

## **SAFETY DATA SHEETS**

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

074383709

**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).**

074383667

# KERR

## Material Safety Data Sheet

in accordance with Community Regulation 2006/1907/EC (R.E.A.Ch.)

Revision Date: 19<sup>th</sup> September 2008

### SECTION 1

#### Product & Company identification

1.1 Product name

**TEMP BOND BASE (tubes and dual syringes)**

1.2 Uses/Application:

Dental temporary cement.

1.3 Company (Name, address and info phone number)

**KERR ITALIA S.r.l.**

Via Passanti, 332

84018 Scafati (SA) - Italy

Free Phone: 00-800-41-050-505

1.4 Emergency phone (according to communitarian directive 99/45/EC, article 17)

+39.081.8508.325 (08.00-17.00, European time, GMT+1)

E-mail address: [safety@kerrhawe.com](mailto:safety@kerrhawe.com)

### SECTION 2

#### Hazard identification

2.1 Hazard classification (according to communitarian directives 67/548/EEC & 99/45/EC)

Dangerous for environment.

2.2 Other hazard

None.

### SECTION 3

#### Composition/Information on Ingredients

(according to communitarian directives 67/548/EEC, 99/45/EC & 2001/58/EC)

3.1 Hazardous ingredients

HAZARDOUS INGREDIENTS	%	HAZARD SYMBOLS	RISK PHRASES	CAS N.	EINECS N.
Zinc Oxide (ZnO)	85-90	N	50/53	1314-13-2	215-222-5

3.2 Other non-hazardous ingredients

None.

**SECTION 4****First aid measures**

- 4.1 Treatment for eye contact: Flush with water for at least 15 minutes.
- 4.2 Treatment for skin contact: Wash with soap and water.
- 4.3 Treatment for inhalation (breathing): None.
- 4.4 Treatment for ingestion (swallowing): Consult a physician.

**SECTION 5****Fire-fighting Measures**

- 5.1 Suitable extinguishing media: Carbon dioxide, foam, dry chemical.
- 5.2 Forbidden extinguishing media: Not applicable.
- 5.3 Special fire fighting measures: Not applicable.
- 5.4 Unusual fire and explosion hazards: Not applicable.
- 5.5 Special protection equipment: Not applicable.

**SECTION 6****Accidental Release Measures**

- 6.1 Personal Precautions: Adopt precautions listed in following sections (VII and VIII).
- 6.2 Environmental Precautions: Do not allow product reaching rivers or sewers and avoid soil contamination. Avoid dust formation which could be spread by wind.
- 6.3 Reclaiming Methods: Absorb spill with paper towels and transfer into suitable containers.

**SECTION 7****Handling and Storage** (according to article 5 of communitarian directive 98/24/EC)

- 7.1 Handling Precautions: Adopt precautions listed in following sections (VII and VIII).
- 7.2 Precautions in case of Fire and Explosion: Not applicable.
- 7.3 Storage Conditions: Store at ambient temperature.
- 7.4 Suggested container(s): The original containers provided by manufacturer.
- 7.5 Indication for Combined Storage: Not available.
- 7.6 Environmental precautions: Store in a dry place far from sewers and water.
- 7.7 Other Precautions: Use according to directions and good personal hygiene and safety practices. Do not invert caps on tubes as this will cause hardening of material in the tubes (Refers to tubed variety only).

<b>SECTION 8</b>	
<b>Exposure controls/personal protection</b>	
<b>8.1 Exposure Limits:</b>	<b>ZnO:</b> TWA: 0,6 ppm (2 mg/m <sup>3</sup> ); TLV: 3 ppm (10 mg/m <sup>3</sup> ); <b>Corn Starch</b> TWA: 10 mg/m <sup>3</sup>
<b>8.2 Exposure control measures</b>	
<b>8.2.1 Precautionary Measures:</b> (according to communitarian directives 89/686/EEC & article 4 of 98/24/EC)	
<b>Ventilation:</b>	<u>Local Exhaust Ventilation:</u> Not necessary. <u>Special Ventilation:</u> None. <u>Mechanical (General) Ventilation:</u> Nonc. <u>Other Ventilation:</u> None.
<b>Respiratory Protection:</b>	None required.
<b>Hands Protection:</b>	Use of disposable vinyl gloves is optional.
<b>Eyes Protection:</b>	Safety glasses or goggles optional.
<b>Skin Protection:</b>	Handle in accordance with good personal hygiene and safety practices.
<b>Other Protective Equipments:</b>	Not applicable (use of a lab coat is optional).
<i>Measures listed in this paragraph are to be considered as indications and NOT prescriptions (89/656/EEC)</i>	
<b>8.2.2 Environment exposure control measures</b>	
Not Applicable.	

