

## **SAFETY DATA SHEETS**

**This SDS packet was issued with item:**

074491460

**The safety data sheets (SDS) in this packet apply to the individual products listed below. Please refer to invoice for specific item number(s).**

070441121 070441147

**The safety data sheets (SDS) in this packet apply to one or more components included in the items listed below. Items listed below may require one or more SDS. Please refer to invoice for specific item number(s).**

074491437 074491445 074491486 074491601 074491619 074565271

ACTIO MSDS ID: 997874

View Section : 12345678910111213141516

SECTION 1: CHEMICAL PRODUCT and COMPANY IDENTIFICATION (N/A)

Product Name:iBOND Total Etch

Distributor Name: Heraeus Kulzer GmbH  
Revision Date:12/22/2008  
Trade Names:iBOND Total Etch  
Manufacturer Name:Heraeus Kulzer GmbH  
Address:Gr<sup>n</sup>ner Weg 11,  
D-63450 Hanau

Information department:  
Dr. Hoffmann  
Tel.: +49 6081 959-313  
Fax: +49 6081 959-223

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

General Use: Application of the substance/the preparation: Dental bonding material

Email: marcus.hoffmann@heraeus.com

Business Phone:0800 4372522  
NFPA ratings for USA (scale 0-4)  
HMIS-Ratings (Scale 0-4)  
HMIS Health: \*

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

3  
20  
0

HMIS

HEALTH2  
FIRE3  
REACTIVITY0  
PPE

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SECTION 2 : COMPOSITION, INFORMATION ON INGREDIENTS: (N/A)  
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Ingredient NameCAS#Ingredient Percent

Glutaral111-30-80 - 5%  
EC Index Number:1  
Hazard Symbols:T, N  
Risk Phrases:R 23/25-34-42/43-50  
Comments:Dangerous component

Ethanol64-17-525 - 50%  
EC Index Number:1  
Hazard Symbols:F  
Risk Phrases:R 11  
Comments:Dangerous component

2-hydroxyethyl methacrylate868-77-910 - 25%  
EC Index Number:1  
Hazard Symbols:Xi  
Risk Phrases:R 36/38-43  
Comments:Dangerous component

Poly(methacrylic-oligo-acrylic acid)0 - 5%  
EC Index Number:1  
Hazard Symbols:Xi  
Risk Phrases:R 36  
Comments:Dangerous component

4-methacryloxyethyltrimellitic acid anhydride70293-55-90 - 5%  
EC Index Number:1  
Hazard Symbols:Xn  
Risk Phrases:R 22-36/38-43  
Comments:Dangerous component

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

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SECTION 3 : HAZARDS IDENTIFICATION: (N/A)  
\*\*\*\*\*

Hazard description: Xn Harmful

environment: Information pertaining to particular dangers for man and

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 20/22 Harmful by inhalation and if swallowed.

R 37/38 Irritating to respiratory system and skin.

R 41 Risk of serious damage to eyes.

R 42/43 May cause sensitization by inhalation and 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

HMIS-Ratings (Scale 0-4):

Health = \*2

Fire = 3

Reactivity = 0

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SECTION 4 : FIRST AID MEASURES: (N/A)  
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Eye Contact: Rinse opened eye for several minutes under running water. Then consult a doctor.

Skin Contact: Immediately wash with water and soap and rinse thoroughly.

Inhalation: Supply fresh air; consult doctor in case of complaints.

Ingestion: After swallowing: Immediately call a doctor.

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SECTION 5 : FIRE FIGHTING MEASURES: (N/A)  
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Explosion: Danger of explosion: Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

Flash Point: 24 deg C (75 deg F)

Upper Flammable or Explosive Limit: 15.0 Vol %

Lower Flammable or Explosive Limit: 3.5 Vol %

Auto Ignition Temperature: 425 deg C (797 deg F)

Extinguishing Media: CO2, extinguishing powder or water spray.

Fight larger fires with water spray or alcohol resistant foam.

Unsuitable Media: For safety reasons unsuitable extinguishing agents: Water with full jet.

Hazardous Combustion Byproducts: Special hazards caused by the material, its products of combustion or resulting gases:

Can form explosive gas-air mixtures.

