

Material Safety Data Sheet acc. to ISO/DIS 11014

Printing date 05/30/2005

Reviewed on 05/25/2005

1 Identification of substance:

· **Product details:**

· **Trade name:** Gluma Comfort Bond

· **Application of the substance / the preparation** Dental bonding material

· **Manufacturer/Supplier:**

Heraeus Kulzer GmbH
Grüner Weg 11, D-63450 Hanau

Tel.: 0800 4372522

· **Information department:**

Dr. Barbara Bräu
Tel.: +49 2133 51-8521 / Fax: +49 2133 51-5016
e-mail: barbara.braeu@heraeus.com

· **Emergency information:** Call +49 30 19240 (24 hours).

2 Composition/Data on components:

· **Chemical characterization**

· **Description:** Composition based on methacrylates

· **Dangerous components:**

	Ethanol	F; R 11	25-50%
868-77-9	2-hydroxyethyl methacrylate	Xi; R 36/38-43	10-25%
	Poly(methacrylic-oligo-acrylic acid)	Xi; R 36	5-10%
70293-55-9	4-Methacryloxyethyltrimellitanhydrid	Xn; R 22-36/38-43	0-5%

· **Additional information** For the wording of the listed risk phrases refer to section 16.

3 Hazards identification

· **Hazard description:**



Xi Irritant

· **Information pertaining to particular dangers for man and environment**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

R 10 Flammable.

R 36 Irritating to eyes.

R 43 May cause sensitization by skin contact.

· **Classification system**

The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.

· **NFPA ratings for USA (scale 0-4)**



Health = 2
Fire = 3
Reactivity = 0

(Contd. on page 2)

USA

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 05/30/2005

Reviewed on 05/25/2005

Trade name: Gluma Comfort Bond

· **HMIS-Ratings (Scale 0-4)**

(Contd. of page 1)

2	Health = 2
3	Fire = 3
REACTIVITY 0	Reactivity = 0

4 First aid measures

- **After inhalation** Supply fresh air; consult doctor in case of complaints.
- **After skin contact**
Immediately wash with water and soap and rinse thoroughly.
Immediately rinse with water.
- **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.

5 Fire fighting measures

- **Suitable extinguishing agents** void
- **Special hazards caused by the material, its products of combustion or resulting gases:**
Formation of toxic gases is possible during heating or in case of fire.
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Person-related safety precautions:** Wear protective equipment. Keep unprotected persons away.
- **Measures for environmental protection:**
Prevent seepage into sewage system, workpits and cellars.
Dilute with plenty of water.
- **Measures for cleaning/collecting:**
Absorb with liquid binding material (diatomite, universal binders, for small amounts tissues).
- **Additional information:** No dangerous substances are released.

7 Handling and storage

- **Handling**
 - **Information for safe handling:** Keep receptacles tightly sealed.
 - **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:** No special requirements.
 - **Information about storage in one common storage facility:** Not required.
 - **Further information about storage conditions:** Keep cool, if possible (not above 25 °C).

8 Exposure controls and personal protection

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

(Contd. on page 3)

-USA-

Material Safety Data Sheet acc. to ISO/DIS 11014

Printing date 05/30/2005

Reviewed on 05/25/2005

Trade name: **Gluma Comfort Bond**

(Contd. of page 2)

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

Ethanol

PEL ()	1900 mg/m ³ , 1000 ppm
REL ()	1900 mg/m ³ , 1000 ppm
TLV ()	1880 mg/m ³ , 1000 ppm

· **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.

Avoid contact with the eyes and skin.

· **Breathing equipment:** Not required.

· **Protection of hands:**

If skin contact cannot be avoided, protective gloves are recommended to avoid possible sensitization.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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 through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **For the permanent contact in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:**

Wear protective gloves based on polyvinyl alcohol.

· **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**

Butyl rubber, BR
Fluorocarbon rubber (Viton)
Nitrile rubber, NBR
Chloroprene rubber, CR

· **Eye protection:** Protective goggles are recommended.

