

# Kerr™ Material Safety Data Sheet

## LIFE BASE (Regular & Fast)

### 1. Product and company identification

**Product name** : LIFE BASE (Regular & Fast)  
**Material uses** : Dental cavity liner and pulp capping agent.  
**Manufacturer** : **Kerr Corporation**  
1717 West Collins Avenue  
Orange, CA 92867-5422  
Telephone no.: 1-800-KERR-123  
**Prepared by** : IHS  
**In case of emergency** : CHEMTREC® (24 hours) U.S. : 1-800-424-9300 International: +1-703-527-3887

### 2. Hazards identification

**Physical state** : Solid. [Paste. Viscous. semi-solid.]  
**Color** : Off-white.  
**Odor** : Odorless.

#### Emergency overview

**Signal word** : DANGER!  
**Hazard statements** : CAUSES RESPIRATORY TRACT, DIGESTIVE TRACT, EYE AND SKIN BURNS.  
CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

**Precautions** : Health effects are based on the uncured material. Do not ingest. Do not get in eyes or on skin or clothing. 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.

#### Potential acute health effects

**Inhalation** : Corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.  
**Ingestion** : Corrosive to the digestive tract. Causes burns.  
**Skin** : Corrosive to the skin. Causes burns.  
**Eyes** : Corrosive to eyes. Causes burns.

#### Potential chronic health effects

**Chronic effects** : Contains material that may cause target organ damage, based on animal data.  
**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.

**Target organs** : Contains material which may cause damage to the following organs: lungs, digestive system, gastrointestinal tract, upper respiratory tract, skin, eye, lens or cornea.

#### Over-exposure signs/symptoms

**Inhalation** :

## 2. Hazards identification

|   |  |
|---|--|
|   | Adverse symptoms may include the following:<br>respiratory tract irritation<br>coughing  |
| <b>Ingestion</b>                                      | : Adverse symptoms may include the following:<br>stomach pains   |
| <b>Skin</b>   | : Adverse symptoms may include the following:<br>pain or irritation<br>redness<br>blistering may occur   |
| <b>Eyes</b>   | : Adverse symptoms may include the following:<br>pain<br>watering<br>redness   |
| <b>Medical conditions aggravated by over-exposure</b> | : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product. |

## 3. Composition/information on ingredients

| Name                | CAS number | %     |
|---------------------|------------|-------|
| calcium dihydroxide | 1305-62-0  | 30-60 |
| zinc oxide          | 1314-13-2  | 10-30 |
| Calcium oxide       | 1305-78-8  | 1-5   |

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.

## 4. First aid measures

|                                   |   |
|-----------------------------------|---|
| <b>Eye contact</b>                | : No special measures are required. In case of contact with eyes, rinse immediately with plenty of water. Get medical attention if symptoms occur.  |
| <b>Skin contact</b>               | : No special measures required. In case of contact, immediately flush skin with plenty of water. Get medical attention if symptoms occur.   |
| <b>Inhalation</b>                 | : No special measures required. If inhaled, remove to fresh air. Get medical attention if symptoms occur.   |
| <b>Ingestion</b>                  | : 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.  |
| <b>Protection of first-aiders</b> | : 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. |

### Antidote information

| Product/ingredient name       | Antidote information |
|-------------------------------|----------------------|
| No antidote information known |                      |

|                           |   |
|---------------------------|---|
| <b>Notes to physician</b> | : 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. |
|---------------------------|---|

## 5. Fire-fighting measures

**Flammability of the product** : No specific fire or explosion hazard.

### Extinguishing media

**Suitable** : Use an extinguishing agent suitable for the surrounding fire.

**Not suitable** : None known.

**Special exposure hazards** : 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.

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

**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.

## 6. Accidental release measures

**Personal precautions** : Low release. For professional use only. Handling of product in very small amounts or in situations where release is highly unlikely

**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 for 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.

## 7. Handling and storage

**Handling** : 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.

**Storage** : Store between the following temperatures: 20 to 25°C (68 to 77°F). Store in accordance with local regulations. 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. 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.

