This SDS packet was issued with item:

076467625

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

076467617 076467633

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).

076467609
MATERIAL DATA SAFETY SHEET

SECTION 1
PRODUCT AND COMPANY INFORMATION

Product Name: BOND 1® DUAL CURE ACTIVATOR
Uses/Application: Dental Products
Manufacturer: PENTRON CLINICAL
1717 West Collins Avenue
Orange, CA 92867
USA
Telephone: 1-800-551-0283

In Case of Emergency: CHEMTREC, US.: 1-800-424-9300  International: +703-527-3887
Date Prepared: May 2011
Date Revised:

SECTION 2
COMPOSITION INFORMATION

<table>
<thead>
<tr>
<th>HAZARDOUS INGREDIENTS</th>
<th>CAS No.</th>
<th>PEL</th>
<th>TLV</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>67-64-1</td>
<td>1800 mg/m³</td>
<td>1188 mg/m³</td>
<td>60 - 100</td>
</tr>
<tr>
<td>Dibenzoyl Peroxide</td>
<td>94-36-0</td>
<td>5 mg/m³</td>
<td>5 mg/m³</td>
<td>1 - 5</td>
</tr>
</tbody>
</table>

SECTION 3
HAZARD IDENTIFICATION

Signal Word: WARNING!

Hazard statements: FLAMMABLE LIQUID AND VAPOR. INHALATION CAUSES HEADACHES, DIZZINESS, DROWSINESS AND NAUSEA AND MAY LEAD TO UNCONSCIOUSNESS. CAUSES EYE IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. MAY CAUSE RESPIRATORY TRACT AND SKIN IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

Color: Yellow (Light)

Precautions: Keep away from heat, sparks and flame. Do not breathe vapor or mist. Do not get on skin or clothing. Avoid contact with eyes. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Routes of entry: Dermal contact. Eye contact. Inhalation. Ingestion.
OSHA/HCS Status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Potential acute health effects:

**Inhalation:** Can cause central nervous system (CNS) depression. Slightly irritating to the respiratory system.

**Ingestion:** Can cause central nervous system (CNS) depression.

**Skin:** Slightly irritating to the skin. May cause sensitization by skin contact.

**Eyes:** Irritating to eyes.

Potential chronic health effects:

**Chronic effects:** Contains material that may cause target organ damage, based on animal data. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Exposed to very low levels. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

**Target organs:** Contains material which may cause damage to the following organs: blood, kidneys, liver, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.

**Carcinogenicity classification:** No known significant effects or critical hazards.

**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.

### SECTION 4

**EMERGENCY FIRST AID PROCEDURES**

**Skin:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Get medical attention if symptoms persist.

**Eyes:** Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

**Inhalation:** Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention immediately.

**Ingestion:** Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms persist.

**Note to physician:** In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
SECTION 5
FIRE AND EXPLOSION HAZARD DATA

Flammability of the product: Flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Extinguishing media:
Suitable: Use dry chemical, CO2, water spray (fog).

Not suitable: Do not use water jet.

Special exposure hazards: 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.

Hazardous thermal decomposition products: Decomposition products may include the following materials: Carbon dioxide and carbon monoxide

Special fire fighting procedures: 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: No action shall be taken involving any personal risk or without suitable training. 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. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

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

Methods for cleaning up:
Small spills: Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

Large spills: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor.
SECTION 7
PRECAUTIONS FOR HANDLING & STORAGE

Precautions to be taken in handling:
Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. 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.

Precautions to be taken for storage:
Store between the following temperatures: 2 to 12°C (35.6 to 53.6°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. 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.

Other precautions:
Keep out of reach of children. Avoid skin and eye contact. Avoid contamination of food.

SECTION 8
CONTROL MEASURES

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>TWA (8 hours) mg/m³</th>
<th>STEL (15 mins) mg/m³</th>
<th>Ceiling ppm</th>
<th>Ceiling mg/m³</th>
<th>Notations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>1800</td>
<td>1782</td>
<td>N/D</td>
<td>N/D</td>
<td></td>
</tr>
<tr>
<td>Dibenzoyl Peroxide</td>
<td>5</td>
<td>N/D</td>
<td>N/D</td>
<td>N/D</td>
<td></td>
</tr>
</tbody>
</table>

Engineering measures:
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.

