.300-313. "Lung clearance<br>and retention of toner, TiO2, and crystalline Silica, utilizing a tracer technique during<br>chronic inhalation exposure in rats." Fundam. Appl. Toxicol. 10 (1998) p.731-751. "Subchronic<br>inhalation exposure in rats." Inhal. Toxicol. 2 (1990) p.341-360. "Pulmonary response to toner,<br>upon chronic inhalation exposure in rats." Fundam. Appl. Toxicol. 17 (1991) p. 280-299.<br>"Pulmonary response to toner, TiO2 and crystalline Silica upon chronic inhalation exposure in<br>Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.699-729.Not Meeting ClassificationionN/A   |                            | these effects were only observed at significantly higher concentrations (> 20 mg/m3). The particle      |
| <ul> <li>specific to toner dust but is generally observed when high concentrations of other, slightly soluble dusts are inhaled. The lowest-observable-effect-level (LOEL) was 4 mg/m3 and the no-observable-effect-level (LOEL) was 1 mg/m3 in rats. The NOEL was greater than 6 mg/m3 in hamsters. (Reference 2 - Test Data) Toner concentration under the normal use of this product is estimated to be less than 1 mg/m3.</li> <li>Ingestion: N/A</li> <li>Mixture on Market Data: N/A</li> <li>Symptoms: N/A</li> <li>Delayed/Immediate Effects: N/A</li> <li>Test Data on Mixture: (Reference 1) "Negative Effect of Long-term Inhalation of Toner on Formation of 8-Hydroxydeoxyguanosine in DNA in the Lungs of Rats in Vivo", Yasuo Morimoto, et. Al., Inhalation Toxicology, Vol. 17 (13) p.749-753 (2005). (Reference 2) Studies by Muhle, Bellmann, Creutzenberg et al. "Lung clearance and retention of toner, utilizing a tracer technique during chronic inhalation exposure in rats." Fundam. Appl. Toxicol. 17 (1991) p.300-313. "Lung clearance and retention of toner, TiO2, and crystalline Silica, utilizing a tracer technique during chronic inhalation exposure in rats." Inhal. Toxicol. 2 (1990) p.341-360. "Pulmonary response to toner upon chronic inhalation exposure in rats." Fundam. Appl. Toxicol. 17 (1991) p.280-299. "Pulmonary response to toner, TiO2 and crystalline Silica upon chronic inhalation exposure in Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.731-751. "Subchronic inhalation exposure in rats." Fundam. Appl. Toxicol. 17 (1991) p.280-299. "Pulmonary response to toner, TiO2 and crystalline Silica upon chronic inhalation exposure in Syrian golden hamsters." Inhal. Toxicol. 17 (1991) p.280-299. "Pulmonary response to toner, TiO2 and crystalline Silica upon chronic inhalation exposure in Syrian golden hamsters." Inhal. Toxicol. 17 (1991) p.280-299. "Pulmonary response to toner, TiO2 and crystalline Silica upon chronic inhalation exposure in Syrian golden hamsters." Inhal. Toxicol. 17 (1991) p.280-299.</li> &lt;</ul> |                            |   |
| dusts are inhaled. The lowest-observable-effect-level (LÕEL) was 4 mg/m3 and the no-observable-effect-level (NOEL) was 1 mg/m3 in rats. The NOEL was greater than 6 mg/m3 in hamsters.<br>(Reference 2 - Test Data) Toner concentration under the normal use of this product is estimated to be less than 1 mg/m3.Ingestion:N/AHazard Class Information:N/AMixture on Market Data:N/ASymptoms:N/ADelayed/Immediate Effects:N/ATest Data on Mixture:N/A(Reference 1) "Negative Effect of Long-term Inhalation of Toner on Formation of<br>8-Hydroxydeoxyguanosine in DNA in the Lungs of Rats in Vivo", Yasuo Morimoto, et. Al., Inhalation<br>Toxicology, Vol. 17 (13) p.749-753 (2005). (Reference 2) Studies by Muhle, Bellmann,<br>Creutzenberg et al. "Lung clearance and retention of toner, utilizing a tracer technique during<br>chronic inhalation exposure in rats." Fundam. Appl. Toxicol 17 (1991) p.300-313. "Lung clearance<br>and retention of toner, TiO2, and crystalline Silica, utilizing a tracer technique during chronic<br>inhalation study of toner in rats." Inhal. Toxicol. 2 (1990) p.341-360. "Pulmonary response to toner<br>upon chronic inhalation exposure in rats." Fundam. Appl. Toxicol. 17 (1991) p.280-299.<br>"Pulmonary response to toner, TiO2 and crystalline Silica upon chronic inhalation exposure in<br>Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.731-751. "Subchronic<br>inhalation exposure in rats." Inhal. Toxicol. 10 (1998) p.699-729.Not Meeting Classification:N/ARoutes of Exposure:N/A   |                            | overload of the lung clearance mechanisms and is called "lung overloading". This is not an effect       |