## 8. Exposure controls/personal protection

## 8. Exposure controls/personal protection

| <u>Occupational exposure limits</u> |                 | TWA (8 hours) |                   |       | STEL (15 mins) |                   |       | Ceiling |                   |       | Notations |
|-------------------------------------|-----------------|---------------|-------------------|-------|----------------|-------------------|-------|---------|-------------------|-------|-----------|
| Ingredient                          | List name       | ppm           | mg/m <sup>3</sup> | Other | ppm            | mg/m <sup>3</sup> | Other | ppm     | mg/m <sup>3</sup> | Other |           |
| calcium dihydroxide                 | US ACGIH 6/2013 | -             | 5                 | -     | -              | -                 | -     | -       | -                 | -     | [3]       |
|                                     | AB 4/2009       | -             | 5                 | -     | -              | -                 | -     | -       | -                 | -     |           |
|                                     | BC 7/2013       | -             | 5                 | -     | -              | -                 | -     | -       | -                 | -     |           |
|                                     | ON 1/2013       | -             | 5                 | -     | -              | -                 | -     | -       | -                 | -     |           |
|                                     | QC 12/2012      | -             | 5                 | -     | -              | -                 | -     | -       | -                 | -     |           |
| zinc oxide                          | US ACGIH 4/2014 | -             | 2                 | -     | -              | 10                | -     | -       | -                 | -     | [a]       |
|                                     | AB 4/2009       | -             | 2                 | -     | -              | 10                | -     | -       | -                 | -     | [b]       |
|                                     | BC 7/2013       | -             | 2                 | -     | -              | 10                | -     | -       | -                 | -     | [b]       |
|                                     | ON 1/2013       | -             | 2                 | -     | -              | 10                | -     | -       | -                 | -     | [a]       |
|                                     | QC 1/2014       | -             | 5                 | -     | -              | 10                | -     | -       | -                 | -     | [c]       |
| Calcium oxide                       | US ACGIH 6/2013 | -             | 2                 | -     | -              | -                 | -     | -       | -                 | -     |           |
|                                     | AB 4/2009       | -             | 2                 | -     | -              | -                 | -     | -       | -                 | -     |           |
|                                     | BC 7/2013       | -             | 2                 | -     | -              | -                 | -     | -       | -                 | -     |           |
|                                     | ON 1/2013       | -             | 2                 | -     | -              | -                 | -     | -       | -                 | -     |           |
|                                     | QC 12/2012      | -             | 2                 | -     | -              | -                 | -     | -       | -                 | -     |           |

[3]Skin sensitization

Form: [a]Respirable fraction [b]Respirable [c]fume

### Consult local authorities for acceptable exposure limits.

**Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

**Engineering measures** : No special measures are required for small quantities under normal and intended conditions of product use.

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

### Personal protection

**Respiratory** : No special measures are required for small quantities under normal and intended conditions of product use.

**Hands** : 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.

**Eyes** : 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. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

**Skin** : 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.

## 9. Physical and chemical properties

|                            |   |
|----------------------------|---|
| Physical state             | : Solid. [Paste. Viscous. semi-solid.]                            |
| Flash point                | : Closed cup: Not applicable.                                     |
| Auto-ignition temperature  | : Not available.  |
| Flammable limits           | : Not applicable  |
| Color                      | : Off-white.  |
| Odor                       | : Odorless.   |
| pH                         | : Not available.  |
| Boiling/condensation point | : Not available.  |
| Melting/freezing point     | : Not available.  |
| Relative density           | : 2 [Water = 1]   |
| Density                    | : Not available.  |
| Vapor pressure             | : Not available.  |
| Vapor density              | : Not available.  |
| Odor threshold             | : Not available.  |
| Evaporation rate           | : Not available.  |
| Viscosity                  | : Not available.  |
| Solubility                 | : Insoluble in the following materials: cold water and hot water. |
| LogK <sub>ow</sub>         | : Not available.  |

## 10. Stability and reactivity

|                                    |   |
|------------------------------------|---|
| Chemical stability                 | : The product is stable.  |
| Conditions to avoid                | : Protect from moisture.  |
| Incompatible materials             | : Reactive or incompatible with the following materials: acids.   |
| Hazardous decomposition products   | : Under normal conditions of storage and use, hazardous decomposition products should not be produced.  |
| Possibility of hazardous reactions | : Under normal conditions of storage and use, hazardous reactions will not occur.<br>Under normal conditions of storage and use, hazardous polymerization will not occur. |

## 11. Toxicological information

### Acute toxicity

| Product/ingredient name | Result    | Species | Dose       | Exposure |
|-------------------------|-----------|---------|------------|----------|
| calcium dihydroxide     | LD50 Oral | Rat     | 7340 mg/kg | -        |

**Conclusion/Summary** : Based on the criteria of the protocol, this product is considered cytotoxic per USP 23.

### Chronic toxicity

Not available.