Work/Hygiene Practices:
Handle in accordance with good personal hygiene and safety practices. These practices include avoiding unnecessary exposure.

Personal 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.

Eye protections:
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 or dusts. Recommended: Safety glasses, goggles or face shield.

Respiratory:
If a risk assessment indicates that respirators are needed, use a properly fitted, air purifying or air-fed respirator complying with an approved standard this is necessary.

Skin:
Based on the risks assessment, personal protective equipment for the body should be selected based on the task being performed and recommendations. The use of lab coat is recommended.
### SECTION 9
**PHYSICAL AND CHEMICAL PROPERTIES**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid (Clear)</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>N/A</td>
</tr>
<tr>
<td>Color</td>
<td>Yellow (Light)</td>
</tr>
<tr>
<td>Odor</td>
<td>Acetone-Like</td>
</tr>
<tr>
<td>Vapor density</td>
<td>2 [Air = 1]</td>
</tr>
<tr>
<td>pH</td>
<td>N/A</td>
</tr>
<tr>
<td>Flash point</td>
<td>24 kPa (180 mm Hg) [20°C]</td>
</tr>
<tr>
<td>Melting/freezing point</td>
<td>(-95°C) (-139°F)</td>
</tr>
<tr>
<td>Boiling/condensation point</td>
<td>56°C (132.8°F)</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>465°C (869°F)</td>
</tr>
<tr>
<td>Resin</td>
<td>≤ 5%</td>
</tr>
<tr>
<td>Properties Comments</td>
<td>Organic Solvent: ≥ 90% Water ≤ 5%</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in the following materials: Cold water and hot water</td>
</tr>
</tbody>
</table>

### SECTION 10
**STABILITY AND REACTIVITY DATA**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability</td>
<td>The product is stable</td>
</tr>
<tr>
<td>Conditions to Avoid:</td>
<td>Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.</td>
</tr>
<tr>
<td>Incompatibility &amp; Reactive (Material to Avoid):</td>
<td>Reactive or incompatible with the following materials: oxidizing materials, reducing materials, acids, alkalis, ammonia, phosphorous oxychloride, amines, chlorinated compounds</td>
</tr>
<tr>
<td>Hazardous Decomposition:</td>
<td>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</td>
</tr>
<tr>
<td>Hazardous Polymerization:</td>
<td>Under normal conditions of storage and use, hazardous polymerization will not occur.</td>
</tr>
</tbody>
</table>

### SECTION 11
**TOXICOLOGICAL INFORMATION**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>LD&lt;sub&gt;50&lt;/sub&gt; Oral</td>
<td>Rat</td>
<td>5800 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Dibenzoyl Peroxide</td>
<td>LD&lt;sub&gt;50&lt;/sub&gt; Oral</td>
<td>Rat</td>
<td>6400 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>
PENTRON CLINICAL  
Material Safety Data Sheet for:  Bond-1 Dual Cure Activator

Irritation/Corrosion:  Not available

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>Eyes- Mild Irritant</td>
<td>Human</td>
<td>-</td>
<td>186300 parts per million</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes- Mild Irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>10 microliters</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 20 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Mild Irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin Severe Irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>1344 hours 5% Intermittent</td>
<td>-</td>
</tr>
<tr>
<td>Dibenzoyl Peroxide</td>
<td>Eyes - Mild Irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin Severe Irritant</td>
<td>Human</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Carcinogenicity Classification:

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>EPA</th>
<th>NIOSH</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>A4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Dibenzoyl Peroxide</td>
<td>A4</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Sensitizer:  Not available  
Mutagenicity: Not available  
Teratogenicity: Not available  
Reproductive Toxicity: Not available

SECTION 12  
ECOLOGICAL INFORMATION

This product shows a low bioaccumulation potential. This material is harmful to aquatic life with long lasting effects.