Formation of toxic gases is possible during heating or in case of fire.

Protective Equipment: Mount respiratory protective device.

Auto igniting: Product is not selfigniting.

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SECTION 6 : ACCIDENTAL RELEASE MEASURES: (N/A)

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Personal Precautions: Person-related safety precautions: Wear protective equipment. Keep unprotected persons away.

Spill Cleanup Measures: Measures for cleaning/collecting:

Absorb with liquid binding material (diatomite, universal binders, for small amounts tissues).

Send for recovery or disposal in suitable receptacles.

Environmental Precautions: Measures for environmental protection:

Do not allow to penetrate the ground/soil.

No special measures required.

Additional information:

See Section 8 for information on personal protection

equipment.

See Section 13 for disposal information.

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SECTION 7 : HANDLING and STORAGE: (N/A)

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Handling: Information for safe handling:

Keep receptacles tightly sealed.

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:  
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 deg C).

Hygiene Practices: Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

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SECTION 8 : EXPOSURE CONTROLS, PERSONAL PROTECTION: (N/A)  
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#### Personal Protective Equipment

Routine Handling: 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.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

Hand Protection Description: Protection of hands:

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

Solvent resistant gloves

#### 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 of a maximum of 15 minutes gloves made of the following materials are suitable:

Butyl rubber, BR

Eye/Face Protection: Tightly sealed goggles.

Protective Clothing/Body Protection: Body protection: Light weight protective clothing

Respiratory Protection: Breathing equipment: Not necessary with efficient local exhaust. If exposition to vapours is possible, use breathing protective mask (filter A).

Exposure Limits: Chemical Name: amorphes Siliziumdioxid

PEL: Short-term value: 80 mg/m<sup>3</sup> as % SiO<sub>2</sub>

REL: 6 mg/m<sup>3</sup>

TLV: 10 mg/m3 (e)

Additional information about design of technical systems: No further data; see Section 7.

Additional information: The lists that were valid during the creation were used as basis.

Ingredient Guidelines

Ingredient: Ethanol

Guideline Type:OSHA PEL-TWA

Guideline Information:1900 mg/m3, 1000 ppm

Guideline Type:NIOSH REL-TWA

Guideline Information:1900 mg/m3, 1000 ppm

Guideline Type:ACGIH TLV-TWA

Guideline Information:1880 mg/m3, 1000 ppm

Ingredient: Glutaral

Guideline Type:NIOSH REL-STEL

Guideline Information:Short-term value: C 0.8 mg/m3, C 0.2 ppm (SEN)

Guideline Type:ACGIH TLV-TWA

Guideline Information:Short-term value: C 0.2 mg/m3, C 0.05 ppm (SEN)

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SECTION 9 : PHYSICAL and CHEMICAL PROPERTIES: (N/A)  
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Physical State/Appearance:Form: Fluid

Color:Yellowish

Odor:Characteristic

Vapor Pressure:At 20 deg C (68 deg F): 57 hPa (43 mm Hg)

Flash Point:24 deg C (75 deg F)

Auto Ignition Temperature:425 deg C (797 deg F)

Upper Explosive Limit:15.0 Vol %

Lower Explosive Limit:3.5 Vol %

Boiling Point:Undetermined

Melting Point:Undetermined

Solubility:In/Miscibility with Water: Not miscible or difficult to mix

Density:Not determined

Auto igniting: Product is not selfigniting.

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

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SECTION 10 : STABILITY and REACTIVITY: (N/A)  
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Reactivity:Dangerous reactions: No dangerous reactions known  
Hazardous Decomposition Products: Dangerous products of decomposition: None

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SECTION 11 : TOXICOLOGICAL INFORMATION: (N/A)  
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Applies to All Ingredients :  
Sensitization:Sensitization possible through inhalation.  
Sensitization possible through skin contact.  
Irritation:Primary irritant effect:  
On the skin: Irritant to skin and mucous membranes.  
On the eye: Strong irritant with the danger of severe eye  
injury.  
Other Toxicological Information:Additional toxicological  
information: Harmful

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SECTION 12 : ECOLOGICAL INFORMATION: (N/A)  
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General notes: Avoid transfer into the environment.

