

Printing date 03/13/2015

Reviewed on 04/01/2015

**1 Identification**

- **Product identifier**
- **Trade name:** CLEARFIL TRI-S BOND PLUS (CLEARFIL S<sup>3</sup> BOND PLUS)
- **Article number:** CA154
- **Application of the substance / the mixture** Dental bonding material
- **Details of the supplier of the safety data sheet**
- **Manufacturer:**  
Kuraray Noritake Dental Inc.  
1621 Sakazu, Kurashiki, Okayama 710-0801,  
Japan
- **Contact information:**  
Kuraray America, Inc.  
33 Maiden Lane, 6th Floor, New York,  
NY 10038 U.S.A.  
Tel: 800-879-1676  
Fax: 888-700-5200  
Website: www.kuraraydental.com

**2 Composition/information on ingredients**

- **Chemical characterization: Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.

· **Dangerous components:**

1565-94-2	bisphenol A diglycidylmethacrylate ⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319	25-50%
868-77-9	2-hydroxyethyl methacrylate ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317	10-25%
64-17-5	ethanol ⚠ Flam. Liq. 2, H225; ⚠ Carc. 1A, H350	10-25%

· **Other ingredients:**

10-Methacryloyloxydecyl dihydrogen phosphate  
Hydrophilic aliphatic dimethacrylate  
Hydrophobic aliphatic methacrylate  
Colloidal silica  
dl-Camphorquinone  
Initiators  
Accelerators  
Water

**3 Hazard(s) identification**

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 3 H226 Flammable liquid and vapour.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

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· **Label elements**· **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms** GHS02, GHS07· **Signal word** Warning· **Hazard-determining components of labeling:**

2-hydroxyethyl methacrylate

· **Hazard statements**

H226 Flammable liquid and vapour.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

· **Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P321 Specific treatment (see on this label).

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Hazard description:**· **WHMIS-symbols:**

B2 - Flammable liquid

D2B - Toxic material causing other toxic effects

· **Classification system:**· **NFPA ratings (scale 0 - 4)**

Health = 1

Fire = 3

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = 1

Fire = 3

Reactivity = 0

**4 First-aid measures**· **After inhalation:**

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.· **After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing:**

Do not induce vomiting; immediately call for medical help.

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If symptoms persist consult doctor.

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**5 Fire-fighting measures**

- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Protective equipment:**  
Wear self-contained respiratory protective device.  
Wear fully protective suit.

**6 Accidental release measures**

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**  
Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Ensure adequate ventilation.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

**7 Handling and storage**

- **Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.
- **Storage:**
  - **Requirements to be met by storerooms and receptacles:** Store in a refrigerator (2-8 °C).
  - **Information about storage in one common storage facility:**  
Store away from oxidizing agents.  
Store away from reducing agents.
  - **Further information about storage conditions:**  
Protect from heat and direct sunlight.  
Keep receptacle tightly sealed.  
Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

**8 Exposure controls/personal protection**

- **Additional information about design of technical systems:** No further data; see item 7.

- **Components with limit values that require monitoring at the workplace:**

**64-17-5 ethanol**

EL	Short-term value: 1000 ppm
EV	Long-term value: 1.900 mg/m <sup>3</sup> , 1.000 ppm

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- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment:**
- **General protective and hygienic measures:**
  - Keep away from foodstuffs, beverages and feed.
  - Immediately remove all soiled and contaminated clothing.
  - Wash hands before breaks and at the end of work.
  - Avoid contact with the eyes and skin.
- **Breathing equipment:**
  - In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**
  - The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- **Penetration time of glove material**
  - The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**



Tightly sealed goggles

## 9 Physical and chemical properties

· <b>General Information</b>	
· <b>Appearance:</b>	
Form:	Liquid
Color:	Yellow
· <b>Odor:</b>	Alcohol-like
· <b>Odour threshold:</b>	Not determined.
· <b>pH-value:</b>	2.3
· <b>Change in condition</b>	
Melting point/Melting range:	-114.5 °C (ethanol)
Boiling point/Boiling range:	78 °C
· <b>Flash point:</b>	13 °C
· <b>Flammability (solid, gaseous):</b>	Not applicable
· <b>Ignition temperature:</b>	425.0 °C (ethanol)
· <b>Danger of explosion:</b>	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