Aquatic Ecotoxicity:

<table>
<thead>
<tr>
<th>Product/ingredient Name</th>
<th>Result</th>
<th>Species</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>Acute EC50 5600000 to 10000000 ug/L Fresh water</td>
<td>Algae - Selenastrum sp.</td>
<td>72 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 20.565 mg/L Marine water</td>
<td>Algae - Ulva pertusa</td>
<td>96 Hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 7550000 ug/L Fresh water</td>
<td>Crustaceans - Asellus aquaticus</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 10000 ug/L Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
</tbody>
</table>

SECTION 13  
DISPOSAL CONSIDERATION

Waste Disposal:  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. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some products residues. Avoid dispersal or spilled material and runoff and contact with soil, waterways, drains and sewers.
### SECTION 14
**TRANSPORTATION INFORMATION**

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN number</th>
<th>Proper shipping name</th>
<th>Classes</th>
<th>PG*</th>
<th>Label</th>
<th>Additional information</th>
</tr>
</thead>
</table>
| DOT Classification     | 1993      | Flammable liquids, n.o.s. (acetone) | 3       | II  | ![Flammable] | Limited quantity: Yes  
Packaging instruction  
Passenger aircraft  
Quantity limitation: 5 L  
Cargo aircraft  
Quantity limitation: 60 L  
Special provisions  
IB2, T7, TP1, TP8, TP28 |
| IMDG Class             | 1993      | FLAMMABLE LIQUID, N.O.S. (acetone) | 3       | II  | ![Flammable] | Emergency schedules (EmS)  
F-E, S-E |
| IATA-DGR Class         | 1993      | Flammable liquids, n.o.s. (acetone) | 3       | II  | ![Flammable] | Passenger and Cargo Aircraft  
Quantity limitation: 5 L  
Packaging instructions: 353  
Cargo Aircraft Only  
Quantity limitation: 60L  
Packaging instructions: 364  
Limited Quantities - Passenger Aircraft  
Quantity limitation: 1 L  
Packaging instructions: Y341 |

**PG*: Packing Group**

### SECTION 15
**REGULATORY INFORMATION**

**U.S. Federal regulations TSCA 8(a) IUR:** Partial exemption United States inventory (TSCA 8b): All components are listed or exempted.

**Form R-Reporting Requirements:**  
Product Name: Dibenzoyl Peroxide  
CAS# 94-36-0  
Concentracion 1-5
## SECTION 16
### OTHER INFORMATION

Hazardous Material Information System (HMIS):
Health 2, Flammability 3, Physical Hazard 0.

Note: To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.
SAFETY DATA SHEET
Bond 1® Dual Cure Activator

Section 1. Identification

GHS product identifier : Bond 1® Dual Cure Activator
Other means of identification : Not available.
Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against
Product use : Dental product: Total-etch bonding system
Area of application : Professional applications.

Manufacturer
Pentron Clinical
1717 West Collins Avenue
Orange, CA 92867-5422
Telephone no.: 1-203-265-7397, Toll Free: 1-800-551-0283

Manufacturer e-mail address of person responsible for this SDS : edwin.varela@kavokerrgroup.com

Emergency telephone number (with hours of operation) : CHEMTREC® (24 hours) U.S. : 1-800-424-9300 International: +1-703-527-3887

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Health effects are based on the uncured material.

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
SKIN SENSITIZATION - Category 1
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

GHS label elements
Hazard pictograms :

Signal word : Danger
Hazard statements : Highly flammable liquid and vapor.
Causes serious eye irritation.
May cause an allergic skin reaction.
May cause drowsiness and dizziness.

Precautionary statements
Section 2. Hazards identification

Prevention: Wear protective gloves. Wear eye or face protection. Keep away from heat, sparks, open flames and hot surfaces. - No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

Response: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage: Store locked up. Store in a well-ventilated place. Keep cool.

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

Supplemental label elements: Avoid contact with skin and clothing. Wash thoroughly after handling.