· **Body protection:** Light weight protective clothing

9 Physical and chemical properties:

· **General Information**

· **Form:** Fluid
· **Color:** Yellowish
· **Odor:** Characteristic

· **Change in condition**

· **Melting point/Melting range:** undetermined
· **Boiling point/Boiling range:** 78°C (172°F)

· **Flash point:** 23°C (73°F)

(Contd. on page 4)

USA

Material Safety Data Sheet acc. to ISO/DIS 11014

Printing date 05/30/2005

Reviewed on 05/25/2005

Trade name: Gluma Comfort Bond

(Contd. of page 3)

· Ignition temperature:	425.0°C (797°F)
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· Explosion limits:	
· Lower:	3.5 Vol %
· Upper:	15.0 Vol %
· Vapor pressure at 20°C (68°F):	57 hPa (43 mm Hg)
· Density at 20°C (68°F):	1.000 g/cm ³
· Solubility in / Miscibility with	
· Water:	Not miscible or difficult to mix
· Solvent content:	
· Organic solvents:	39.8 %
· Water:	9.9 %
· VOC USA	660.9 g/l / 5.52 lb/gl
· Solids content:	5.2 %

10 Stability and reactivity

- **Dangerous reactions** No dangerous reactions known
- **Dangerous products of decomposition:** none

11 Toxicological information

- **Acute toxicity:**
 - **Primary irritant effect:**
 - **on the skin:** No irritant effect.
 - **on the eye:** Irritating effect.
 - **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**
Irritant
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

12 Ecological information:

- **General notes:**
Water hazard class 2 (Self-assessment): hazardous for water.
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.

13 Disposal considerations

- **Product:**
 - **Recommendation**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

(Contd. on page 5)

USA

Material Safety Data Sheet acc. to ISO/DIS 11014

Printing date 05/30/2005

Reviewed on 05/25/2005

Trade name: Gluma Comfort Bond

(Contd. of page 4)

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

· **DOT regulations:**



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

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



- **ADR/RID class:** 3 (F1) Flammable liquids
- **Danger code (Kemler):** 30
- **UN-Number:** 1170
- **Packaging group:** III
- **Label:** 3
- **Description of goods:** 1170 ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

· **Maritime transport IMDG:**



- **IMDG Class:** 3
- **UN Number:** 1170
- **Label:** 3
- **Packaging group:** III
- **EMS Number:** F-E,S-D
- **Marine pollutant:** No
- **Propper shipping name:** ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

· **Air transport ICAO-TI and IATA-DGR:**



- **ICAO/IATA Class:** 3
- **UN/ID Number:** 1170
- **Label:** 3
- **Packaging group:** III
- **Propper shipping name:** ETHANOL, solution

USA

(Contd. on page 6)

Material Safety Data Sheet acc. to ISO/DIS 11014

Printing date 05/30/2005

Reviewed on 05/25/2005

Trade name: **Gluma Comfort Bond**

(Contd. of page 5)

15 Regulations

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

None of the ingredients is listed.

· **SARA Section 313 (specific toxic chemical listings)**

None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act)**

	Ethanol
41137-60-4	diurethandimethacrylate
868-77-9	2-hydroxyethyl methacrylate
7732-18-5	water, distilled, conductivity or of similar purity
110-16-7	maleic acid
67362-76-9	2-(n-Butoxy)ethyl-4-dimethylaminobenzoat
10373-78-1	2,3-Bornandion

· **Prop 65 - Chemicals known to cause cancer**

None of the ingredients is listed.

· **Prop 65 - Chemicals known to cause reproductive toxicity**

None of the ingredients is listed.

· **Cancerogeny categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

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

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

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

Ethanol A4

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

None of the ingredients is listed.

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

None of the ingredients is listed.

· **Markings according to EU guidelines:**

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials

· **Code letter and hazard designation of product:**

Xi Irritant

· **Hazard-determining components of labelling:**

2-hydroxyethyl methacrylate
4-Methacryloxyethyltrimellitanhydrid

· **Risk phrases:**

10 Flammable.
36 Irritating to eyes.
43 May cause sensitization by skin contact.

· **Safety phrases:**

7 Keep container tightly closed.
16 Keep away from sources of ignition - No smoking.
24 Avoid contact with skin.

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(Contd. of page 6)

- 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- 28 After contact with skin, wash immediately with plenty of water
- 37 Wear suitable gloves.

· **National regulations**

· **Technical instructions (air):**

Class	Share in %
Wasser	5-10
III	25-50

- **Water hazard class:** Water hazard class 2 (Self-assessment): hazardous for water.

16 Other information:

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant R-phrases**

- 11 Highly flammable.
- 22 Harmful if swallowed.
- 36 Irritating to eyes.
- 36/38 Irritating to eyes and skin.
- 43 May cause sensitization by skin contact.

· **Department issuing MSDS:** Safety department

· **Contact:** Dr. Tuchscherer Tel.: +49 6081 959-287

- * **Data compared to the previous version altered.**

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