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- |   |  |
|---|--|
| · <b>Explosion limits:</b>                        |  |
| <b>Lower:</b>                                     | 3.5 Vol % (ethanol)                        |
| <b>Upper:</b>                                     | 15.0 Vol % (ethanol)                       |
| · <b>Vapor pressure:</b>                          | 59.0 hPa (20 °C, ethanol)                  |
| · <b>Density:</b>                                 | 1.1 g/cm <sup>3</sup>                      |
| · <b>Relative density</b>                         | Not determined.                            |
| · <b>Vapour density</b>                           | 1.6 g/cm <sup>3</sup> (ethanol, air=1)     |
| · <b>Solubility in / Miscibility with Water:</b>  | Fully miscible.                            |
| · <b>Partition coefficient (n-octanol/water):</b> | -0.32 (ethanol)                            |
| · <b>Other information</b>                        | No further relevant information available. |

## 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used and stored according to specifications.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** Carbon monoxide and carbon dioxide

## 11 Toxicological information

- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

### 868-77-9 2-hydroxyethyl methacrylate

Oral	LD50	4680 mg/kg (guinea pig)
		3275 mg/kg (mouse)
		5050 mg/kg (rat)

### 64-17-5 ethanol

Oral	LD50	3450 mg/kg (mouse)
		7060 mg/kg (rat)
Inhalative	LC50/4 h	20000 mg/l (rat)
	LD50	3600 mg/kg (rat - intraperitoneal)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**  
The product shows the following dangers according to internally approved calculation methods for preparations:  
Irritant

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

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## · OSHA-Ca (Occupational Safety &amp; Health Administration)

None of the ingredients is listed.



**12 Ecological information**

- **Persistence and degradability** No further relevant information available.
- **Bioaccumulative potential** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (Self-assessment): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

**13 Disposal considerations**

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

**14 Transport information**

- |   |                                       |
|---|---------------------------------------|
| · UN-Number   |                                       |
| · DOT, TDG, IMDG, IATA  | UN1170                                |
| · UN proper shipping name   |                                       |
| · DOT   | Ethanol, mixture                      |
| · TDG   | 1170 Ethanol (Ethyl alcohol), mixture |
| · IMDG  | ETHANOL (ETHYL ALCOHOL), mixture      |
| · IATA  | ETHANOL, mixture                      |
| · Transport hazard class(es)  |                                       |
| · DOT   |                                       |
|  |                                       |
| · Class   | 3 Flammable liquids                   |
| · Label   | 3                                     |
| · TDG, IMDG, IATA   |                                       |
|  |                                       |
| · Class   | 3 Flammable liquids                   |
| · Label   | 3                                     |
| · Packing group   |                                       |
| · DOT, TDG, IMDG, IATA  | III                                   |
| · Environmental hazards:  |                                       |
| · Marine pollutant:   | No                                    |

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· Special precautions for user	Warning: Flammable liquids
· Danger code (Kemler):	30
· EMS Number:	F-E,S-D
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· UN "Model Regulation":	UN1170, Ethanol (Ethyl alcohol), mixture, 3, III

## 15 Regulatory information

### · Sara

#### · Section 355 (extremely hazardous substances):

None of the ingredient is listed.

#### · Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

#### · TSCA (Toxic Substances Control Act):

All ingredients are listed.

#### · Proposition 65

##### · Chemicals known to cause cancer:

None of the ingredients is listed.

##### · Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

##### · Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

##### · Chemicals known to cause developmental toxicity:

64-17-5 ethanol

#### · Cancerogenity categories

##### · EPA (Environmental Protection Agency)

None of the ingredients is listed.

##### · TLV (Threshold Limit Value established by ACGIH)

64-17-5 ethanol

A3

##### · NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

#### · Canadian substance listings:

##### · Canadian Domestic Substances List (DSL)

All ingredients are listed.

##### · Canadian Ingredient Disclosure list (limit 0.1%)

64-17-5 ethanol

##### · Canadian Ingredient Disclosure list (limit 1%)

868-77-9 2-hydroxyethyl methacrylate

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

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· **Relevant phrases**

H225 Highly flammable liquid and vapor.  
H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.  
H350 May cause cancer.

· **Abbreviations and acronyms:**

Flam. Liq. 2: Flammable liquids, Hazard Category 2  
Flam. Liq. 3: Flammable liquids, Hazard Category 3  
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2  
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2  
Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A  
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1  
Carc. 1A: Carcinogenicity, Hazard Category 1A

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