### Irritation/Corrosion

| Product/ingredient name           | Result                 | Species | Score | Exposure                | Observation |
|-----------------------------------|------------------------|---------|-------|-------------------------|-------------|
| calcium dihydroxide<br>zinc oxide | Eyes - Severe irritant | Rabbit  | -     | 10 milligrams           | -           |
|                                   | Eyes - Mild irritant   | Rabbit  | -     | 24 hours 500 milligrams | -           |
|                                   | Skin - Mild irritant   | Rabbit  | -     | 24 hours 500 milligrams | -           |

## 11. Toxicological information

### Sensitizer

Not available.

**Conclusion/Summary** : Not available.  
**Skin** : Kligman score: Grade I (weak sensitizer)

### Carcinogenicity

#### Classification

Not available.

### Mutagenicity

Not available.

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

### Teratogenicity

Not available.

### Reproductive toxicity

Not available.

## 12. Ecological information

**Ecotoxicity** : This material is very toxic to aquatic life. This material is toxic to aquatic life with long lasting effects.

### Aquatic ecotoxicity

| Product/ingredient name | Result                              | Species  | Exposure |
|-------------------------|-------------------------------------|--|----------|
| calcium dihydroxide     | Acute LC50 33884.4 µg/l Fresh water | Fish - Clarias gariepinus - Fingerling                                   | 96 hours |
| zinc oxide              | Acute EC50 0.042 mg/l Fresh water   | Algae - Pseudokirchneriella subcapitata - Exponential growth phase       | 72 hours |
|                         | Acute LC50 98 µg/l Fresh water      | Daphnia - Daphnia magna - Neonate  | 48 hours |
|                         | Acute LC50 1.1 ppm Fresh water      | Fish - Oncorhynchus mykiss   | 96 hours |
|                         | Chronic NOEC 0.017 mg/l Fresh water | Algae - Pseudokirchneriella subcapitata - Exponential growth phase       | 72 hours |
| Calcium oxide           | Chronic NOEC 100 mg/l Fresh water   | Fish - Oreochromis niloticus - Juvenile (Fledgling, Hatchling, Weanling) | 46 days  |

### Persistence/degradability

Not available.

**Partition coefficient: n-octanol/water** : Not available.  
**Bioconcentration factor** : Not available.  
**Mobility** : Not available.  
**Toxicity of the products of biodegradation** : Not available.  
**Other adverse effects** : No known significant effects or critical hazards.

## 13. Disposal considerations

**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.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

## 14. Transport information

| Regulatory information    | UN number | Proper shipping name  | Classes | PG* | Label | Additional information   |
|---------------------------|-----------|---|---------|-----|-------|--|
| <b>TDG Classification</b> | UN3077    | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (zinc oxide).<br>Marine pollutant (zinc oxide) | 9       | III | <br>  | <p>The product is not regulated as a dangerous good when transported by road or rail.</p> <p><u>Explosive Limit and Limited Quantity Index</u><br/>5</p> <p><u>Special provisions</u><br/>16</p>   |
| <b>IMDG Class</b>         | UN3077    | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (zinc oxide).<br>Marine pollutant (zinc oxide) | 9       | III | <br>  | <p>The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.</p> <p><u>Emergency schedules (EmS)</u><br/>F-A, S-F</p> <p><u>Special provisions</u><br/>274, 335, 966, 967</p>  |
| <b>IATA-DGR Class</b>     | UN3077    | Environmentally hazardous substance, solid, n.o.s. (zinc oxide)                                   | 9       | III | <br>  | <p>The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.</p> <p><u>Passenger and Cargo Aircraft</u> Quantity limitation: 400 kg<br/> Packaging instructions: 956<br/> <u>Cargo Aircraft Only</u> Quantity limitation: 400 kg<br/> Packaging instructions: 956<br/> <u>Limited Quantities - Passenger Aircraft</u> Quantity limitation: 30 kg<br/> Packaging instructions: Y956</p> <p><u>Special provisions</u><br/>A97, A158, A179</p> |

