kuraray

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 05/07/2012 Reviewed on 04/01/2012

1 Identification of the substance/mixture and of the company/undertaking

· **Product identifier**

· **Trade name: CLEARFIL PHOTO BOND ; CATALYST**

· **Article number:** US023-C
· **Application of the substance / the preparation** 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: Single Component**
· **Description:** Mixture of substances listed below with nonhazardous additions.

· **Dangerous components:**		
1565-94-2	bisphenol A diglycidylmethacrylate H315; H319	20-40%
868-77-9	2-hydroxyethyl methacrylate H315; H319; H317	5-25%
94-36-0	benzoyl peroxide H241; H319; H317	<2.5%

· **Other ingredients:**
10-Methacryloyloxydecyl dihydrogen phosphate
Hydrophobic aliphatic methacrylate
dl-Camphorquinone
Others

3 Hazards identification

· **Classification of the substance or mixture**

GHS07

H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

Irritant
Irritating to eyes and skin. May cause sensitisation by skin contact.
· **Information concerning particular hazards for human and environment:**
The product has to be labelled due to the calculation procedure of international guidelines.
· **Classification system:**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

(Contd. on page 2)

~Verified on 2013-5 by Henry Schein to be the most current version of the SDS. To be verified again on 2016-5. ~

kuraray

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 05/07/2012 Reviewed on 04/01/2012

Trade name: CLEARFIL PHOTO BOND ; CATALYST

(Contd. of page 1)

· **Label elements**
· **GHS label elements**
The product is classified and labelled according to the Globally Harmonized System (GHS).
· **Hazard pictograms** GHS07
· **Signal word** Warning

· **Hazard-determining components of labelling:**
2-hydroxyethyl methacrylate
benzoyl peroxide
· **Hazard statements**
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
· **Precautionary statements**

P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
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).
P362	Take off contaminated clothing and wash before reuse.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

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

Health = 1
Fire = 1
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = 1
Fire = 1
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.
If symptoms persist consult doctor.

5 Firefighting measures

· **Suitable extinguishing agents:**
CO2, 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.

(Contd. on page 3)

kuraray

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 05/07/2012 Reviewed on 04/01/2012

Trade name: CLEARFIL PHOTO BOND ; CATALYST

(Contd. of page 2)

Wear fully protective suit.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Not required.
· **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

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· **Information about protection against explosions and fires:** No special measures required.
· **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.
· **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:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
· **Additional information:** The lists that were valid during the creation were used as basis.
· **Personal protective equipment:**
· **General protective and hygienic measures:**
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

(Contd. on page 4)

kuraray

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 05/07/2012 Reviewed on 04/01/2012

Trade name: CLEARFIL PHOTO BOND ; CATALYST

(Contd. of page 3)

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

· **General Information**	
· **Appearance:**	
Form:	Liquid
Color:	Transparent Yellow
· **Odor:**	Odorless
· **pH-value:**	Not applicable
· **Change in condition**	
Melting point/Melting range:	-12 °C (2-hydroxyethyl methacrylate)
Boiling point/Boiling range:	205 °C (2-hydroxyethyl methacrylate)
· **Flash point:**	97 °C (2-hydroxyethyl methacrylate)
· **Ignition temperature:**	Not applicable
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits:**	
Lower:	Not applicable
Upper:	Not applicable
· **Vapor pressure:**	Not applicable
· **Density:**	1.1 g/cm³ (9.18 lbs/gal)
· **Vapour density**	Not applicable
· **Solubility in / Miscibility with**	
Water:	Fully miscible.
· **Segregation coefficient (n-octonol/water):**	Not applicable
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.

(Contd. on page 5)

kuraray

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 05/07/2012 Reviewed on 04/01/2012

Trade name: CLEARFIL PHOTO BOND ; CATALYST

(Contd. of page 4)

· **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)
94-36-0 benzoyl peroxide		
Oral	LD50	5700 mg/kg (mouse)
		7710 mg/kg (rat)
	LD50	250 mg/kg (mouse - 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

12 Ecological information

· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **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.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· **UN-Number**
· **DOT, ADR, ADN, IMDG, IATA** Void

(Contd. on page 6)

kuraray

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 05/07/2012 Reviewed on 04/01/2012

Trade name: CLEARFIL PHOTO BOND ; CATALYST

(Contd. of page 5)

· **UN proper shipping name** · **DOT, ADR, ADN, IMDG, IATA**	Void
· **Transport hazard class(es)** · **DOT, ADR, ADN, IMDG, IATA** · **Class**	Void
· **Packing group** · **DOT, ADR, IMDG, IATA**	Void
· **Environmental hazards:** · **Marine pollutant:**	No
· **Special precautions for user**	Not applicable.
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **UN "Model Regulation":**	-

15 Regulatory information

· **Sara**

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

None of the ingredient is listed.

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

94-36-0	benzoyl peroxide

· **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:**

None of the ingredients is listed.

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

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

94-36-0	benzoyl peroxide	3

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

94-36-0	benzoyl peroxide	A4

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

None of the ingredients is listed.

