

## SAFETY DATA SHEETS

**This SDS packet was issued with item:**

075356274

**The safety data sheets (SDS) in this packet apply to the individual products listed below. Please refer to invoice for specific item number(s).**

071304799 075356258 075356266 075356282

**The safety data sheets (SDS) in this packet apply to one or more components included in the items listed below. Items listed below may require one or more SDS. Please refer to invoice for specific item number(s).**

071364835 075356324 075356548

# Material Safety Data Sheet **DIAMOND D SELF CURE DENTAL ACRYLIC** Page 1 of 5

## Section I - Product and Company Identification

|                                    |  |                            |                      |
|------------------------------------|--|----------------------------|----------------------|
| <b>Product Name:</b>               | <b>DIAMOND D SELF CURE DENTAL ACRYLIC</b>  | <b>MSDS#:</b>              | <b>NKP090803-DDP</b> |
| <b>Chemical Name:</b>              | N/A  | <b>MSDS Approval Date:</b> | 09/10/2003           |
|                                    |  | <b>MSDS Prepared by:</b>   | BSQ                  |
| <b>Family:</b> Acrylic Polymer     | <b>Manufacturer:</b> NATIONAL KEYSTONE<br>616 Hollywood Ave, Cherry Hill, NJ 08002 |                            |                      |
| <b>Product Use:</b> Dental Polymer | <b>Emergency Phone Numbers:</b> (800) 535-5053                                     |                            |                      |
|                                    | <b>Information Contacts:</b> (856) 663-4700  |                            |                      |

## Section II - Composition/Information on Ingredients

| Chemical Identity      | CAS Numbers              | EINECS#   | INCI Name<br>(or other substance name) | Exposure         | Limits            | Carcinogen    | %    |
|------------------------|--------------------------|-----------|--|------------------|-------------------|---------------|------|
|                        |                          |           |  | OSHA<br>TWA/STEL | ACGIH<br>TWA/STEL | IARC/NTP/OSHA |      |
| Diethyl Phthalate      | 84-66-2                  | 201-550-6 | Diethyl phthalate                      | 5 mg/m3          | 5 mg/m3           | Not Listed    | <1   |
| Titanium Dioxide       | 13453-67-7               | 236-675-5 | CI77891                                | 15 mg/m3         | 10 mg/m3          | Not Listed    | <1   |
| Dibenzoyl Peroxide     | 94-36-0                  | 202-327-6 | Benzoyl Peroxide                       | 5 mg/m3          | 5 mg/m3           | 3/no/no       | <0.2 |
| N/E - None Established | N/DA - No Data Available |           |  |                  |                   |               |      |
| N/R - Not Reviewed     | N/A - Not Applicable     |           |  |                  |                   |               |      |

**Hazard Symbols:** Xi

This product is not considered hazardous by OSHA Hazard Communication Standard.

**Risk Phrases:** R36/37/38

**Safety Phrases:** S18, S22, S24/25, S38

## Section III - Hazards Identification

### EMERGENCY OVERVIEW

This information is based on findings from related or similar materials.

- May cause allergic skin reaction.
- May cause eye irritation.
- Dust may cause irritation of the nose, throat, and lungs.
- This product may contain particulates, not otherwise classified (Nuisance Dust)

### Potential Health Effects, Signs and Symptoms of Exposure:

|                        |   |
|------------------------|---|
| Primary Route of Entry | Eyes or skin (No absorption); inhalation of dust.   |
| Eye                    | Higher concentration can irritate eyes. May cause eye irritation or damage.   |
| Skin                   | Repeated or prolonged exposure may cause allergic skin rashes.  |
| Ingestion              | Higher concentration can irritate respiratory system.   |
| Inhalation             | Possible temporary discomfort due to inhalation of dust concentration above the permissible exposure limit. Dust may cause irritation of the nose, throat, and lungs.   |
| Sub-Chronic Effects    | Effects of Acute and Chronic Over Exposure: It is not known to cause significant health problems. It is considered an inert or nuisance dust. Avoid inhalation of dust. Keep dust out of eyes to prevent possible irritation. |

NOTE: Refer to Section 11, Toxicological Information for Details

## Section IV - First Aid Measures

|                          |  |
|--------------------------|--|
| First Aid for Eye        | Flush with plenty of water for 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid if symptoms persist.  |
| First Aid for Skin       | Wash thoroughly with soap and water. Obtain medical aid if discomfort persists.  |
| First Aid for Inhalation | In case of exposure to a high concentration of polymer dust, remove person to fresh air. If breathing has stopped, administer artificial respiration and seek medical attention. |

# Material Safety Data Sheet **DIAMOND D SELF CURE DENTAL ACRYLIC** Page 2 of 5

**First Aid for Ingestion** Never give anything by mouth to an unconscious person. Get medical aid. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2 to 4 cupfuls of milk or water.