<b>SECTION 9</b>	
<b>Physical and Chemical Properties</b>	
<b>9.1 General information</b>	
<u>Appearance:</u> White paste.	<u>Odour:</u> Odourless.
<b>9.2 Information related to health, safety and environment</b>	
<u>pH:</u> Not applicable (N/A)	<u>Relative density:</u> Not available
<u>Boiling point:</u> Not applicable	<u>Specific gravity:</u> > 1 g/ml
<u>Flash point:</u> Not applicable	<u>Solubility:</u> Insoluble
<u>Flammability:</u> Not flammable.	<u>Partition coefficient n-octanol/water:</u> N/A
<u>Lower Explosivity Limit (L.E.L.):</u> N/A	<u>Viscosity:</u> Not applicable
<u>Upper Explosivity Limit (U.E.L.):</u> N/A	<u>Vapor density (air = 1):</u> N/A
<u>Oxidizing properties:</u> None	<u>Evaporation rate (n-butane = 1):</u> Not applicable
<u>Vapour pressure:</u> > 1	<u>Melting point:</u> Not applicable
<b>9.3 Other information (according to communitarian directive 94/9/EC):</b>	
<u>Miscibility:</u> N/D.	<u>Conducibility:</u> N/D
<u>Solubility in Lipids:</u> Not available	<u>Gases Group:</u> N/A

**SECTION 10****Stability and Reactivity**Stability: Stable.10.1 Conditions to avoid: Avoid contact with strong acids.10.2 Materials to avoid (incompatibility): Strong acids (Nitric acid).10.3 Hazardous decomposition products: When in contact with Nitric acid, may generate Nitrous oxide.Other precautions:Hazardous Polymerization Products: Will not occurSafety significance in case of change in physical appearance: None knownStabilizers: Product is not required to be stabilized.**SECTION 11****Toxicological Information**CMR effects (Carcinogenicity, Mutagenicity and toxicity for reproduction):

None.

Effects and hazards of eye contact: May cause mild irritation.Effects and hazards of skin contact: Prolonged exposure may cause a mild irritation.Effects and hazards of Inhalation (Breathing): It is an unlikely event.Effects and hazards of Ingestion (Swallowing): May cause gastric pain.Effects for prolonged Exposure: Not determined.Toxic-kinetic effects: Unknown.Effects on metabolism: Unknown.Toxicological data for ingredients:

<b>ZnO</b>		
(Acute toxicity):	LD <sub>50</sub> (oral mouse)	7950 mg/Kg
	LD <sub>50</sub> (skin rat)	> 2000 mg/Kg
	LD <sub>L0</sub> (oral human)	500 mg/Kg
	LC <sub>50</sub> (inhalation rat/4hrs)	> 5700 mg/m <sup>3</sup> (4 hrs)

**SECTION 12****Ecological Information**

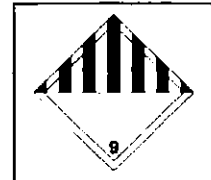
Refer to data regarding Zinc Oxide.

12.1 Eco-toxicity: Not available12.2 Mobility: Not available12.3 Persistence and degradability: Not available12.4 Bioaccumulative potential: Not available12.5 Results of PBT (Persistent Bio-Toxicity) assessment: Not available12.6 Other adverse effects: Not availableAquatic toxicity data for ingredients:

<b>ZnO</b>		
(Acute toxicity):	EC <sub>50</sub> (Daphnia magna)	> 1000 mg/l (48 hrs)
	LC <sub>50</sub> (Oncorhynchus mykiss)	1,1 mg/l (96 hrs)
	LC <sub>50</sub> (Lepomis macrochirus)	> 320 mg/l (96 hrs)
	LC <sub>50</sub> (Pimephales promelas)	2246 mg/l (96 hrs)
	EC <sub>50</sub> (Selenastrum capricornutum)	0,17 mg/l (72 hr; Lisecc 1997)

**SECTION 13****Disposal considerations**

Dispose of in accordance of local regulations.