Hazards not otherwise classified: Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other means of identification</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

CAS number/other identifiers:

| CAS number | Not applicable. |
| Product code | Not available. |

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Other names</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>acetone</td>
<td>acetone</td>
<td>60 - 100</td>
<td>67-64-1</td>
</tr>
<tr>
<td>dibenzoyl peroxide</td>
<td>dibenzoyl peroxide</td>
<td>1 - 5</td>
<td>94-36-0</td>
</tr>
</tbody>
</table>

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 and hence require reporting in this section.

Section 4. First aid measures

Description of necessary first aid measures:

Eye contact: No special measures are required. In case of contact with eyes, rinse immediately with plenty of water. Get medical attention if symptoms occur.

Inhalation: No special measures required. If inhaled, remove to fresh air. Get medical attention if symptoms occur.

Skin contact: No special measures required. In case of contact, immediately flush skin with plenty of water. Get medical attention if symptoms occur.

Ingestion: Wash out mouth with water. 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. Get medical attention if adverse health effects persist or are severe.

Most important symptoms/effects, acute and delayed:

Date of issue/Date of revision: 09/05/2014
Date of previous issue: No previous validation
Version: 1

United States

Obtained by Global Safety Management, www.globalsafetynet.com (877) 683-7460
Section 4. First aid measures

Potential acute health effects

Eye contact : Causes serious eye irritation.
Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.
Skin contact : Defatting to the skin. May cause skin dryness and irritation. May cause an allergic skin reaction.
Ingestion : Can cause central nervous system (CNS) depression. Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
- pain or irritation
- watering
- redness

Inhalation : Adverse symptoms may include the following:
- nausea or vomiting
- headache
- drowsiness/fatigue
- dizziness/vertigo
- unconsciousness

Skin contact : Adverse symptoms may include the following:
- irritation
- redness
- dryness
- cracking

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 : In case of major fire and large quantities: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO₂, water spray (fog) or foam.
Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Highly flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide
Section 5. Fire-fighting measures

**Special protective actions for fire-fighters**
- In case of major fire and large quantities: 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**
  - Low release. For professional use only. Handling of product in very small amounts or in situations where release is highly unlikely
- **For emergency responders**
  - Low release. See also the information in "For non-emergency personnel".

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

**Methods and materials for containment and cleaning up**
- **Small spill**
  - Small Quantity. For professional use only. Absorb with an inert material and place in an appropriate waste disposal container.
- **Large spill**
  - Small Quantity. For professional use only. Absorb with an inert material and place in an appropriate waste disposal container.

Section 7. Handling and storage

**Precautions for safe handling**
- **Protective measures**
  - No special measures are required for small quantities under normal and intended conditions of product use. For professional use only. Put on appropriate personal protective equipment (see Section 8). Handle with care and dispose in a safe manner.
- **Advice on general occupational hygiene**
  - Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- **Conditions for safe storage, including any incompatibilities**
  - Store between the following temperatures: 2 to 12°C (35.6 to 53.6°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**
## Section 8. Exposure controls/personal protection

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
</table>
| acetone                  | ACGIH TLV (United States, 6/2013).  
TWA: 500 ppm 8 hours.  
TWA: 1188 mg/m³ 8 hours.  
STEL: 750 ppm 15 minutes.  
STEL: 1782 mg/m³ 15 minutes.  
TWA: 750 ppm 8 hours.  
TWA: 1800 mg/m³ 8 hours.  
STEL: 1000 ppm 15 minutes.  
STEL: 2400 mg/m³ 15 minutes.  
NIOSH REL (United States, 10/2013).  
TWA: 250 ppm 10 hours.  
TWA: 590 mg/m³ 10 hours.  
OSHA PEL (United States, 2/2013).  
TWA: 1000 ppm 8 hours.  
TWA: 2400 mg/m³ 8 hours.  |
| dibenzoyl peroxide       | ACGIH TLV (United States, 6/2013).  
TWA: 5 mg/m³ 8 hours.  
TWA: 5 mg/m³ 8 hours.  
NIOSH REL (United States, 10/2013).  
TWA: 5 mg/m³ 10 hours.  
OSHA PEL (United States, 2/2013).  
TWA: 5 mg/m³ 8 hours.  |

### Appropriate engineering controls
No special measures are required for small quantities under normal and intended conditions of product use.

