

**Material Safety Data Sheet**  
acc. to ISO/DIS 11014

Printing date 01/22/2007

Reviewed on 01/22/2007

**1 Identification of substance**

- **Product details**
- **Trade name:** CLEARFIL PHOTO BOND ; UNIVERSAL
- **Article number:** US023-U
- **Application of the substance / the preparation** Dental bonding material
- **Manufacturer:**  
Kuraray Medical Inc.  
1621 Sakazu, Kurashiki, Okayama 710-0801,  
Japan
- **Supplier:**  
Kuraray America, Inc.  
600 Lexington Avenue, 26th Floor, New York,  
NY10022 U.S.A.  
Tel: 800-879-1676  
Fax: 888-700-5200  
Website: www.kuraraydental.com
- **Information department:** Supplier

**2 Composition/Data on components**

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

· **Dangerous components:**

64-17-5	ethanol	80-100%
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· **Other ingredients:**

Initiators  
Accelerators

**3 Hazards identification**

- **Hazard description:**  
Highly flammable
- **Information pertaining to particular dangers for man and environment:**  
The product has to be labelled due to the calculation procedure of international guidelines.  
Highly flammable.
- **Classification system:**  
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
- **NFPA ratings (scale 0 - 4)**  
Health = 0  
Fire = 3  
Reactivity = 0
- **HMIS-ratings (scale 0 - 4)**  
Health = 0  
Fire = 3  
Reactivity = 0

**4 First aid measures**

- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **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:**  
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Protective equipment:**  
Wear self-contained respiratory protective device.  
Wear fully protective suit.

**6 Accidental release measures**

- **Person-related safety precautions:** Wear protective equipment. Keep unprotected persons away.
- **Measures for environmental protection:**  
Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Ensure adequate ventilation.

**7 Handling and storage**

- **Handling:**
- **Information for safe handling:** Ensure good ventilation/exhaustion at the workplace.
- **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:**  
Keep receptacle tightly sealed.  
Store in cool, dry conditions in well sealed receptacles.  
Protect from heat and direct sunlight.

**8 Exposure controls and 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**

PEL	1900 mg/m <sup>3</sup> , 1000 ppm
REL	1900 mg/m <sup>3</sup> , 1000 ppm
TLV	1880 mg/m <sup>3</sup> , 1000 ppm

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
- **Breathing equipment:** Not required.
- **Protection of hands:**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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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**

· **General Information**

<b>Form:</b>	Liquid
<b>Color:</b>	Transparent
<b>Odor:</b>	Alcohol-like

· **Change in condition**

<b>Melting point/Melting range:</b>	-114.5 °C (ethanol)
<b>Boiling point/Boiling range:</b>	78 °C (ethanol)

· **Flash point:** 13 °C (ethanol)

· **Ignition temperature:** 425.0 °C (ethanol)

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

· **Explosion limits:**

<b>Lower:</b>	3.5 Vol % (ethanol)
<b>Upper:</b>	15.0 Vol % (ethanol)

· **Vapor pressure:** 59.0 hPa (20°C, ethanol)

· <b>Density:</b>	0.8 g/cm <sup>3</sup> (ethanol)
· <b>Vapour density</b>	1.6 g/cm <sup>3</sup> (ethanol, air=1)

· **Solubility in / Miscibility with**

**Water:** Fully miscible.

· **pH-value:** Not applicable

· **Segregation coefficient (n-octanol/water):** -0.32 (ethanol)

**10 Stability and reactivity**

· **Thermal decomposition / conditions to be avoided:**

No decomposition if used and stored according to specifications.

· **Dangerous reactions** No dangerous reactions known.

· **Dangerous products of decomposition:** Carbon monoxide and carbon dioxide

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**11 Toxicological information**

· **Acute toxicity:**

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

**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:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.

**12 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**

· **Product:**

· **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.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

**14 Transport information**

· **DOT regulations:**

- **Hazard class:** 3
- **Identification number:** UN1170
- **Packing group:** II
- **Proper shipping name (technical name):** ETHANOL SOLUTION
- **Label:** 3

· **Land transport ADR/RID (cross-border):**

- **ADR/RID class:** 3 Flammable liquids
- **Danger code (Kemler):** 33
- **UN-Number:** 1170
- **Packaging group:** II
- **Label:** 3
- **Description of goods:** 1170 ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

· **Maritime transport IMDG:**

- **IMDG Class:** 3
- **UN Number:** 1170
- **Label:** 3
- **Packaging group:** II
- **EMS Number:** F-E,S-D
- **Marine pollutant:** No

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· <b>Propper shipping name:</b>	ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)
· <b>Air transport ICAO-TI and IATA-DGR:</b>	
· <b>ICAO/IATA Class:</b>	3
· <b>UN/ID Number:</b>	1170
· <b>Label</b>	3
· <b>Packaging group:</b>	II
· <b>Propper shipping name:</b>	ETHANOL SOLUTION

**15 Regulations**

· <b>Sara</b>
· <b>Section 355 (extremely hazardous substances):</b>
None of the ingredient is listed.
· <b>Section 313 (Specific toxic chemical listings):</b>
None of the ingredients is listed.
· <b>TSCA (Toxic Substances Control Act):</b>
All ingredients are listed.
· <b>Proposition 65</b>
· <b>Chemicals known to cause cancer:</b>
None of the ingredients is listed.
· <b>Chemicals known to cause reproductive toxicity for females:</b>
None of the ingredients is listed.
· <b>Chemicals known to cause reproductive toxicity for males:</b>
None of the ingredients is listed.
· <b>Chemicals known to cause developmental toxicity:</b>
All ingredients are listed.
· <b>Carcinogeny categories</b>
· <b>EPA (Environmental Protection Agency)</b>
None of the ingredients is listed.
· <b>IARC (International Agency for Research on Cancer)</b>
None of the ingredients is listed.
· <b>NTP (National Toxicology Program)</b>
None of the ingredients is listed.
· <b>TLV (Threshold Limit Value established by ACGIH)</b>
64-17-5 ethanol <span style="float:right">A4</span>
· <b>NIOSH-Ca (National Institute for Occupational Safety and Health)</b>
None of the ingredients is listed.
· <b>OSHA-Ca (Occupational Safety &amp; Health Administration)</b>
None of the ingredients is listed.

· **Product related hazard informations:**  
The product has been classified and marked in accordance with directives on hazardous materials.

· **Hazard symbols:**



Highly flammable

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**· Risk phrases:**

Highly flammable.

**· Safety phrases:**

Keep container tightly closed and in a well-ventilated place.

Keep away from sources of ignition - No smoking.

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

**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.

**· Version: 1**

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