

**1. Product and company identification**

<b>Product name</b>	: Optibond™ Solo Plus
<b>Material uses</b>	: Dental product
<b>Manufacturer</b>	: <b>Kerr Corporation</b> 1717 West Collins Avenue Orange, CA 92867-5422 Telephone no.: 1-800-KERR-123
<b>Prepared by</b>	: IHS
<b>In case of emergency</b>	: CHEMTREC® (24 hours) U.S. : 1-800-424-9300 International: +1-703-527-3887

**2. Hazards identification**

<b>Physical state</b>	: Liquid. [Paste.]
<b>Color</b>	: Yellow. [Light]
<b>Odor</b>	: Fruity.
<b>Emergency overview</b>	
<b>Signal word</b>	: DANGER!
<b>Hazard statements</b>	: FLAMMABLE LIQUID AND VAPOR. HARMFUL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
<b>Precautions</b>	: Health effects are based on the uncured material. Keep away from heat, sparks and flame. Do not breathe vapor or mist. 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. Keep container tightly closed.
<b>Routes of entry</b>	: Dermal contact. Eye contact. Inhalation. Ingestion.
<b>Potential acute health effects</b>	
<b>Inhalation</b>	: Toxic by inhalation. Irritating to respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
<b>Ingestion</b>	: Toxic if swallowed.
<b>Skin</b>	: Toxic in contact with skin. Irritating to skin. May cause sensitization by skin contact.
<b>Eyes</b>	: Severely irritating to eyes. Risk of serious damage to eyes.
<b>Potential chronic health effects</b>	
<b>Chronic effects</b>	: 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.
<b>Carcinogenicity</b>	: No known significant effects or critical hazards.
<b>Mutagenicity</b>	: No known significant effects or critical hazards.
<b>Teratogenicity</b>	: No known significant effects or critical hazards.
<b>Developmental effects</b>	: No known significant effects or critical hazards.

## 2. Hazards identification

- Fertility effects** : No known significant effects or critical hazards.
- Target organs** : Contains material which may cause damage to the following organs: blood, the reproductive system, liver, heart, upper respiratory tract, skin, eyes, bones, central nervous system (CNS), teeth.
- Over-exposure signs/symptoms**
- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing
- Ingestion** : No specific data.
- Skin** : Adverse symptoms may include the following:  
irritation  
redness  
dryness  
cracking
- Eyes** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Medical conditions aggravated by over-exposure** : Pre-existing skin disorders and disorders involving any other 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	%
ethanol	64-17-5	10-30
2-hydroxyethyl methacrylate	868-77-9	10-30
glass, oxide, chemicals	65997-17-3	5-10
2-hydroxy-1,3-propanediyl bismethacrylate	1830-78-0	1-5
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica	68909-20-6	1-5
alkali fluorosilicates(Na)	16893-85-9	0.1-1

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.

## 4. First aid measures

**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.

### Antidote information

Product/ingredient name	Antidote information
No antidote information known	

**Notes 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.

## 5. Fire-fighting measures

**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. Runoff to sewer may create fire or explosion hazard.

### Extinguishing media

**Suitable** : In case of fire, use water spray (fog), foam, dry chemical or CO<sub>2</sub>.

**Not suitable** : Do not use water jet.

**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. 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  
 carbon monoxide  
 nitrogen oxides  
 phosphorus 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 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.

## 8. Exposure controls/personal protection

<u>Occupational exposure limits</u>		TWA (8 hours)			STEL (15 mins)			Ceiling			
Ingredient	List name	ppm	mg/m <sup>3</sup>	Other	ppm	mg/m <sup>3</sup>	Other	ppm	mg/m <sup>3</sup>	Other	Notations
ethanol	US ACGIH 6/2013	-	-	-	1000	-	-	-	-	-	
	AB 4/2009	1000	1880	-	-	-	-	-	-	-	
	BC 7/2013	-	-	-	1000	-	-	-	-	-	
	ON 1/2013	-	-	-	1000	-	-	-	-	-	
	QC 12/2012	1000	1880	-	-	-	-	-	-	-	
alkali fluorosilicates(Na), as F	US ACGIH 6/2013	-	2.5	-	-	-	-	-	-	-	
	AB 4/2009	-	2.5	-	-	-	-	-	-	-	
	BC 7/2013	-	2.5	-	-	-	-	-	-	-	
	ON 1/2013	-	2.5	-	-	-	-	-	-	-	
	QC 12/2012	-	2.5	-	-	-	-	-	-	-	
glass, oxide, chemicals	US ACGIH	-	5	-	-	-	-	-	-	-	[a]
	US ACGIH	-	10	-	-	-	-	-	-	-	[b]
	AB 4/2009	-	5	1 f/cc	-	-	-	-	-	-	[c]
	-	-	5	-	-	-	-	-	-	-	[d]
	BC 7/2013	-	5	-	-	-	-	-	-	-	[e]
	-	-	-	1 f/cc	-	-	-	-	-	-	
	ON 1/2013	-	10	-	-	-	-	-	-	-	[f]
	-	-	5	-	-	-	-	-	-	-	[g]
	-	-	-	1 f/cc	-	-	-	-	-	-	[h]
	QC 12/2012	-	-	1 f/cc	-	-	-	-	-	-	[i]
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica	US ACGIH	-	10	-	-	-	-	-	-	-	[j]
	US ACGIH	-	10	-	-	-	-	-	-	-	[e]
	US ACGIH	-	3	-	-	-	-	-	-	-	[a]

**Form:** [a]Respirable [b]Total dust [c]Fibres [d]Fibres, total particulate [e]Inhalable [f]Fiber [g]Inhalable fraction: means that size fraction of the airborne particulate deposited anywhere in the respiratory tract and collected during air sampling with a particle size-selective device that, (a) meets the ACGIH particle size-selective sampling criteria for airborne particulate matter; and (b) has the cut point of 100 µm at 50 per cent collection efficiency. [h]Respirable fibres: length > 5µm; aspect ratio ≥3:1, as determined by the membrane filter method at 400-450 times magnification (4-mm objective), using phase-contrast illumination. [i]RESPIRABLE FIBRES (other than respirable asbestos fibres) : Objects, other than respirable asbestos fibres, longer than 5 µm, having a diameter of less than 3 µm and a ratio of length to diameter of more than 3 :1. [j]Total dust.