## Section V - Fire Fighting Measures

| Flash Point<br>(°F/°C)       | Flammable Limit<br>(vol%)                          | Auto-ignition Temperature<br>(vol%) |
|------------------------------|--|-------------------------------------|
| 572°F/304°C (Tag Closed Cup) | LEL: 20 g/m <sup>3</sup> (dust cloud)<br>UEL: N.A. | N/E                                 |

### Method:

**Extinguishing Media:** Water spray, water foam, carbon dioxide, dry chemical.

**Fire Fighting Instructions:** Avoid extinguishing methods that generate dust clouds. Water streams can disperse dust into air, producing a fire hazard and possible explosion hazard. Fire-fighters should wear self-contained breathing apparatus.

**Unusual Hazards:** Polymer dust is combustible but not easily ignited. The explosive limits of the polymer particles suspended in air are approximately those of coal dust.

## Section VI - Accidental Release Measures

**Spill or Release Procedures** Sweep up to avoid slipping hazard. Keep airborne particulates at a minimum when cleaning up spills.

## Section VII - Handling and Storage

**Handling** Observe precautions found on the label. Wash face and hands thoroughly with soap and water after handling and before eating, drinking or smoking. Avoid prolonged or repeated contact with skin. Avoid contamination. Use only with adequate ventilation.

**Storage** Store in cool, dry place away from heat, sparks, flame and direct sunlight. Close container after each use. Ground all metal containers when transferring. Use explosion-proof equipment. Store away from combustibles and incompatible materials.

**Explosion Hazard** Polymer dust is combustible, explosive limits of the polymer particles suspended in air are approximately those of coal dust.

## Section VIII - Exposure Controls / Personal Protective Equipment

**Engineering Controls** Use good local exhaust at processing equipment, including buffers, sanders, grinders and polishers. High temperature processing equipment should be well ventilated. Use explosion-proof equipment. Provide ventilation if necessary to control exposure levels below airborne exposure limits.

### Personal Protective Equipment

**General** Dust collectors are recommended for handling powder in bulk. To identify additional Personal Protective Equipment (PPE) requirements, it is recommended that a hazard assessment in accordance with the OSHA PPE Standard (29CFR1910.132), or European Standard EN166 be conducted before using this product. Provide eye wash stations and safety showers.

**Eye/ Face Protection** Use safety glasses and have eye flushing equipment immediately available.

**Skin Protection** Minimize contamination by following good industrial practice. Although wearing gloves is an option, wearing nitrile, neoprene, pvc, latex or other impermeable gloves is recommended.

**Respiratory Protection** A NIOSH/MSHA approved air purifying respirator with a minimum rating of N95 may be permissible under certain limited circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepiece airline respirator in the positive pressure mode with

# Material Safety Data Sheet **DIAMOND D SELF CURE DENTAL ACRYLIC** Page 3 of 5

emergency escape provisions. Follow OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149.

## Section IX - Physical and Chemical Properties

| Appearance                                       | Odor & Odor Threshold | pH  | Specific Gravity | Viscosity | % Volatile |
|--|-----------------------|-----|------------------|-----------|------------|
| Clear, pink, or reddish-pink free flowing powder | Faint odor in bulk.   | N/A | N/A              | N/A       | 0.0        |

| Boiling Point/<br>Freezing Point | Decomposition<br>Temperature | Octanol/Water<br>Partitioning<br>Coefficient<br>Log Po/w | Vapor<br>Pressure: | Vapor<br>Density | Evaporation<br>Rate | Ignition | Solubility<br>In Water<br>(20°C) |
|----------------------------------|------------------------------|--|--------------------|------------------|---------------------|----------|----------------------------------|
| N/A                              | 392°F/200°C                  | N/A  | N/A                | N/A              | N/A                 | N/A      | insoluble                        |

| Flash Point<br>(°F/°C)       | Flammable Limit<br>(vol%)                          | Auto-ignition Temperature<br>(vol%) |
|------------------------------|--|-------------------------------------|
| 580°F/304°C (Tag Closed Cup) | LEL: 20 g/m <sup>3</sup> (dust cloud)<br>UEL: N.A. | N/E                                 |