PG\* : Packing group

## 15. Regulatory information

**United States inventory (TSCA 8b)** : All components are listed or exempted.

**WHMIS (Canada)** : Class E: Corrosive material

### Canadian lists

**Canadian NPRI** : The following components are listed: Zinc (and its compounds)

**CEPA Toxic substances** : None of the components are listed.

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

**This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.**

### 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)**: Not determined.

**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

## 16. Other information

**Label requirements** : CAUSES RESPIRATORY TRACT, DIGESTIVE TRACT, EYE AND SKIN BURNS. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

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

|                  |   |   |
|------------------|---|---|
| Health           | * | 3 |
| Flammability     |   | 0 |
| Physical hazards |   | 0 |
|                  |   |   |

**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 MSDSs 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.

**Date of issue** : 01/07/2015.

**Date of previous issue** : No previous validation.



## 16. Other information

Version : 1

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.

# Kerr™ Material Safety Data Sheet

## LIFE CATALYST

### 1. Product and company identification

**Product name** : LIFE CATALYST  
**Material uses** : Dental cavity liner and pulp capping agent.  
**Manufacturer** : **Kerr Corporation**  
1717 West Collins Avenue  
Orange, CA 92867-5422  
Telephone no.: 1-800-KERR-123  
**Prepared by** : IHS  
**In case of emergency** : CHEMTREC® (24 hours) U.S. : 1-800-424-9300 International: +1-703-527-3887

### 2. Hazards identification

**Physical state** : Solid. [Paste. Viscous. semi-solid.]  
**Color** : Beige. Off-white. Pink. [Slight]  
**Odor** : Characteristic.  
**Emergency overview**  
**Signal word** : WARNING!  
**Hazard statements** : CAUSES EYE IRRITATION. MAY BE HARMFUL IF SWALLOWED. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.  
**Precautions** : Health effects are based on the uncured material. Do not ingest. Do not get in eyes. Avoid contact with skin and clothing. Wash thoroughly after handling.  
**Routes of entry** : Dermal contact. Eye contact. Inhalation. Ingestion.

#### Potential acute health effects

**Inhalation** : No known significant effects or critical hazards.  
**Ingestion** : Harmful if swallowed.  
**Skin** : No known significant effects or critical hazards.  
**Eyes** : Severely irritating to eyes. Risk of serious damage to eyes.

#### Potential chronic health effects

**Chronic effects** : Contains material that may cause target organ damage, based on animal data.  
**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.  
**Target organs** : Contains material which may cause damage to the following organs: kidneys, lungs, mucous membranes, upper respiratory tract, skin, eyes.

#### Over-exposure signs/symptoms

**Inhalation** : No specific data.  
**Ingestion** : No specific data.  
**Skin** : No specific data.

## 2. Hazards identification

- Eyes** : Adverse symptoms may include the following:  
 pain or irritation  
 watering  
 redness
- Medical conditions aggravated by over-exposure** : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

## 3. Composition/information on ingredients

| Name                         | CAS number | %     |
|------------------------------|------------|-------|
| methyl salicylate            | 119-36-8   | 30-60 |
| barium sulfate               | 7727-43-7  | 30-60 |
| Titanium dioxide             | 13463-67-7 | 5-10  |
| 2,2-dimethylpropane-1,3-diol | 126-30-7   | 5-10  |

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.

## 4. 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.
- Skin contact** : No special measures required. In case of contact, immediately flush skin 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.
- 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.
- 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. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

### Antidote information

| Product/ingredient name       | Antidote information |
|-------------------------------|----------------------|
| No antidote information known |                      |

- Notes to physician** : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

## 5. Fire-fighting measures

- Flammability of the product** : No specific fire or explosion hazard.

### Extinguishing media

- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : 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.

## 5. Fire-fighting measures

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

## 6. Accidental release measures

- Personal precautions** : Low release. For professional use only. Handling of product in very small amounts or in situations where release is highly unlikely
- 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 for 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.

## 7. Handling and storage

- Handling** : 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.
- Storage** : Store in accordance with local regulations. 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. 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.