| dusts are inhaled. The lowest-observable-effect-level (LÕEL) was 4 mg/m3 and the no-observable-effect-level (NOEL) was 1 mg/m3 in rats. The NOEL was greater than 6 mg/m3 in hamsters.<br>(Reference 2 - Test Data) Toner concentration under the normal use of this product is estimated to be less than 1 mg/m3.Ingestion:N/AHazard Class Information:N/AMixture on Market Data:N/ASymptoms:N/ADelayed/Immediate Effects:N/ATest Data on Mixture:N/A(Reference 1) "Negative Effect of Long-term Inhalation of Toner on Formation of<br>8-Hydroxydeoxyguanosine in DNA in the Lungs of Rats in Vivo", Yasuo Morimoto, et. Al., Inhalation<br>Toxicology, Vol. 17 (13) p.749-753 (2005). (Reference 2) Studies by Muhle, Bellmann,<br>Creutzenberg et al. "Lung clearance and retention of toner, utilizing a tracer technique during<br>chronic inhalation exposure in rats." Fundam. Appl. Toxicol 17 (1991) p.300-313. "Lung clearance<br>and retention of toner, TiO2, and crystalline Silica, utilizing a tracer technique during chronic<br>inhalation study of toner in rats." Inhal. Toxicol. 2 (1990) p.341-360. "Pulmonary response to toner<br>upon chronic inhalation exposure in rats." Fundam. Appl. Toxicol. 17 (1991) p.280-299.<br>"Pulmonary response to toner, TiO2 and crystalline Silica upon chronic inhalation exposure in<br>Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.731-751. "Subchronic<br>inhalation exposure in rats." Inhal. Toxicol. 10 (1998) p.699-729.Not Meeting Classification:N/ARoutes of Exposure:N/A   |                            | specific to toner dust but is generally observed when high concentrations of other, slightly soluble    |
| Ingestion:N/AHazard Class Information:N/AMixture on Market Data:N/ASymptoms:N/ADelayed/Immediate Effects:N/ATest Data on Mixture:N/AVice Class Information:N/AN/AN/ADelayed/Immediate Effects:N/ATest Data on Mixture:N/ANot Meeting Classification:N/ANot Meeting Classification:N/AN/AN/A  |                            | dusts are inhaled. The lowest-observable-effect-level (LOEL) was 4 mg/m3 and the no-observable-         |
| Ingestion:be less than 1 mg/m3.Hazard Class Information:N/AMixture on Market Data:N/ASymptoms:N/ADelayed/Immediate Effects:N/ATest Data on Mixture:N/A(Reference 1) "Negative Effect of Long-term Inhalation of Toner on Formation of<br>8-Hydroxydeoxyguanosine in DNA in the Lungs of Rats in Vivo", Yasuo Morimoto, et. Al., Inhalation<br>Toxicology, Vol. 17 (13) p.749-753 (2005). (Reference 2) Studies by Muhle, Bellmann,<br>Creutzenberg et al. "Lung clearance and retention of toner, utilizing a tracer technique during<br>chronic inhalation exposure in rats." Fundam. Appl. Toxicol 17 (1991) p.300-313. "Lung clearance<br>and retention of toner, TiO2, and crystalline Silica, utilizing a tracer technique during chronic<br>inhalation study of toner in rats." Inhal. Toxicol. 2 (1990) p.341-360. "Pulmonary response to toner<br>upon chronic inhalation exposure in rats." Fundam. Appl. Toxicol. 17 (1991) p.280-299.<br>"Pulmonary response to toner, TiO2 and crystalline Silica upon chronic inhalation exposure in<br>Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.699-729.Not Meeting Classification:<br>Routes of Exposure:N/A  |                            | effect-level (NOEL) was 1 mg/m3 in rats. The NOEL was greater than $\overline{6}$ mg/m3 in hamsters.    |