**SECTION 14****Transport information**14.1 Sea transportation (IMDG)UN number: 3077    Class: 9    Packing group: III    EMS-No: F-A, S-FStowage/segregation: Category A;    Limited Quantity: 5KgProper shipping name: Environmentally hazardous substance, solid, n.o.s.14.2 Air transportation (ICAO/IATA)UN number: 3077;    Class: 9;    Packing group: III;    Label: 9Maximum quantities: No limits (both for Passenger Aircraft and Cargo Aircraft only)Limited Quantity: 30Kg G;    Proper shipping name: Environmentally hazardous substance, solid, n.o.s.14.3 Transportation by Road/Railway (RID/ADR)UN number: 3077;    Class: 9;    Packing group: III (12°C);    Hazard identification n°: 90    Label: 9Proper shipping name: Environmentally hazardous substance, solid, n.o.s.Limited Quantity: LQ27 (6Kg/30Kg for combined, 6Kg/20Kg for bandaged trays).

**SECTION 15** (Classification according to communitarian directives 67/548/EEC & 99/45/EC)**Regulatory information**

Hazard labelling not required.

This product is an exempted medical device (directive 1999/45/EC, article 1, paragraph 5g).

**SECTION 16****Other information**16.1 Risk phrases of all ingredients

50/53 Very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.

16.1.1 Safety phrases of all ingredients

60 This material and its container must be disposed of as hazardous waste

61 Avoid release to the environment. Refer to special instructions / safety data sheets

16.2 Sources of key data used to compile the Safety Data Sheet:

European Chemicals Bureau (ECB – [www.ecb.jrc.it](http://www.ecb.jrc.it))

European chemical Substances Information System (ESIS - [www.ecb.jrc.it/esis](http://www.ecb.jrc.it/esis))

A.C.G.I.H. ([www.acgih.org](http://www.acgih.org))

N.I.O.S.H. ([www.cdc.gov/niosh/](http://www.cdc.gov/niosh/))

O.S.H.A. ([www.osha.gov/](http://www.osha.gov/))

U.E. ([www.europa.eu/index\\_it.htm](http://www.europa.eu/index_it.htm))

I.A.R.C. ([www.iarc.fr/](http://www.iarc.fr/))

N.T.P. ([www.ntp.niehs.nih.gov](http://www.ntp.niehs.nih.gov))

European Community Directives:

67/548/EEC:	Classification, packaging and labelling of dangerous substances.
99/45/EC:	Directive concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations.
2001/58/EC:	Second amendment of directive 91/155/EEC for the definition of a detailed arrangement of specific information relating to dangerous preparations (art. 14 of 99/45/EC) and substances (art. 27 of 67/548/EEC).
89/656/EEC:	Directive on the minimum health and safety requirements for the use by workers of personal protective equipment at the workplace (third individual directive within the meaning of Article 16 (1) of Directive 89/391/EEC).
89/686/EEC:	Approximation of the laws of the Member States relating to personal protective equipment.
94/9/EC:	Approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres
98/24/EC:	Protection of the health and safety of workers from the risks related to chemical agents at work.

Document modification history: First version in compliance of Community Regulation 2006/1907/EC (R.E.A.Ch.)

**CAUTION: PRODUCT FOR PROFESSIONAL USE**

The information on this Safety Sheet is based on presently available data and to our best knowledge for the correct handling of the product under normal conditions. Any use of this product in any way not indicated on this Sheet or the use of this product together with any other process/procedure will be exclusively under the user's responsibility. This document does not constitute explicit or implicit warranty of product quality or fitness for a particular purpose.



## Section 1. Identification

**GHS product identifier** : Temp-Bond Base  
**Other means of identification** : Not available.  
**Product type** : Paste.