## 8. Exposure controls/personal protection

| <u>Occupational exposure limits</u> |                 | TWA (8 hours) |                   |       | STEL (15 mins) |                   |       | Ceiling |                   |       | Notations                       |
|-------------------------------------|-----------------|---------------|-------------------|-------|----------------|-------------------|-------|---------|-------------------|-------|---------------------------------|
| Ingredient                          | List name       | ppm           | mg/m <sup>3</sup> | Other | ppm            | mg/m <sup>3</sup> | Other | ppm     | mg/m <sup>3</sup> | Other |                                 |
| barium sulfate                      | US ACGIH 6/2013 | -             | 10                | -     | -              | -                 | -     | -       | -                 | -     | [a]<br>[b]<br>[c]<br>[d]<br>[e] |
|                                     | AB 4/2009       | -             | 10                | -     | -              | -                 | -     | -       | -                 | -     |                                 |
|                                     | BC 7/2013       | -             | 3                 | -     | -              | -                 | -     | -       | -                 | -     |                                 |
|                                     | ON 1/2013       | -             | 10                | -     | -              | -                 | -     | -       | -                 | -     |                                 |
|                                     | QC 12/2012      | -             | 5                 | -     | -              | -                 | -     | -       | -                 | -     |                                 |
| Titanium dioxide                    | US ACGIH 6/2013 | -             | 10                | -     | -              | -                 | -     | -       | -                 | -     | [a]<br>[b]<br>[c]<br>[d]<br>[e] |
|                                     | AB 4/2009       | -             | 10                | -     | -              | -                 | -     | -       | -                 | -     |                                 |
|                                     | BC 7/2013       | -             | 3                 | -     | -              | -                 | -     | -       | -                 | -     |                                 |
|                                     | ON 1/2013       | -             | 10                | -     | -              | -                 | -     | -       | -                 | -     |                                 |
|                                     | QC 12/2012      | -             | 10                | -     | -              | -                 | -     | -       | -                 | -     |                                 |

**Form:** [a]Respirable dust [b]Total dust [c]total dust [d]Respirable dust. [e]Total dust.

**Consult local authorities for acceptable exposure limits.**

## 8. Exposure controls/personal protection

|  |  |
|--|--|
| <b>Recommended monitoring procedures</b> | : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.   |
| <b>Engineering measures</b>              | : No special measures are required for small quantities under normal and intended conditions of product use.   |
| <b>Hygiene measures</b>                  | : No special measures are required for small quantities under normal and intended conditions of product use.   |
| <b><u>Personal protection</u></b>        |  |
| <b>Respiratory</b>                       | : No special measures are required for small quantities under normal and intended conditions of product use.   |
| <b>Hands</b>                             | : 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. |
| <b>Eyes</b>                              | : 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. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.  |
| <b>Skin</b>                              | : No special measures are required for small quantities under normal and intended conditions of product use.   |
| <b>Environmental exposure controls</b>   | : No special measures are required for small quantities under normal and intended conditions of product use.   |

## 9. Physical and chemical properties

|                                   |   |
|-----------------------------------|---|
| <b>Physical state</b>             | : Solid. [Paste. Viscous. semi-solid.]                            |
| <b>Flash point</b>                | : Not applicable.   |
| <b>Auto-ignition temperature</b>  | : Not available.  |
| <b>Flammable limits</b>           | : Not available.  |
| <b>Color</b>                      | : Beige. Off-white. Pink. [Slight]                                |
| <b>Odor</b>                       | : Characteristic.   |
| <b>pH</b>                         | : Not available.  |
| <b>Boiling/condensation point</b> | : Not available.  |
| <b>Melting/freezing point</b>     | : Not available.  |
| <b>Relative density</b>           | : 2 [Water = 1]   |
| <b>Density</b>                    | : Not available.  |
| <b>Vapor pressure</b>             | : Not available.  |
| <b>Vapor density</b>              | : Not available.  |
| <b>Odor threshold</b>             | : Not available.  |
| <b>Evaporation rate</b>           | : Not available.  |
| <b>Viscosity</b>                  | : Not available.  |
| <b>Solubility</b>                 | : Insoluble in the following materials: cold water and hot water. |

## 9. Physical and chemical properties

LogK<sub>ow</sub> : Not available.