| Ingestion:N/AHazard Class Information:N/AMixture on Market Data:N/ASymptoms:N/ADelayed/Immediate Effects:N/ATest Data on Mixture:N/AKeference 1) "Negative Effect of Long-term Inhalation of Toner on Formation of<br>8-Hydroxydeoxyguanosine in DNA in the Lungs of Rats in Vivo", Yasuo Morimoto, et. Al., Inhalation<br>Toxicology, Vol. 17 (13) p.749-753 (2005). (Reference 2) Studies by Muhle, Bellmann,<br>Creutzenberg et al. "Lung clearance and retention of toner, utilizing a tracer technique during<br>chronic inhalation exposure in rats." Fundam. Appl. Toxicol 17 (1991) p.300-313. "Lung clearance<br>and retention of toner, TiO2, and crystalline Silica, utilizing a tracer technique during chronic<br>inhalation exposure in Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.731-751. "Subchronic<br>inhalation study of toner in rats." Fundam. Appl. Toxicol. 17 (1991) p.280-299.<br>"Pulmonary response to toner, TiO2 and crystalline Silica upon chronic inhalation exposure in<br>Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.731-751. "Subchronic<br>inhalation exposure in rats." Fundam. Appl. Toxicol. 17 (1991) p.280-299.<br>"Pulmonary response to toner, TiO2 and crystalline Silica upon chronic inhalation exposure in<br>Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.699-729.Not Meeting Classification:N/AN/A   |                            | (Reference 2 - Test Data) Toner concentration under the normal use of this product is estimated to      |
| Hazard Class Information:N/AMixture on Market Data:N/ASymptoms:N/ADelayed/Immediate Effects:N/ATest Data on Mixture:(Reference 1) "Negative Effect of Long-term Inhalation of Toner on Formation of<br>8-Hydroxydeoxyguanosine in DNA in the Lungs of Rats in Vivo", Yasuo Morimoto, et. Al., Inhalation<br>Toxicology, Vol. 17 (13) p.749-753 (2005). (Reference 2) Studies by Muhle, Bellmann,<br>Creutzenberg et al. "Lung clearance and retention of toner, utilizing a tracer technique during<br>chronic inhalation exposure in rats." Fundam. Appl. Toxicol 17 (1991) p.300-313. "Lung clearance<br>and retention of toner, TiO2, and crystalline Silica, utilizing a tracer technique during chronic<br>inhalation exposure in Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.731-751. "Subchronic<br>inhalation study of toner in rats." Inhal. Toxicol. 2 (1990) p.341-360. "Pulmonary response to toner<br>upon chronic inhalation exposure in rats." Fundam. Appl. Toxicol. 17 (1991) p.280-299.<br>"Pulmonary response to toner, TiO2 and crystalline Silica upon chronic inhalation exposure in<br>Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.699-729.Not Meeting Classification:<br>Routes of Exposure:N/A  |                            | be less than 1 mg/m3.   |
| Mixture on Market Data:N/ASymptoms:N/ADelayed/Immediate Effects:N/ATest Data on Mixture:(Reference 1) "Negative Effect of Long-term Inhalation of Toner on Formation of<br>8-Hydroxydeoxyguanosine in DNA in the Lungs of Rats in Vivo", Yasuo Morimoto, et. Al., Inhalation<br>Toxicology, Vol. 17 (13) p.749-753 (2005). (Reference 2) Studies by Muhle, Bellmann,<br>Creutzenberg et al. "Lung clearance and retention of toner, utilizing a tracer technique during<br>chronic inhalation exposure in rats." Fundam. Appl. Toxicol 17 (1991) p.300-313. "Lung clearance<br>and retention of toner, TiO2, and crystalline Silica, utilizing a tracer technique during chronic<br>inhalation exposure in rats." Inhal. Toxicol. 2 (1990) p.341-360. "Pulmonary response to toner<br>upon chronic inhalation exposure in rats." Fundam. Appl. Toxicol 17 (1991) p.280-299.<br>"Pulmonary response to toner, TiO2 and crystalline Silica upon chronic inhalation exposure in<br>Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.699-729.Not Meeting Classification:<br>Routes of Exposure:N/A   | Ingestion:                 | N/A   |