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

**Product use** : Dental product: Temporary cement  
**Area of application** : Professional applications.

**Manufacturer** : **Kerr Corporation**  
 1717 West Collins Avenue  
 Orange, CA 92867-5422  
 Telephone no.: 1-800-KERR-123

**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** : EYE IRRITATION - Category 2B

Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 89.3%

GHS label elements

**Signal word** : Warning

**Hazard statements** : Causes eye irritation.

Precautionary statements

**Prevention** : Wear eye or face protection. Wash hands thoroughly after handling.

**Response** : 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** : Not applicable.

**Disposal** : Not applicable.

**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

**Substance/mixture** : Mixture  
**Other means of identification** : Not available.

### CAS number/other identifiers

**CAS number** : Not applicable.  
**Product code** : Not available.

Ingredient name	Other names	%	CAS number
zinc oxide	zinc oxide	60-100	1314-13-2
White mineral oil (petroleum)	White mineral oil (petroleum)	5-10	8042-47-5

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

#### Potential acute health effects

**Eye contact** : Causes eye irritation.

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

**Skin contact** : Defatting to the skin. May cause skin dryness and irritation.

**Ingestion** : May be irritating to mouth, throat and stomach.

#### Over-exposure signs/symptoms

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

**Inhalation** : No specific data.

**Skin contact** : Adverse symptoms may include the following:  
irritation  
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.

## Section 4. First aid measures

- 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. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : Do not use water jet.

**Specific hazards arising from the chemical** : No specific fire or explosion hazard.

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

**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.

**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.

## Section 7. Handling and storage

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

**Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in 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.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
zinc oxide	<p><b>NIOSH REL (United States, 10/2013).</b>            CEIL: 15 mg/m<sup>3</sup> Form: Dust            TWA: 5 mg/m<sup>3</sup> 10 hours. Form: Dust and fumes            STEL: 10 mg/m<sup>3</sup> 15 minutes. Form: Fume</p> <p><b>OSHA PEL 1989 (United States, 3/1989).</b>            TWA: 5 mg/m<sup>3</sup> 8 hours. Form: Fume            STEL: 10 mg/m<sup>3</sup> 15 minutes. Form: Fume            TWA: 5 mg/m<sup>3</sup> 8 hours. Form: Respirable fraction            TWA: 10 mg/m<sup>3</sup> 8 hours. Form: Total dust</p> <p><b>OSHA PEL (United States, 2/2013).</b>            TWA: 5 mg/m<sup>3</sup> 8 hours. Form: Fume            TWA: 5 mg/m<sup>3</sup> 8 hours. Form: Respirable fraction            TWA: 15 mg/m<sup>3</sup> 8 hours. Form: Total dust</p> <p><b>ACGIH TLV (United States, 4/2014).</b>            TWA: 2 mg/m<sup>3</sup> 8 hours. Form: Respirable fraction            STEL: 10 mg/m<sup>3</sup> 15 minutes. Form: Respirable fraction</p>
White mineral oil (petroleum)	<p><b>ACGIH TLV (United States, 4/2014).</b>            TWA: 5 mg/m<sup>3</sup> 8 hours. Form: Inhalable fraction</p> <p><b>NIOSH REL (United States, 10/2013).</b>            TWA: 5 mg/m<sup>3</sup> 10 hours. Form: Mist            STEL: 10 mg/m<sup>3</sup> 15 minutes. Form: Mist</p> <p><b>OSHA PEL (United States, 2/2013).</b>            TWA: 5 mg/m<sup>3</sup> 8 hours.</p>

**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.

## Section 8. Exposure controls/personal protection

- 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** : Solid. [Paste.]
- Color** : Off-white.
- Odor** : Odorless.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : Not available.
- Boiling point** : Not available.
- Flash point** : Not applicable.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Relative density** : >1 [Water = 1]
- Solubility** : Insoluble in the following materials: cold water and hot water.
- Solubility in water** : Not available.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- SADT** : Not available.
- Viscosity** : Not available.

## Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.  
Under normal conditions of storage and use, hazardous polymerization will not occur.
- Conditions to avoid** : Avoid excessive heat.
- Incompatible materials** : No specific data.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
White mineral oil (petroleum)	LD50 Oral	Rat	>5000 mg/kg	-

- Conclusion/Summary** : Based on the criteria of the protocol, this product is considered cytotoxic per USP 23. Based on analysis and test results, this product is considered as biocompatible per EN ISO 7405:2008 and EN ISO 10993-1:2009.

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
zinc oxide	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

#### Sensitization

Not available.

#### Conclusion/Summary

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

#### Mutagenicity

Not available.