## Section X - Stability and Reactivity

### Stability:

Stable

### Hazardous Decomposition Products:

Methyl methacrylate monomers and Carbon Dioxide

### Conditions to Avoid:

Heating above 200°C/392°F

### Incompatibility (Materials to Avoid):

Strong oxidizing agents

### Hazardous Polymerization:

will not occur

## Section XI - Toxicological Information

| Acute Oral Toxicity | Acute Dermal Toxicity | Acute Inhalation Toxicity | Irritation - skin | Irritation - Eye |
|---------------------|-----------------------|---------------------------|-------------------|------------------|
| N/DA                | N/DA                  | N/DA                      | mild              | mild             |

| Sensitization | Mutagenicity | Sub-chronic Toxicity |
|---------------|--------------|----------------------|
| N/DA          | None         | None                 |

## Section XII - Ecological Information

### Ecotoxicological Information

| Acute Toxicity<br>to Fish | Acute Toxicity<br>to Invertebrates | Acute Toxicity<br>to Algae | Bioconcentration | Toxicity to Sewage Bacteria |
|---------------------------|------------------------------------|----------------------------|------------------|-----------------------------|
| N/DA                      | N/DA                               | N/DA                       | N/DA             | N/DA                        |

### Chemical Fate Information

| Biodegradability       | N/DA |
|------------------------|------|
| Chemical Oxygen Demand | N/DA |

## Section XIII - Disposable Considerations

May be disposed of in a landfill or incinerated. Follow Federal, State and Local regulations for disposal.

## Section XIV - Transport Information

| DOT (49 CFR 172)       |                        |
|------------------------|------------------------|
| Proper Shipping Name:  | Non-Regulated Material |
| Identification Number: | N/A                    |
| Marine Pollutant:      | No                     |

# Material Safety Data Sheet **DIAMOND D SELF CURE DENTAL ACRYLIC** Page 4 of 5

|   |                        |
|---|------------------------|
| Special Provisions:                       | N/A                    |
| Emergency Response Guidebook (ERG) #:     | N/A                    |
| IATA (DGR):                               |                        |
| Proper Shipping Name:                     | Non-Regulated Material |
| Class or Division:                        | N/A                    |
| UN or ID Number:                          | N/A                    |
| Packaging Instructions:                   |                        |
| Emergency Response Guidance (ICAO)#:      |                        |
| IMO (IMDG):                               |                        |
| Proper Shipping Name:                     | Non-Regulated Material |
| Class or Division:                        | N/A                    |
| UN or ID Number:                          | N/A                    |
| Special Provisions & Stowage/Segregation: | None                   |
| Emergency Schedule (EmS)#:                |                        |
| Other Information:                        | Flash point > 100°C    |

## Section XV - Regulatory Information

### US Federal Regulations

|                                     |  |
|-------------------------------------|--|
| Clean Air Act: HAP/ODS              | This product contains the following hazardous air pollutants (HAP's) or ozone depleting substances (ODS's), as defined by the U. S. Clean Air Act:<br><ul style="list-style-type: none"> <li>NONE</li> </ul>   |
| Clean Water Act: Priority Pollutant | This product contains the following chemicals listed under the U.S. Clean Water Act Priority Pollutant List:<br><ul style="list-style-type: none"> <li>Diethyl phthalate, CAS# 84-66-2</li> </ul> None of the chemicals are listed as a Toxic Pollutant under the CWA. |
| FDA: Food Packaging Status          | This product has not been cleared by the FDA for use in food packaging and/or other applications as an indirect food additive.   |
| Occupational Safety and Health Act  | This product is not considered a hazardous chemical under the OSHA Hazard Communication Standard.  |
| RCRA                                | This product contains the following chemicals considered to be hazardous waste under RCRA (40 CFR 261):<br><ul style="list-style-type: none"> <li>Diethyl phthalate, CAS# 84-66-2, RCRA Code: U088</li> </ul>  |
| SARA Title III: Section 302         | This product contains the following chemicals regulated under Sec. 302 as extremely hazardous substances:<br><ul style="list-style-type: none"> <li>Diethyl phthalate, CAS#: 84-66-2, RQ= 1000 lbs. (454 kg)</li> </ul>  |
| SARA Title III: Section 304         | This product contains no chemicals regulated under Sec. 304 as extremely hazardous chemicals for emergency release notification ("CERCLA" List).   |
| SARA Title III: Section 311-312:    | This product does not contain hazardous substances under the OSHA Hazard Communication Standard, and is not regulated under Section 311-312 (40 CFR 370).  |
| SARA Title III: Section 313:        | This product contains the following chemicals outlined in SARA Title III: Section 313:<br><ul style="list-style-type: none"> <li>Benzoyl Peroxide CAS #94-36-0.</li> </ul>   |
| TSCA Section 8(b): Inventory:       | This product contains chemicals listed on the TSCA inventory or otherwise complies with TSCA premanufacture notification requirements.   |