| Symptoms:N/ADelayed/Immediate Effects:N/ATest Data on Mixture:(Reference 1) "Negative Effect of Long-term Inhalation of Toner on Formation of<br>8-Hydroxydeoxyguanosine in DNA in the Lungs of Rats in Vivo", Yasuo Morimoto, et. Al., Inhalation<br>Toxicology, Vol. 17 (13) p.749-753 (2005). (Reference 2) Studies by Muhle, Bellmann,<br>Creutzenberg et al. "Lung clearance and retention of toner, utilizing a tracer technique during<br>chronic inhalation exposure in rats." Fundam. Appl. Toxicol 17 (1991) p.300-313. "Lung clearance<br>and retention of toner, TiO2, and crystalline Silica, utilizing a tracer technique during chronic<br>inhalation exposure in rats." Inhal. Toxicol. 10 (1998) p.731-751. "Subchronic<br>inhalation study of toner in rats." Fundam. Appl. Toxicol. 11 (1991) p.280-299.<br>"Pulmonary response to toner, TiO2 and crystalline Silica upon chronic inhalation exposure in<br>Syrian golden hamsters." Inhal. Toxicol. 17 (1991) p.280-299.<br>"Pulmonary response to toner, TiO2 and crystalline Silica upon chronic inhalation exposure in<br>Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.699-729.Not Meeting Classification:<br>Routes of Exposure:N/A   | Hazard Class Information:  | N/A   |
| Delayed/Immediate Effects:N/ATest Data on Mixture:(Reference 1) "Negative Effect of Long-term Inhalation of Toner on Formation of<br>8-Hydroxydeoxyguanosine in DNA in the Lungs of Rats in Vivo", Yasuo Morimoto, et. Al., Inhalation<br>Toxicology, Vol. 17 (13) p.749-753 (2005). (Reference 2) Studies by Muhle, Bellmann,<br>Creutzenberg et al. "Lung clearance and retention of toner, utilizing a tracer technique during<br>chronic inhalation exposure in rats." Fundam. Appl. Toxicol 17 (1991) p.300-313. "Lung clearance<br>and retention of toner, TiO2, and crystalline Silica, utilizing a tracer technique during chronic<br>inhalation exposure in Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.731-751. "Subchronic<br>inhalation study of toner in rats." Fundam. Appl. Toxicol. 17 (1991) p.280-299.<br>"Pulmonary response to toner, TiO2 and crystalline Silica upon chronic inhalation exposure in<br>Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.699-729.Not Meeting Classification:<br>Routes of Exposure:N/A   | Mixture on Market Data:    | N/A   |
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| <ul> <li>8-Hydroxydeoxyguanosine in DNA in the Lungs of Rats in Vivo", Yasuo Morimoto, et. Al., Inhalation Toxicology, Vol. 17 (13) p.749-753 (2005). (Reference 2) Studies by Muhle, Bellmann, Creutzenberg et al. "Lung clearance and retention of toner, utilizing a tracer technique during chronic inhalation exposure in rats." Fundam. Appl. Toxicol 17 (1991) p.300-313. "Lung clearance and retention of toner, utilizing a tracer technique during chronic inhalation exposure in Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.731-751. "Subchronic inhalation study of toner in rats." Fundam. Appl. Toxicol. 10 (1998) p.731-751. "Subchronic inhalation study of toner in rats." Inhal. Toxicol. 2 (1990) p.341-360. "Pulmonary response to toner upon chronic inhalation exposure in rats." Fundam. Appl. Toxicol. 17 (1991) p.280-299. "Pulmonary response to toner, TiO2 and crystalline Silica upon chronic inhalation exposure in Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.699-729.</li> <li>Not Meeting Classification: Routes of Exposure: N/A</li> <li>N/A</li> </ul>   | Delayed/Immediate Effects: | N/A   |
| Toxicology, Vol. 17 (13) p.749-753 (2005). (Reference 2) Studies by Muhle, Bellmann,<br>Creutzenberg et al. "Lung clearance and retention of toner, utilizing a tracer technique during<br>chronic inhalation exposure in rats." Fundam. Appl. Toxicol 17 (1991) p.300-313. "Lung clearance<br>and retention of toner, TiO2, and crystalline Silica, utilizing a tracer technique during chronic<br>inhalation exposure in Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.731-751. "Subchronic<br>inhalation study of toner in rats." Inhal. Toxicol. 2 (1990) p.341-360. "Pulmonary response to toner<br>upon chronic inhalation exposure in rats." Fundam. Appl. Toxicol. 17 (1991) p.280-299.<br>"Pulmonary response to toner, TiO2 and crystalline Silica upon chronic inhalation exposure in<br>Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.699-729.Not Meeting Classification:<br>Routes of Exposure:N/A  | Test Data on Mixture:      | (Reference 1) "Negative Effect of Long-term Inhalation of Toner on Formation of                         |