#### Conclusion/Summary

- : No mutagenic effect.

#### Carcinogenicity

Not available.

#### Reproductive toxicity

Not available.

#### Teratogenicity

Not available.

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

Not available.

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

## Section 11. Toxicological information

Not available.

### Aspiration hazard

Name	Result
White mineral oil (petroleum)	ASPIRATION HAZARD - Category 1

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

### Potential acute health effects

**Eye contact** : Causes eye irritation.  
**Inhalation** : No known significant effects or critical hazards.  
**Skin contact** : Defatting to the skin. May cause skin dryness and irritation.  
**Ingestion** : May be irritating to mouth, throat and stomach.

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

**Eye contact** : Adverse symptoms may include the following:  
 irritation  
 watering  
 redness  
**Inhalation** : No specific data.  
**Skin contact** : Adverse symptoms may include the following:  
 irritation  
 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.  
**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

Not available.

## Section 11. Toxicological information

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
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

### Persistence and degradability

Not available.

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
zinc oxide	-	60960	high
White mineral oil (petroleum)	>6	-	high

### Mobility in soil

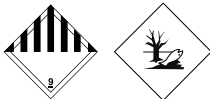
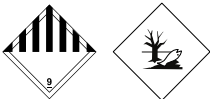
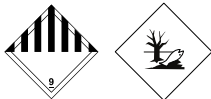
**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**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.

## Section 14. Transport information

	DOT Classification	IMDG	IATA
<b>UN number</b>	UN3077	UN3077	UN3077
<b>UN proper shipping name</b>	Environmentally hazardous substances, solid, n.o.s. (zinc oxide). Marine pollutant (zinc oxide)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (zinc oxide). Marine pollutant (zinc oxide)	Environmentally hazardous substance, solid, n.o.s. (zinc oxide)
<b>Transport hazard class(es)</b>	9 	9 	9 
<b>Packing group</b>	III	III	III



## Section 14. Transport information

<b>Environmental hazards</b>	Yes.	Yes.	Yes.
<b>Additional information</b>	<p>Non-bulk packages of this product are not regulated as hazardous materials unless transported by inland waterway. The marine pollutant mark is not required when transported on inland waterways in sizes of ≤5 L or ≤5 kg.</p> <p><b>Limited quantity</b> Yes.</p> <p><b>Special provisions</b> 8, 146, 335, A112, B54, B120, IB8, IP3, N20, T1, TP33</p>	<p>The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.</p> <p><b>Emergency schedules (EmS)</b> F-A, S-F</p> <p><b>Special provisions</b> 274, 335, 966, 967</p>	<p>The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.</p> <p><b>Passenger and Cargo Aircraft</b> Quantity limitation: 400 kg Packaging instructions: 956</p> <p><b>Cargo Aircraft Only</b>Quantity limitation: 400 kg Packaging instructions: 956</p> <p><b>Limited Quantities - Passenger Aircraft</b>Quantity limitation: 30 kg Packaging instructions: Y956</p> <p><b>Special provisions</b> A97, A158, A179</p>

**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** : **United States inventory (TSCA 8b):** All components are listed or exempted.  
**Clean Water Act (CWA) 307:** zinc oxide

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

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

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

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

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

### SARA 302/304

#### Composition/information on ingredients

No products were found.

**SARA 304 RQ** : Not applicable.

### SARA 311/312

**Classification** : Immediate (acute) health hazard

#### Composition/information on ingredients

## Section 15. Regulatory information

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
zinc oxide White mineral oil (petroleum)	60-100 5-10	No. No.	No. No.	No. No.	Yes. Yes.	No. No.

### SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	zinc oxide	1314-13-2	60-100
Supplier notification	zinc oxide	1314-13-2	60-100

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: ZINC OXIDE FUME
- New York** : None of the components are listed.
- New Jersey** : The following components are listed: ZINC OXIDE; MINERAL OIL (UNTREATED and MILDLY TREATED)
- Pennsylvania** : The following components are listed: ZINC OXIDE (ZNO)
- California Prop. 65**

None of the components are listed.

## Section 16. Other information

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

Health	*	1
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 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.)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

## Section 16. Other information

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

### History

**Date of issue/Date of revision** : 02/09/2015

**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
- MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- UN = United Nations

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

✔ 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.