## 10. Stability and reactivity

**Chemical stability** : The product is stable.

**Conditions to avoid** : No specific data.

**Incompatible materials** : Reactive or incompatible with the following materials: Strong oxidizing materials.

**Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

**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.

## 11. Toxicological information

### Acute toxicity

| Product/ingredient name      | Result    | Species | Dose       | Exposure |
|------------------------------|-----------|---------|------------|----------|
| methyl salicylate            | LD50 Oral | Rat     | 887 mg/kg  | -        |
| 2,2-dimethylpropane-1,3-diol | LD50 Oral | Rat     | 3200 mg/kg | -        |

**Conclusion/Summary** : Based on the criteria of the protocol, this product is considered cytotoxic per USP 23.

### Chronic toxicity

Not available.

### Irritation/Corrosion

| Product/ingredient name | Result               | Species | Score | Exposure                | Observation |
|-------------------------|----------------------|---------|-------|-------------------------|-------------|
| methyl salicylate       | Eyes - Mild irritant | Rabbit  | -     | 24 hours 500 milligrams | -           |

### Sensitizer

Not available.

**Conclusion/Summary** : Not available.

**Skin** : Kligman score: Grade I (weak sensitizer)

### Carcinogenicity

#### Classification

| Product/ingredient name | ACGIH | IARC | EPA | NIOSH | NTP | OSHA |
|-------------------------|-------|------|-----|-------|-----|------|
| barium sulfate          | A4    | -    | -   | -     | -   | -    |
| Titanium dioxide        | A4    | 2B   | -   | +     | -   | -    |

### Mutagenicity

Not available.

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

### Teratogenicity

Not available.

### Reproductive toxicity

Not available.

## 12. Ecological information

**Ecotoxicity** : No known significant effects or critical hazards.

### Aquatic ecotoxicity

| Product/ingredient name | Result                                | Species   | Exposure |
|-------------------------|---------------------------------------|---|----------|
| Titanium dioxide        | Acute EC50 5.83 mg/l Fresh water      | Algae - Pseudokirchneriella subcapitata - Exponential growth phase  | 72 hours |
|                         | Acute LC50 3 mg/l Fresh water         | Crustaceans - Ceriodaphnia dubia - Neonate                          | 48 hours |
|                         | Acute LC50 5.5 ppm Fresh water        | Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling) | 48 hours |
|                         | Acute LC50 1000 mg/l Fresh water      | Fish - Pimephales promelas  | 96 hours |
|                         | Acute LC50 >1000000 µg/l Marine water | Fish - Fundulus heteroclitus  | 96 hours |
|                         | Chronic NOEC 0.984 mg/l Fresh water   | Algae - Pseudokirchneriella subcapitata - Exponential growth phase  | 72 hours |

### Persistence/degradability

Not available.

**Partition coefficient: n-octanol/water** : Not available.

**Bioconcentration factor** : Not available.

**Mobility** : Not available.

**Toxicity of the products of biodegradation** : Not available.

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

## 13. Disposal considerations

**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.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

## 14. Transport information

**TDG/IMDG/IATA** : Not regulated.

## 15. Regulatory information

**United States inventory (TSCA 8b)** : All components are listed or exempted.

**WHMIS (Canada)** : Class D-2B: Material causing other toxic effects (Toxic).

### Canadian lists

**Canadian NPRI** : None of the components are listed.

**CEPA Toxic substances** : None of the components are listed.

## 15. Regulatory information

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

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

### International regulations

**International lists** :

- Australia inventory (AICS)**: All components are listed or exempted.
- China inventory (IECSC)**: All components are listed or exempted.
- Japan inventory**: Not determined.
- 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)**: Not determined.

**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

## 16. Other information

**Label requirements** : CAUSES EYE IRRITATION. MAY BE HARMFUL IF SWALLOWED. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

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

|                  |   |   |
|------------------|---|---|
| Health           | * | 2 |
| Flammability     |   | 0 |
| Physical hazards |   | 0 |
|                  |   |   |

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 MSDSs 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.

**Date of issue** : 01/06/2015.

**Date of previous issue** : No previous validation.

**Version** : 1

Indicates information that has changed from previously issued version.

Notice to reader



## 16. Other information

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.