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| <ul> <li>chronic inhalation exposure in rats." Fundam. Appl. Toxicol 17 (1991) p.300-313. "Lung clearance and retention of toner, TiO2, and crystalline Silica, utilizing a tracer technique during chronic inhalation exposure in Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.731-751. "Subchronic inhalation study of toner in rats." Inhal. Toxicol. 2 (1990) p.341-360. "Pulmonary response to toner upon chronic inhalation exposure in rats." Fundam. Appl. Toxicol. 17 (1991) p.280-299.</li> <li>Not Meeting Classification: Routes of Exposure: N/A</li> </ul>   |                            |   |
| and retention of toner, TiO2, and crystalline Silica, utilizing a tracer technique during chronic<br>inhalation exposure in Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.731-751. "Subchronic<br>inhalation study of toner in rats." Inhal. Toxicol. 2 (1990) p.341-360. "Pulmonary response to toner<br>upon chronic inhalation exposure in rats." Fundam. Appl. Toxicol. 17 (1991) p.280-299.<br>"Pulmonary response to toner, TiO2 and crystalline Silica upon chronic inhalation exposure in<br>Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.699-729.Not Meeting Classification:<br>Routes of Exposure:N/A   |                            |   |
| <ul> <li>inhalation exposure in Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.731-751. "Subchronic inhalation study of toner in rats." Inhal. Toxicol. 2 (1990) p.341-360. "Pulmonary response to toner upon chronic inhalation exposure in rats." Fundam. Appl. Toxicol. 17 (1991) p.280-299.</li> <li>"Pulmonary response to toner, TiO2 and crystalline Silica upon chronic inhalation exposure in Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.699-729.</li> <li>Not Meeting Classification: Routes of Exposure: N/A</li> </ul>   |                            |   |
| <ul> <li>inhalation study of toner in rats." Inhal. Toxicol. 2 (1990) p.341-360. "Pulmonary response to toner upon chronic inhalation exposure in rats." Fundam. Appl. Toxicol. 17 (1991) p.280-299.</li> <li>"Pulmonary response to toner, TiO2 and crystalline Silica upon chronic inhalation exposure in Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.699-729.</li> <li>Not Meeting Classification: N/A</li> <li>N/A</li> </ul>   |                            |   |
| <ul> <li>upon chronic inhalation exposure in rats." Fundam. Appl. Toxicol. 17 (1991) p.280-299.</li> <li>"Pulmonary response to toner, TiO2 and crystalline Silica upon chronic inhalation exposure in Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.699-729.</li> <li>Not Meeting Classification:</li> <li>Routes of Exposure:</li> <li>N/A</li> </ul>   |                            |   |
| "Pulmonary response to toner, TiO2 and crystalline Silica upon chronic inhalation exposure in<br>Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.699-729.Not Meeting Classification:<br>Routes of Exposure:N/A  |                            |   |
| Syrian golden hamsters." Inhal. Toxicol. 10 (1998) p.699-729.Not Meeting Classification:N/ARoutes of Exposure:N/A  |                            | upon chronic inhalation exposure in rats." Fundam. Appl. Toxicol. 17 (1991) p.280-299.                  |
| Not Meeting Classification:N/ARoutes of Exposure:N/A   |                            |   |
| Routes of Exposure: N/A  |                            |   |
|  |                            | •   |
| Interactive Effects: N/A   | •                          | •   |
|  | Interactive Effects:       | N/A   |
| Absence of Specific Data: N/A  | •                          |   |
| Mixture vs Substance Data: N/A   | Mixture vs Substance Data: | N/A   |