### State Regulations

|                       |   |
|-----------------------|---|
| CA Right-to-Know Law: | Benzoyl Peroxide CAS #94-36-0, Diethyl phthalate CAS# 84-66-2 |
| MA Right-to-Know Law: | Benzoyl Peroxide CAS #94-36-0, Diethyl phthalate CAS# 84-66-2 |
| NJ Right-to-Know Law: | Benzoyl Peroxide CAS #94-36-0, Diethyl phthalate CAS# 84-66-2 |
| PA Right-to-Know Law: | Benzoyl Peroxide CAS #94-36-0, Diethyl phthalate CAS# 84-66-2 |

# Material Safety Data Sheet **DIAMOND D SELF CURE DENTAL ACRYLIC** Page 5 of 5

|                       |   |
|-----------------------|---|
| FL Right-to-Know Law: | Benzoyl Peroxide CAS #94-36-0, Diethyl phthalate CAS# 84-66-2 |
| MN Right-to-Know Law: | Benzoyl Peroxide CAS #94-36-0, Diethyl phthalate CAS# 84-66-2 |

## International Regulations

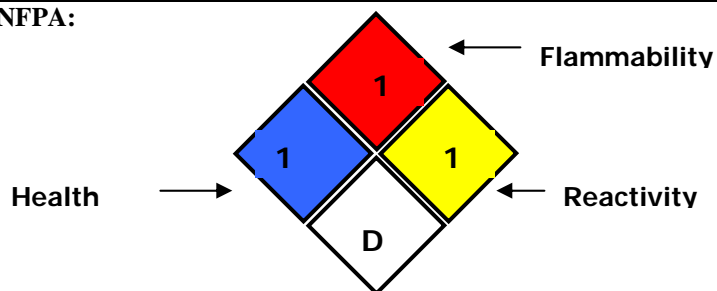
|  |   |
|--|---|
| CDSL: Canadian Inventory<br>(on Canadian Transitional List)  | Benzoyl Peroxide, CAS# 94-36-0 is on the DSL list. WHMIS = C, D2B, B4<br>Diethyl phthalate, CAS# 84-66-2 is on the DSL list, WHMIS = n/da<br>Titanium dioxide, CAS# 13463-67-7 is not on the DSL list.  |
| EINECS: European Inventory:<br><br> | <b>Diamond D Self Cure Dental Acrylic:</b> <ul style="list-style-type: none"> <li>HAZARD SYMBOLS: <b>Xi: Irritant</b></li> <li>RISK PHRASES: <b>R36/37/38: Irritating to eyes, respiratory system and skin</b></li> <li>SAFETY PHRASES: <b>S18: Handle and open container with care, S22: do not breath dust, S24/25: avoid contact with skin and eyes, S38: in case of insufficient ventilation, wear suitable respiratory equipment.</b></li> </ul> |

## Section XVI - Other Information

### Hazard Rating System (Pictograms)

NFPA:

HMIS:



|    |              |
|----|--------------|
| 1  | Health       |
| 1  | Flammability |
| 1  | Reactivity   |
| *D |              |

\* - Respiratory protection may be necessary depending on conditions of use. Refer to Section VIII of this MSDS for respiratory protection guidelines.