(Contd. on page 7)

kuraray

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 05/07/2012 Reviewed on 04/01/2012

Trade name: CLEARFIL PHOTO BOND ; CATALYST

(Contd. of page 6)

· **OSHA-Ca (Occupational Safety & Health Administation)**

None of the ingredients is listed.

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:** 3
· **Relevant phrases**
Not applicable
H241 Heating may cause a fire or explosion.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.

kuraray

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 05/07/2012 Reviewed on 04/01/2012

1 Identification of the substance/mixture and of the company/undertaking

· **Product identifier**

· **Trade name: CLEARFIL PHOTO BOND ; UNIVERSAL**

· **Article number:** US023-U
· **Application of the substance / the preparation** 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: Single Component**
· **Description:** Mixture of substances listed below with nonhazardous additions.

· **Dangerous components:**			
64-17-5	ethanol	H225	>90%

· **Other ingredients:**
Catalysts
Accelerators

3 Hazards identification

· **Classification of the substance or mixture**

GHS02 Flame

H225 Highly flammable liquid and vapour.
· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

Highly flammable

Highly flammable.
· **Information concerning particular hazards for human and environment:**
The product has to be labelled due to the calculation procedure of international guidelines.
· **Classification system:**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

· **Label elements**
· **GHS label elements**
The product is classified and labelled according to the Globally Harmonized System (GHS).
· **Hazard pictograms** GHS02
· **Signal word** Danger
· **Hazard statements**
H225 Highly flammable liquid and vapour.
· **Precautionary statements**
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

(Contd. on page 2)

kuraray

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 05/07/2012 Reviewed on 04/01/2012

Trade name: CLEARFIL PHOTO BOND ; UNIVERSAL

(Contd. of page 1)

P240 Ground/bond container and receiving equipment.
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**
· **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.
If symptoms persist consult doctor.

5 Firefighting measures

· **Suitable extinguishing agents:**
CO2, 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 respiatory 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.

(Contd. on page 3)

kuraray

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 05/07/2012 Reviewed on 04/01/2012

Trade name: CLEARFIL PHOTO BOND ; UNIVERSAL

(Contd. of page 2)

7 Handling and storage

· **Handling:**
· **Precautions 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.
· **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	
PEL	1900 mg/m³, 1000 ppm
REL	1900 mg/m³, 1000 ppm
TLV	1880 mg/m³, 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.
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

(Contd. on page 4)

kuraray

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 05/07/2012 Reviewed on 04/01/2012

Trade name: CLEARFIL PHOTO BOND ; UNIVERSAL

(Contd. of page 3)

9 Physical and chemical properties

· **General Information**	
· **Appearance:**	
Form:	Liquid
Color:	Transparent
· **Odor:**	Alcohol-like
· **pH-value:**	Not applicable
· **Change in condition**	
Melting point/Melting range:	-114.5 °C (ethanol)
Boiling point/Boiling range:	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:**	
Lower:	3.5 Vol % (ethanol)
Upper:	15.0 Vol % (ethanol)
· **Vapor pressure:**	59.0 hPa (20°C, ethanol)
· **Density:**	1.1 g/cm³
· **Vapour density**	1.6 g/cm³ (ethanol, air=1)
· **Solubility in / Miscibility with**	
Water:	Fully miscible.
· **Segregation coefficient (n-octonol/water):**	-0.32 (ethanol)
· **Other information**	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:**		
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 - intraperioneal)

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.

(Contd. on page 5)

kuraray

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 05/07/2012 Reviewed on 04/01/2012

Trade name: CLEARFIL PHOTO BOND ; UNIVERSAL

(Contd. of page 4)

12 Ecological information

· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **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.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· **UN-Number**	
· **DOT**	UN1170
· **ADR, IMDG, IATA**	1170
· **UN proper shipping name**	
· **ADR**	1170 ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)
· **IMDG**	ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)
· **IATA**	ETHANOL SOLUTION
· **Transport hazard class(es)**	
· **DOT, IMDG, IATA**	

· **Class**	3 Flammable liquids.
· **Label**	3
· **ADR**	

· **Class**	3 Flammable liquids
· **Label**	3
· **Packing group**	
· **DOT, ADR, IMDG, IATA**	II
· **Environmental hazards:**	
· **Marine pollutant:**	No

(Contd. on page 6)

kuraray

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 05/07/2012 Reviewed on 04/01/2012

Trade name: CLEARFIL PHOTO BOND ; UNIVERSAL

(Contd. of page 5)

· **Special precautions for user**	Warning: Flammable liquids
· **Danger code (Kemler):**	33
· **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 SOLUTION (ETHYL ALCOHOL SOLUTION); 3; II

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:**
All ingredients are listed.

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.

· **IARC (International Agency for Research on Cancer)**
None of the ingredients is listed.

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

64-17-5	ethanol	A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administation)**
None of the ingredients is listed.

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:** 3
· **Relevant phrases**
Not applicable
H225 Highly flammable liquid and vapour.

~Verified on 2013-5 by Henry Schein to be the most current version of the SDS. To be verified again on 2016-5. ~