# 12. ECOLOGICAL INFORMATION

| 12.1 Eco toxicity:              | According to our test results of this or similar mixture, and the information provided by the suppliers about the substances contained in this mixture, this mixture is not expected to be harmful to ecology. Acute toxicity to aquatic organisms (a similar product): 72-hour IC50 (for algae, Pseudokirchneriella subcapitata, OECD 201) > 1,000 mg/L, NOEC 1,000 mg/L; 48-hour EC50 (for Daphnia magna, OECD 202) > 1,000 mg/L, NOEC 1,000 mg/L; 96-hour LC50 (for fish, Rainbow trout, OECD 203) > 1,000 mg/L, NOEC 1,000 mg/L. |  |
|---------------------------------|--|--|
| 12.2 Degradability:             | N/A  |  |
| 12.3 Bioaccumulation Potential: | N/A  |  |
| 12.4 Mobility in Soil:          | N/A  |  |
| 12.5 PBT & vPvB Assessment:     | N/A  |  |
| 12.6 Other Adverse Effects:     | None known.  |  |
| 13. DISPOSAL CONSIDERATIONS     |  |  |

# **Disposal Information:**

Dispose of product in accordance with local authority regulations. Empty container retains product residue.

## **Physical/Chemical Properties that affect Treatment:**

Symbol: This product is not classified as dangerous

Risk Phrases: This product is not classified according to the federal, state and local environmental regulations.

## Waste Treatment Information:

If toner, 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.

#### **Personal Protection Required:**

N/A

| 14.  | 14. TRANSPORT INFORMATION |  |  |
|------|---------------------------|--|--|
| 14.1 | ID Number:                | None. Not a regulated material under the United States DOT, IMDG, ADR, RID, or ICAO/IATA.  |  |
| 14.2 | Shipping Name:            | None. Not a regulated material under the United States DOT, IMDG, ADR, RID, or ICAO/IATA.  |  |
| 14.3 | Hazard Class:             | None. Not a regulated material under the United States DOT, IMDG, ADR, RID, or ICAO/IATA.  |  |
| 14.4 | Packing Group:            | N/A  |  |
| 14.5 | Environmental Hazards:    | Not a marine pollutant according to the IMDG Code. Not environmentally hazardous according to the UN Model Regulations, ADR, RID or ADN. |  |
| 14.6 | User Precautions:         | Do not open or break a container during transportation unless absolutely needed.   |  |
| 14.7 | Bulk Transport:           | N/A  |  |



## **15. REGULATORY INFORMATION**

15.1 **Regulatory Information:** TSCA: All the substances in this mixture are listed or exempted in accordance with TSCA.

EPA Regulatory Information: N/A

**CERCLA Reportable Quantity:** Not applicable to this mixture.

#### 15.2 **Superfund Information:**

**Hazard Categories:** 

Immediate: N/A

Delayed: N/A

Fire: N/A

Pressure: N/A

Reactivity: N/A

Section 302 - Extremely Hazardous: Not applicable to this mixture.

**Section 311 - Hazardous:** Immediate health hazard: No (All the ingredients of this product are bound within the mixture.) Chronic health hazard: No (All the ingredients of this product are bound within the mixture.) Sudden release of pressure hazard: No. Reactive hazard: No.

| 15.3 State Regulations:      | California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986): This product does not contain any chemicals listed by the State of California.<br>This mixture complies with the requirements of the RoHS Directive 2011/65/EU and its amendment directives. Please refer to any other Federal/state/local measures that may be relevant. |  |  |
|------------------------------|--|--|--|
| 15.4 Other Regulatory Inform |  |  |  |
| 16. OTHER INFORMATION        |  |  |  |
| General Comments:            | his information is based on our current knowledge. It should not therefore be construe<br>uaranteeing specific properties of the products as described or their suitability for a pa<br>pplication   |  |  |

Creation Date of this SDS: 07/29/2020



## Key to Abbreviations and Acronyms used in this sheet:

| ACGIH = American Conference of Governmental Industrial     | NIOSH = National Institute for Occupational Safety and Health |
|--|---|
| Hygienists   |   |
| CERCLA = Comprehensive Environmental Response Compensation | OSHA = Occupational Health and Safety Administration          |
| and Liability Act  |   |
| CLP = Classification, Labeling, and Packaging              | PEL = Permissible Exposure Limit                              |
| DSD = Dangerous Substances Directive                       | SCBA = Self Contained Breathing Apparatus                     |
| EPA = Environmental Protection Agency                      | STOT = Specific Target Organ Toxicity                         |
| GHS = Globally Harmonized System                           | TLV = Threshold Limit Value                                   |
| N/A = Not Applicable                                       | UK = United Kingdom   |
| NFPA = National Fire Protection Association                | UN = United Nations   |
|  |   |
|  |   |
|  |   |
|  |   |

Ref:

DISCLAIMER

All trademarks and models referenced are property of their respective holders and are used for identification purposes only.

These products are not sponsored by, affiliated with, manufactured by or distributed by the named manufacturers.

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