### 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.

## 8. Exposure controls/personal protection

<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>Personal protection</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>	: Liquid. [Paste.]
<b>Flash point</b>	: Closed cup: 18°C (64.4°F) [Ethanol]
<b>Auto-ignition temperature</b>	: Not available.
<b>Flammable limits</b>	: Not available.
<b>Color</b>	: Yellow. [Light]
<b>Odor</b>	: Fruity.
<b>pH</b>	: Not available.
<b>Boiling/condensation point</b>	: Not available.
<b>Melting/freezing point</b>	: Not available.
<b>Relative density</b>	: ~1.25
<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>	: Partially soluble in the following materials: cold water and hot water.
<b>LogK<sub>ow</sub></b>	: Not available.

## 10. Stability and reactivity

- Chemical stability** : The product is stable.
- Conditions to avoid** : Keep away from heat, sparks and flame.
- Incompatible materials** : Reactive or incompatible with the following materials: 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
ethanol	LC50 Inhalation Vapor	Rat	124700 mg/m <sup>3</sup>	4 hours
	LD50 Oral	Rat	7 g/kg	-
2-hydroxyethyl methacrylate	LD50 Oral	Rat	4230 mg/kg	-
alkali fluorosilicates(Na)	LD50 Oral	Rat	125 mg/kg	-

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

### Chronic toxicity

Not available.

### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
ethanol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	0.066666667 minutes 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	100 microliters	-
	Eyes - Severe irritant	Rabbit	-	500 milligrams	-
	Skin - Mild irritant	Rabbit	-	400 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
alkali fluorosilicates(Na)	Skin - Mild irritant	Rabbit	-	500 milligrams	-

### Sensitizer

Not available.

### Carcinogenicity

#### Classification

## 11. Toxicological information

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
ethanol	A3	1	-	-	-	-
glass, oxide, chemicals	A4	3	-	-	-	-
Silica, amorphous, fumed, cryst.-free	-	3	-	-	-	-
alkali fluorosilicates(Na)	A4	3	-	-	-	-

### Mutagenicity

Not available.

### 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
ethanol	Acute EC50 17.921 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 2000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 25500 µg/l Marine water	Crustaceans - Artemia franciscana - Larvae	48 hours
	Acute LC50 42000 µg/l Fresh water	Fish - Oncorhynchus mykiss	4 days
	Chronic NOEC 4.995 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Chronic NOEC 0.375 ul/L Fresh water	Fish - Gambusia holbrooki - Larvae	12 weeks
2-hydroxyethyl methacrylate	Acute LC50 227000 µg/l Fresh water	Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
alkali fluorosilicates(Na)	Acute LC50 49000 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours

### Persistence/degradability

Product/ingredient name	Test	Result	Dose	Inoculum
2-hydroxyethyl methacrylate	301C Ready Biodegradability - Modified MITI Test (I)	92 to 100 % - 14 days	-	-

**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>	UN1170	ETHANOL SOLUTION	3	II		<b>Explosive Limit and Limited Quantity Index</b> 1 <b>Passenger Carrying Road or Rail Index</b> 5
<b>IMDG Class</b>	UN1170	ETHANOL SOLUTION	3	II		<b>Emergency schedules (EmS)</b> F-E, S-D <b>Special provisions</b> 144
<b>IATA-DGR Class</b>	UN1170	Ethanol solution	3	II		<b>Passenger and Cargo Aircraft</b> Quantity limitation: 5 L Packaging instructions: 353 <b>Cargo Aircraft Only</b> Quantity limitation: 60 L Packaging instructions: 364 <b>Limited Quantities - Passenger Aircraft</b> Quantity limitation: 1 L Packaging instructions: Y341 <b>Special provisions</b> A3, A58, A180

PG\* : Packing group

## 15. Regulatory information

**United States inventory (TSCA 8b)** : Not determined.

**WHMIS (Canada)** : Class B-2: Flammable liquid  
Class D-1B: Material causing immediate and serious toxic effects (Toxic).  
Class D-2A: Material causing other toxic effects (Very toxic).  
Class D-2B: Material causing other toxic effects (Toxic).

### Canadian lists

**Canadian NPRI** : The following components are listed: Ethanol

**CEPA Toxic substances** : The following components are listed: Inorganic fluorides

**Canada inventory** : Not determined.



## 15. Regulatory information

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):** Not determined.
  - China inventory (IECSC):** Not determined.
  - Japan inventory:** Not determined.
  - Korea inventory:** Not determined.
  - Malaysia Inventory (EHS Register):** Not determined.
  - New Zealand Inventory of Chemicals (NZIoC):** Not determined.
  - Philippines inventory (PICCS):** Not determined.
  - 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** : FLAMMABLE LIQUID AND VAPOR. HARMFUL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

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

Health	*	2
Flammability		4
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** : 10/16/2014.  
**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.