**Approval Date: 9/08/2003**
**Supersedes Date: Initial Issue**

OSHA PEL for nuisance dust: 15 mg/m<sup>3</sup> (total dust)  
5 mg/m<sup>3</sup> (respirable dust)  
ACGIH PEL for nuisance dust: 10 mg/m<sup>3</sup>

|                                      |   |
|--------------------------------------|---|
| Product Number -                     |   |
| Revised Sections since Last Version: | Initial Issue   |
|                                      | 1/21/2010 Section IX updated appearance as MSDS covers various colors SWR |

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Date of Issue 1/21/10

## Section 1. Identification

**GHS product identifier** : Diamond D Self Cure Powder

**Other means of identification** : Not available.

**Product code** : 1013050-1013052, 1013054-1013056, 1013058-1013060, 1013073-1013075, 1013077-1013079, 1013081-1013083, 1013109-1013111, 1013115, 1013116

**Product type** : Powder.

**Product use** : Dental Products  
Polymer

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

Not applicable.

**Supplier's details** : Keystone Industries  
616 Hollywood Ave.  
Cherry Hill, NJ 08002  
(856) 663-4700

**Emergency telephone number (with hours of operation)** : (800) 535-5053

## 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  
CARCINOGENICITY - Category 2  
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 99%

### GHS label elements

**Hazard pictograms** :



**Signal word** : Warning

**Hazard statements** : May form combustible dust concentrations in air.  
Suspected of causing cancer.

### Precautionary statements

**Prevention** : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing.

**Response** : IF exposed or concerned: Get medical attention.

**Storage** : Store locked up.

**Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.

**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.

**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  
**Other means of identification** : Not available.

### CAS number/other identifiers

**CAS number** : Not applicable.

May contain one or more of the following components in quantities considered hazardous:

| Ingredient name  | CAS number | EC number | %       |
|------------------|------------|-----------|---------|
| titanium dioxide | 13463-67-7 | 236-675-5 | 0.1 - 1 |

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.

**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 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.

**Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. 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. 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

**Eye contact** : Adverse symptoms may include the following:  
 irritation  
 redness



## Section 4. First aid measures

- 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** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- 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

- 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".

- 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

## Section 6. Accidental release measures

- Small spill** : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, 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. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, 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). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. 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** : Do not store above the following temperature: 200°C (392°F). 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. Store locked up. 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

| Ingredient name  | Exposure limits  |
|------------------|--|
| titanium dioxide | <b>ACGIH TLV (United States, 3/2015).</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 |

## Section 8. Exposure controls/personal protection

- 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. [Powder.]
- Color** : Clear. or Pink or Red.-Pink
- Odor** : Faint odor. [Slight]
- pH** : Not applicable.
- Melting point** : Not available.
- Boiling point** : Not available.
- Flash point** : Closed cup: 304°C (579.2°F) [Tagliabue.]
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Not available.

## Section 9. Physical and chemical properties

|   |   |
|---|---|
| <b>Relative density</b>                       | : Not available.  |
| <b>Solubility</b>                             | : Insoluble in the following materials: cold water and hot water. |
| <b>Solubility in water</b>                    | : Not available.  |
| <b>Partition coefficient: n-octanol/water</b> | : Not available.  |
| <b>Auto-ignition temperature</b>              | : Not available.  |
| <b>Decomposition temperature</b>              | : 200°C (392°F)   |
| <b>Viscosity</b>                              | : Not available.  |

## Section 10. Stability and reactivity

|   |   |
|---|---|
| <b>Reactivity</b>                         | : No specific test data related to reactivity available for this product or its ingredients.  |
| <b>Chemical stability</b>                 | : The product is stable.  |
| <b>Possibility of hazardous reactions</b> | : Under normal conditions of storage and use, hazardous reactions will not occur.   |
| <b>Conditions to avoid</b>                | : 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. |
| <b>Incompatible materials</b>             | : Reactive or incompatible with the following materials:<br>oxidizing materials   |
| <b>Hazardous decomposition products</b>   | : Under normal conditions of storage and use, hazardous decomposition products should not be produced.  |

## Section 11. Toxicological information

### Information on toxicological effects

#### Irritation/Corrosion

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

#### Classification

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

|   |                  |
|---|------------------|
| <b>Information on the likely routes of exposure</b> | : Not available. |
|---|------------------|

### Potential acute health effects

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

## Section 11. Toxicological information

### 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** : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
- Mutagenicity** : No known significant effects or critical hazards.
- 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

| 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 |
|                         | Acute LC50 >1000000 µg/l Marine water | Fish - Fundulus heteroclitus               | 96 hours |

### Bioaccumulative potential

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

## Section 12. Ecological information

### Mobility in soil

Soil/water partition coefficient ( $K_{oc}$ ) : 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.