### Environmental exposure controls
No special measures are required for small quantities under normal and intended conditions of product use.

### Individual protection measures

#### Hygiene measures
No special measures are required for small quantities under normal and intended conditions of product use.

#### 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: chemical splash 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
No special measures are required for small quantities under normal and intended conditions of product use.

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
No special measures are required for small quantities under normal and intended conditions of product use.
Section 9. Physical and chemical properties

Appearance
Physical state : Liquid. [Clear.]
Color : Yellowish./Yellow.
Odor : acetone
Odor threshold : Not available.

pH : Not available.
Melting point : -95°C (-139°F)
Boiling point : 56°C (132.8°F)
Flash point : Not available.
Evaporation rate : Not available.

Flammability (solid, gas) : Not applicable.
Lower and upper explosive limits : Lower: 2.2%
Upper: 13%
Vapor pressure : 24 kPa (180 mm Hg) [room temperature]
Vapor density : 2 [Air = 1]
Relative density : 0.8
Solubility : Soluble in the following materials: cold water and hot water.
Solubility in water : Not available.
Partition coefficient: n-octanol/water : Not available.
Auto-ignition temperature : 465°C (869°F)
Decomposition temperature : Not available.
SADT : Not available.
Viscosity : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.

Incompatible materials : Reactive or incompatible with the following materials: oxidizing materials, reducing materials, acids and alkalis.
Ammonia.
Amines
Phosphorous oxychloride
Chlorinated compounds

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>acetone</td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>76 mg/l</td>
<td>4 hours</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>30000 ppm</td>
<td>4 hours</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>&gt;15800 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rabbit</td>
<td>5800 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>6400 mg/kg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

dibenzoyl peroxide

Conclusion/Summary: Based on the criteria of the protocol, this product is considered non-cytotoxic per ISO 10993-5.

Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>acetone</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>10 microliters</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 20 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>20 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>395 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>dibenzoyl peroxide</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td></td>
<td>-</td>
</tr>
</tbody>
</table>

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>OSHA</th>
<th>IARC</th>
<th>NTP</th>
</tr>
</thead>
<tbody>
<tr>
<td>dibenzoyl peroxide</td>
<td>-</td>
<td>3</td>
<td>-</td>
</tr>
</tbody>
</table>

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>acetone</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Narcotic effects</td>
</tr>
</tbody>
</table>

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.
Section 11. Toxicological information

Information on the likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact
Causes serious eye irritation.

Inhalation
Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.

Skin contact
Defatting to the skin. May cause skin dryness and irritation. May cause an allergic skin reaction.

Ingestion
Can cause central nervous system (CNS) depression. Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact
Adverse symptoms may include the following: pain or irritation, watering, redness.

Inhalation
Adverse symptoms may include the following: nausea or vomiting, headache, drowsiness/fatigue, dizziness/vertigo, unconsciousness.

Skin contact
Adverse symptoms may include the following: irritation, redness, dryness, cracking.

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
Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity
No known significant effects or critical hazards.

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

Date of issue/Date of revision: 09/05/2014
Date of previous issue: No previous validation
Version: 1

United States

Obtained by Global Safety Management, www.globalsafetynet.com (877) 683-7460
Section 11. Toxicological information
Not available.

Section 12. Ecological information

Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>acetone</td>
<td>Acute EC50 20.565 mg/l Marine water</td>
<td>Algae - Ulva pertusa</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 6000000 µg/l Fresh water</td>
<td>Crustaceans - Gammarus pulex</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 10000 µg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 100 mg/l Fresh water</td>
<td>Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling)</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 4.95 mg/l Marine water</td>
<td>Algae - Ulva pertusa</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 0.016 ml/L Fresh water</td>
<td>Crustaceans - Daphniidae</td>
<td>21 days</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 0.1 ml/L Fresh water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td>21 days</td>
</tr>
</tbody>
</table>