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SECTION 13 : DISPOSAL CONSIDERATIONS: (N/A)  
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Waste Disposal: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.

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SECTION 14 : TRANSPORT INFORMATION: (N/A)  
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DOT Shipping Name:ETHANOL SOLUTION  
DOT UN Number:UN1170  
DOT Hazard Class:3  
DOT Packing Group:III  
DOT Hazard Technical Name:ETHANOL SOLUTION



DOT Subpart E Labeling Requirement:3  
IATA Shipping Name:ETHANOL SOLUTION  
IATA Hazard Class:3  
IATA UN Number:1170  
IATA Packing Group:III  
IATA Class:3  
RID/ADR:Packaging group: III  
RID/ADR Shipping Name:Description of goods: 1170 ETHANOL SOLUTION  
RID/ADR Dangerous Goods Code:(Kemler): 30  
RID/ADR UN Number:1170  
RID/ADR Class:3 (F1) Flammable liquids  
RID/ADR Warning Sign/Label:3  
CGVS/GGVE/IMDG Technical Name:Propper shipping name: ETHANOL SOLUTION  
CGVS/GGVE/IMDG UN or NA Identification Number:1170  
CGVS/GGVE/IMDG Class:3  
CGVS/GGVE/IMDG Packaging Group:III  
CGVS/GGVE/IMDG Subsidiary Risk Label:3  
EMS Number:F-E,S-D  
Maritime Pollutant:NO  
Air transport ICAO-TI:Propper shipping name: ETHANOL SOLUTION  
ICAO Class: 3  
UN/ID Number: 1170  
Label: 3  
Packaging group: III

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SECTION 15 : REGULATORY INFORMATION: (N/A)  
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Applies to All Ingredients :  
TSCA 8(b): Inventory Status:Medical devices are exempted from TSCA.  
Section 302:SARA Section 355 (extremely hazardous substances):  
None of the ingredients is listed.  
Section 313 Toxic Release Form:SARA Section 313 (specific toxic chemical listings):  
None of the ingredients is listed.  
State:Prop 65 - Chemicals known to cause cancer:  
None of the ingredients is listed.  
Risk Phrases:10 Flammable.  
20/22 Harmful by inhalation and if swallowed.  
37/38 Irritating to respiratory system and skin.  
41 Risk of serious damage to eyes.  
42/43 May cause sensitization by inhalation and skin contact.  
Safety Phrase:7/9 Keep container tightly closed and in a well-ventilated place.  
23 Do not breathe fumes  
24 Avoid contact with skin.  
26 In case of contact with eyes, rinse immediately with pler of water and seek medical advice.  
37/39 Wear suitable gloves and eye/face protection.  
45 In case of accident or if you feel unwell, seek medical advice immediately.

Agency): Cancerogenity categories:EPA (Environmental Protection

None of the ingredients is listed.

IARC (International Agency for Research on Cancer):  
amorphes Siliziumdioxid 3

NTP (National Toxicology Program):  
None of the ingredients is listed.

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:  
Xn Harmful

Hazard-determining components of labelling:  
2-hydroxyethyl methacrylate  
Glutaral  
4-methacryloxyethyltrimellitic acid anhydride  
Ethanol :

Cancerogenity categories:TLV (Threshold Limit Value  
established by ACGIH):  
Chemical Name: Ethanol  
CAS: 64-17-5  
A4

Glutaral :  
Cancerogenity categories:TLV (Threshold Limit Value  
established by ACGIH):  
Chemical Name: Glutaral  
CAS: 111-30-8  
A4

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SECTION 16 : ADDITIONAL INFORMATION: (N/A)  
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HMIS:  
Health Hazard:2  
Fire Hazard:3  
Reactivity:0

NFPA:  
Health:2  
Fire Hazard:3  
Reactivity:0

MSDS Revision Date:12/22/2008

\* Data compared to the previous version altered.  
MSDS Author: Department issuing MSDS: Safety department  
Contact: Dr. Thiele  
Tel.: (+49) 6181 35-3012  
Email: ruediger.thiele@heraeus.com  
NFPA ratings for USA (scale 0-4)  
HMIS-Ratings (Scale 0-4)  
HMIS Health: \*

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.
- 23/25 Toxic by inhalation and if swallowed.
- 34 Causes burns.
- 36 Irritating to eyes.
- 36/38 Irritating to eyes and skin.
- 42/43 May cause sensitization by inhalation and skin contact.
- 43 May cause sensitization by skin contact.
- 50 Very toxic to aquatic organisms.