### United States - RCRA Toxic hazardous waste "U" List

| Ingredient   | CAS #   | Status | Reference number |
|--|---------|--------|------------------|
| Diethyl phthalate; 1,2-Benzenedicarboxylic acid, diethyl ester | 84-66-2 | Listed | U088             |

## Section 14. Transport information

|                            | DOT Classification  | TDG Classification | Mexico Classification | ADR/RID        | IMDG           | IATA           |
|----------------------------|---|--------------------|-----------------------|----------------|----------------|----------------|
| UN number                  | Not regulated.  | Not regulated.     | Not regulated.        | Not regulated. | Not regulated. | Not regulated. |
| UN proper shipping name    | -   | -                  | -                     | -              | -              | -              |
| Transport hazard class(es) | -   | -                  | -                     | -              | -              | -              |
| Packing group              | -   | -                  | -                     | -              | -              | -              |
| Environmental hazards      | No.   | No.                | No.                   | No.            | No.            | No.            |
| Additional information     | <b>Reportable quantity</b><br>25000 lbs /<br>11350 kg<br>Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable) | -                  | -                     | -              | -              | -              |

## Section 14. Transport information

|  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|
|  | quantity)<br>transportation<br>requirements. |  |  |  |  |  |
|--|--|--|--|--|--|--|

**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

**U.S. Federal regulations** : **TSCA 8(a) CDR Exempt/Partial exemption:** Not determined  
**United States inventory (TSCA 8b):** All components are listed or exempted.  
**Clean Water Act (CWA) 307:** diethyl phthalate

**Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** : Not listed

**Clean Air Act Section 602 Class I Substances** : Not listed

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Not listed

### SARA 302/304

#### Composition/information on ingredients

No products were found.

**SARA 304 RQ** : Not applicable.

### SARA 311/312

**Classification** : Not applicable.

#### Composition/information on ingredients

| Name             | %       | Fire hazard | Sudden release of pressure | Reactive | Immediate (acute) health hazard | Delayed (chronic) health hazard |
|------------------|---------|-------------|----------------------------|----------|---------------------------------|---------------------------------|
| titanium dioxide | 0.1 - 1 | No.         | No.                        | No.      | No.                             | Yes.                            |

### State regulations

**Massachusetts** : The following components are listed: DIETHYL PHTHALATE

**New York** : The following components are listed: Diethyl phthalate

**New Jersey** : The following components are listed: DIETHYL PHTHALATE; 1, 2-BENZENEDICARBOXYLIC ACID, DIETHYL ESTER; DEP; TITANIUM DIOXIDE; TITANIUM OXIDE (TiO<sub>2</sub>)



## Section 15. Regulatory information

**Pennsylvania** : The following components are listed: 1,2-BENZENEDICARBOXYLIC ACID, DIETHYL ESTER; TITANIUM OXIDE (TiO<sub>2</sub>)

### California Prop. 65

**WARNING:** This product contains a chemical known to the State of California to cause cancer.

| Ingredient name  | Cancer | Reproductive | No significant risk level | Maximum acceptable dosage level |
|------------------|--------|--------------|---------------------------|---------------------------------|
| titanium dioxide | Yes.   | No.          | No.                       | No.                             |

**Canada inventory** : All components are listed or exempted.

### International regulations

**International lists** : **Australia inventory (AICS)**: All components are listed or exempted.  
**China inventory (IECSC)**: All components are listed or exempted.  
**Japan inventory**: All components are listed or exempted.  
**Korea inventory**: All components are listed or exempted.  
**Malaysia Inventory (EHS Register)**: Not determined.  
**New Zealand Inventory of Chemicals (NZIoC)**: All components are listed or exempted.  
**Philippines inventory (PICCS)**: All components are listed or exempted.  
**Taiwan inventory (CSNN)**: All components are listed or exempted.

**Chemical Weapons Convention List Schedule I Chemicals** : Not listed

**Chemical Weapons Convention List Schedule II Chemicals** : Not listed

**Chemical Weapons Convention List Schedule III Chemicals** : Not listed

## Section 16. Other information

### Hazardous Material Information System (U.S.A.)

|                     |   |
|---------------------|---|
| Health              | 1 |
| Flammability        | 1 |
| Physical hazards    | 0 |
| Personal protection |   |

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The customer is responsible for determining the PPE code for this material.

### National Fire Protection Association (U.S.A.)



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## Section 16. Other information

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

### History

**Date of printing** : 9/8/2015  
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**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** : Not available.

Indicates information that has changed from previously issued version.

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