Persistence and degradability

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Result</th>
<th>Dose</th>
<th>Inoculum</th>
</tr>
</thead>
<tbody>
<tr>
<td>acetone</td>
<td>OECD 301B</td>
<td>Ready Biodegradability - CO₂ Evolution Test</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>90.9 % - 28 days</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP&lt;sub&gt;ow&lt;/sub&gt;</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>acetone</td>
<td>-0.23</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>dibenzoyl peroxide</td>
<td>3.2</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

Mobility in soil

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

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

Section 13. Disposal considerations

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

United States - RCRA Toxic hazardous waste "U" List

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS #</th>
<th>Status</th>
<th>Reference number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone (I); 2-Propanone (I)</td>
<td>67-64-1</td>
<td>Listed</td>
<td>U002</td>
</tr>
</tbody>
</table>

Date of issue/Date of revision: 09/05/2014  Date of previous issue: No previous validation  Version: 1 9/12

United States
### Section 14. Transport information

<table>
<thead>
<tr>
<th>DOT Classification</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN number</td>
<td>UN1090</td>
<td>UN1090</td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>Acetone solution RQ (acetone)</td>
<td>ACETONE solution</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Packing group</td>
<td>II</td>
<td>II</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>No.</td>
<td>No.</td>
</tr>
</tbody>
</table>

**Additional information**

- **Reportable quantity**: 5186.7 lbs / 2354.8 kg [777.58 gal / 2943.5 L]
- Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.
  - **Limited quantity**: Yes.
  - **Packaging instruction**
    - **Passenger aircraft**: Quantity limitation: 5 L
    - **Cargo aircraft**: Quantity limitation: 60 L
  - **Special provisions**: IB2, T4, TP1

- **Emergency schedules (EmS)**: F-E, S-D
- **Passenger and Cargo Aircraft**
  - Quantity limitation: 5 L
  - Packaging instructions: 353
- **Limited Quantities - Passenger Aircraft**
  - Quantity limitation: 1 L
  - Packaging instructions: Y341

**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**
  - **Clean Water Act (CWA) Section 311**
    - Hydrochloric acid
  - **Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)**: Not listed

**United States**

Obtained by Global Safety Management, www.globalsafetynet.com (877) 683-7460
Section 15. Regulatory information

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

DEA List I Chemicals (Precursor Chemicals): Not listed
DEA List II Chemicals (Essential Chemicals): Listed

SARA 302/304

Composition/information on ingredients
No products were found.

SARA 304 RQ: Not applicable.

SARA 311/312
Classification: Fire hazard
Immediate (acute) health hazard

SARA 313

<table>
<thead>
<tr>
<th>Product name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form R - Reporting requirements dibenzoyl peroxide</td>
<td>94-36-0</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Supplier notification dibenzoyl peroxide</td>
<td>94-36-0</td>
<td>1 - 5</td>
</tr>
</tbody>
</table>

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts: The following components are listed: ACETONE; BENZOYL PEROXIDE
New York: The following components are listed: Acetone; 2-Propanone
New Jersey: The following components are listed: ACETONE; 2-PROPANONE; BENZOYL PEROXIDE; DIBENZOYLPEROXIDE
Pennsylvania: The following components are listed: 2-PROPANONE; PEROXIDE; DIBENZOYL
California Prop. 65: None of the components are listed.

Section 16. Other information

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

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>*2</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

Date of issue/Date of revision: 09/05/2014
Date of previous issue: No previous validation
Version: 1

United States

Obtained by Global Safety Management, www.globalsafetynet.com (877) 683-7460
Section 16. Other information

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910, 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

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

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

<table>
<thead>
<tr>
<th>Flammability</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>2</td>
</tr>
<tr>
<td>Instability/Reactivity</td>
<td>0</td>
</tr>
<tr>
<td>Special</td>
<td></td>
</tr>
</tbody>
</table>

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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 issue/Date of revision: 09/05/2014
Date of previous issue: No previous validation
Version: 1
Prepared by: IHS

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
UN = United Nations

References

HCS (U.S.A.)- Hazard Communication Standard
International transport regulations

Indicates information that has changed from previously issued version.

Notice to reader

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

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