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**Safety Data Sheet**  
**acc. to OSHA HCS**

Printing date 08/01/2018

Reviewed on 08/01/2018

## 1 Identification

· **Product identifier**

· **Trade name:** **iBOND Total Etch**

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

· **Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

Kulzer GmbH

Leipziger Straße 2, 63450 Hanau (Germany)

Tel.: +49 (0)800 4372522

· **Information department:**

Tel. +1 (800) 431-1785 Fax: +1 (800) 522-1545

e-mail: [customer.servicehna@kulzer-dental.com](mailto:customer.servicehna@kulzer-dental.com)

· **Emergency telephone number:**

Emergency CONTACT (24-Hour-Number)

GBK/Infotrac ID 105860: (domestic) 1 800 535 5053 or international (001) 352 323 3500

## 2 Hazard(s) identification

· **Classification of the substance or mixture**

Flam. Liq. 3 H226 Flammable liquid and vapor.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Dam. 1 H318 Causes serious eye damage.

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

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

· **Label elements**

· **GHS label elements**

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

· **Hazard pictograms**



GHS02 GHS05 GHS08

· **Signal word** Danger

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

2-hydroxyethyl methacrylate  
glutaral

4-methacryloxyethyltrimellitic acid anhydride

· **Hazard statements**

Flammable liquid and vapor.

Causes skin irritation.

Causes serious eye damage.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

· **Precautionary statements**

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

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

[In case of inadequate ventilation] wear respiratory protection.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

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

Immediately call a poison center/doctor.

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**Trade name: iBOND Total Etch**

- **Classification system**
- **NFPA ratings for USA (scale 0-4)**



- **HMS-Ratings (Scale 0-4)**

HEALTH	3	Health = *3
FIRE	3	Fire = 3
REACTIVITY	0	Reactivity = 0

- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

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### 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** -

- **Dangerous components:**

64-17-5	ethanol Flam. Liq. 2, H225	25-50%
868-77-9	2-hydroxyethyl methacrylate Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317	10-25%
	Poly(methacrylic-oligo-acrylic acid) Eye Irrit. 2A, H319	0-5%
70293-55-9	4-methacryloxyethyltrimellitic acid anhydride Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317	0-5%
112926-00-8	amorphous silica	0-5%
111-30-8	glutaral Acute Tox. 3, H301; Acute Tox. 3, H331; Resp. Sens. 1, H334; Skin Corr. 1B, H314; Skin Sens. 1, H317; Flam. Liq. 4, H227	0-5%

- **Additional information** For the wording of the listed hazard phrases refer to section 16.

### 4 First-aid measures

- **Description of 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.
- **After eye contact**  
Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing**  
Rinse out mouth and then drink plenty of water.  
Immediately call a doctor.  
If symptoms persist consult doctor.
- **Information for doctor**
- **Most important symptoms and effects, both acute and delayed**  
No further relevant information available.

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**Trade name: iBOND Total Etch**

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**· Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Fire-fighting measures

- **Extinguishing media**
  - **Suitable extinguishing agents**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
  - **For safety reasons unsuitable extinguishing agents** Water with full jet.
- **Special hazards arising from the substance or mixture**  
Can form explosive gas-air mixtures.  
Formation of toxic gases is possible during heating or in case of fire.
- **Advice for firefighters**
  - **Protective equipment:** Mount respiratory protective device.
- **Additional information** -

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**  
Do not allow to penetrate the ground/soil.  
No special measures required.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid binding material (diatomite, universal binders, for small amounts tissues).  
Send for recovery or disposal in suitable receptacles.
- **Reference to other sections**  
See Section 13 for disposal information.  
See Section 8 for information on personal protection equipment.
- 

### 7 Handling and storage

- **Handling**
  - **Precautions for safe handling**  
Keep receptacles tightly sealed.  
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.
- **Conditions for safe storage, including any incompatibilities**
  - **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).
- **Specific end use(s)** No further relevant information available.

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**Trade name: iBOND Total Etch**

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**8 Exposure controls/personal protection**

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

· **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

**111-30-8 glutaral**

REL	Short-term value: C 0.8 mg/m <sup>3</sup> , C 0.2 ppm
TLV	Short-term value: C 0.2 mg/m <sup>3</sup> , C 0.05 ppm
SEN	

**112926-00-8 amorphous silica**

PEL	Short-term value: 80 mg/m <sup>3</sup> as % SiO <sub>2</sub>
REL	6 mg/m <sup>3</sup>
TLV	10 mg/m <sup>3</sup> (e)

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **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.
- Do not inhale gases / fumes / aerosols.
- Avoid contact with the eyes and skin.

· **Breathing equipment:** Suitable respiratory protective device recommended.

· **Protection of hands:**

- If skin contact cannot be avoided, protective gloves are recommended to avoid possible sensitization.
- Solvent resistant gloves
- Check protective gloves prior to each use for their proper condition.

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

- Butyl rubber, BR
- Nitrile rubber, NBR

· **Eye protection:** Tightly sealed goggles.

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**Trade name: iBOND Total Etch**

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

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**9 Physical and chemical properties**

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

· **Form:**

Fluid

· **Color:**

Yellowish

· **Odor:**

Characteristic

· **Odor threshold:**

Not determined.

· **pH-value:**

Not determined.

· **Change in condition**

· **Melting point/Melting range:**

undetermined

· **Boiling point/Boiling range:**

undetermined

· **Flash point:**

24 °C (75.2 °F)

· **Flammability (solid, gaseous)**

Not applicable.

· **Ignition temperature:**

425 °C (797 °F)

· **Decomposition temperature:**

Not determined.

· **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 (42.8 mm Hg)

· **Density at 20 °C (68 °F):**

1 g/cm<sup>3</sup> (8.345 lbs/gal)

· **Relative density**

Not determined.

· **Vapor density**

Not determined.

· **Evaporation rate**

Not determined.

· **Solubility in / Miscibility with**

· **Water:**

Not miscible or difficult to mix

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity:**

· **dynamic:**

Not determined.

· **kinematic:**

Not determined.

· **Other information**

No further relevant information available.

**10 Stability and reactivity**

· **Reactivity** No further relevant information available.

· **Possibility of hazardous reactions** No dangerous reactions known

· **Conditions to avoid** No further relevant information available.

· **Incompatible materials:** No further relevant information available.

· **Hazardous decomposition products:** none

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**Trade name: iBOND Total Etch**

· **Additional information:** -

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**11 Toxicological information**

· **Information on toxicological effects**

· **Acute toxicity:**

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

**64-17-5 ethanol**

Oral	LD50	6200 mg/kg (rat)
Inhalative	LC50/4 h	95.6 mg/l (rat)

**41137-60-4 diurethandimethacrylate**

Oral	LD50	>5000 mg/kg (rat)
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**868-77-9 2-hydroxyethyl methacrylate**

Oral	LD50	5564 mg/kg (rat)
Dermal	LD50	>3000 mg/kg (can)

**Poly(methacrylic-oligo-acrylic acid)**

Oral	LD50	>5000 mg/kg (rat)
------	------	-------------------

**70293-55-9 4-methacryloxyethyltrimellitic acid anhydride**

Oral	LD50	> 2000 mg/kg (mouse)
Dermal	LD50	> 2000 mg/kg (mouse)

**72869-86-4 diurethandimethacrylate**

Oral	LD50	>5000 mg/kg (rat)
------	------	-------------------

· **Primary irritant effect:**

· **on the skin:** Irritant to skin and mucous membranes.

· **on the eye:** Strong irritant with the danger of severe eye injury.

· **Sensitization:**

Sensitization possible through inhalation.

Sensitization possible through skin contact.

· **Additional toxicological information:** Harmful

· **Carcinogenic categories**

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

112926-00-8 amorphous silica

3

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

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

None of the ingredients is listed.

**12 Ecological information**

· **Toxicity**

· **Aquatic toxicity:**

**868-77-9 2-hydroxyethyl methacrylate**

LC50/96h 227 mg/l (fish)

**72869-86-4 diurethandimethacrylate**

LC50/96h 10.1 mg/l (fish)

· **Persistence and degradability** No further relevant information available.

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- **Behavior in environmental systems:**
  - **Bioaccumulative potential** No further relevant information available.
  - **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
  - **General notes:** Avoid transfer into the environment.
- **Results of PBT and vPvB assessment**
  - **PBT:** Not applicable.
  - **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

**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**

- |   |                          |
|---|--------------------------|
| · <b>UN-Number</b>  |                          |
| · <b>DOT, ADR, IMDG, IATA</b>   | UN1170                   |
| · <b>UN proper shipping name</b>  |                          |
| · <b>DOT, IATA</b>  | Ethanol                  |
| · <b>ADR</b>  | 1170 Ethanol             |
| · <b>IMDG</b>   | ETHANOL (ETHYL ALCOHOL)  |
| · <b>Transport hazard class(es)</b>   |                          |
| · <b>DOT</b>  |                          |
|  |                          |
| · <b>Class</b>  | 3 Flammable liquids      |
| · <b>Label</b>  | 3                        |
| · <b>ADR</b>  |                          |
|  |                          |
| · <b>Class</b>  | 3 (F1) Flammable liquids |
| · <b>Label</b>  | 3                        |

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· <b>IMDG, IATA</b>	
	
· <b>Class</b>	3 Flammable liquids
· <b>Label</b>	3
· <b>Packing group</b>	
· <b>DOT, ADR, IMDG, IATA</b>	III
· <b>Environmental hazards:</b>	
· <b>Marine pollutant:</b>	No
· <b>Special precautions for user</b>	
· <b>Danger code (Kemler):</b>	Warning: Flammable liquids
· <b>EMS Number:</b>	30
· <b>Stowage Category</b>	F-E,S-D A
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	
	Not applicable.
· <b>Transport/Additional information:</b>	
	-
· <b>ADR</b>	
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	5L
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>UN "Model Regulation":</b>	
	UN 1170 ETHANOL, 3, III

**15 Regulatory information**

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**  
· Sara

· **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.

· **Proposition 65**  
· **Prop 65 - Chemicals known to cause cancer**  
None of the ingredients is listed.

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**· 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	A4
111-30-8	glutaral	A4

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

**· Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**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 phrases**

- H225 Highly flammable liquid and vapor.
- H227 Combustible liquid.
- H301 Toxic if swallowed.
- H314 Causes severe skin burns and eye damage.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H331 Toxic if inhaled.
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

**· Date of preparation / last revision** 08/01/2018 / 2

**· Abbreviations and acronyms:**

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- DOT: US Department of Transportation
- IATA: International Air Transport Association
- ACGIH: American Conference of Governmental Industrial Hygienists
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- NFPA: National Fire Protection Association (USA)
- HMS: Hazardous Materials Identification System (USA)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative
- NIOSH: National Institute for Occupational Safety
- OSHA: Occupational Safety & Health
- TLV: Threshold Limit Value
- PEL: Permissible Exposure Limit
- REL: Recommended Exposure Limit
- Flam. Liq. 2: Flammable liquids – Category 2
- Flam. Liq. 3: Flammable liquids – Category 3
- Flam. Liq. 4: Flammable liquids – Category 4

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*Acute Tox. 3: Acute toxicity – Category 3*  
*Skin Corr. 1B: Skin corrosion/irritation – Category 1B*  
*Skin Irrit. 2: Skin corrosion/irritation – Category 2*  
*Eye Dam. 1: Serious eye damage/eye irritation – Category 1*  
*Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A*  
*Resp. Sens. 1: Respiratory sensitisation – Category 1*  
*Skin Sens. 1: Skin sensitisation – Category 1*

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

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