**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

- **1.1 Product identifier**
  - Trade name: *Virtual Tray Adhesive*

- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
  - No further relevant information available.

- **1.3 Details of the supplier of the safety data sheet**
  - Manufacturer/Supplier:
    - Ivoclar Vivadent AG
    - Bendererstrasse 2
    - FL-9494 Schaan
    - PRINCIPALITY OF LIECHTENSTEIN
  - Tel: +423 235 35 35
  - Fax: +423 235 33 60

- **1.4 Emergency telephone number:** +423 / 235 33 13 (Ivoclar Vivadent AG, FL-9494 Schaan, Liechtenstein)

**SECTION 2: Hazards identification**

- **2.1 Classification of the substance or mixture**
  - Classification according to Regulation (EC) No 1272/2008
    - Flam. Liq. 3 H226 Flammable liquid and vapour.
    - Skin Irrit. 2 H315 Causes skin irritation.
    - Repr. 2 H361d Suspected of damaging the unborn child.
    - STOT SE 3 H336 May cause drowsiness or dizziness.
    - STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.
    - Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.

- **2.2 Label elements**
  - Labelling according to Regulation (EC) No 1272/2008
    - The product is classified and labelled according to the CLP regulation.

- **Hazard pictograms**
  - GHS02
  - GHS07
  - GHS08

- **Signal word** Danger

- **Hazard-determining components of labelling:**
  - toluene
  - ethylbenzene

- **Hazard statements**
  - H226 Flammable liquid and vapour.
  - H315 Causes skin irritation.
  - H361d Suspected of damaging the unborn child.
  - H336 May cause drowsiness or dizziness.
  - H373 May cause damage to organs through prolonged or repeated exposure.
  - H304 May be fatal if swallowed and enters airways.
Trade name: Virtual Tray Adhesive

- **Precautionary statements**
  - P201 Obtain special instructions before use.
  - P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
  - P280 Wear protective gloves/protective clothing/eye protection/face protection.
  - P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
  - P331 Do NOT induce vomiting.
  - P403+P233 Store in a well-ventilated place. Keep container tightly closed.

- **Additional information:**
  - Medical devices as defined in Directive 93/42/EEC and which are invasive or used in direct physical contact with the human body, are exempted from the provisions of Regulation (EC) No 1272/2008 (CLP/GHS) usually if they are in the finished state and intended for the final user.

- **2.3 Other hazards**

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

### SECTION 3: Composition/information on ingredients

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

<table>
<thead>
<tr>
<th>CAS</th>
<th>Description</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1330-20-7</td>
<td>xylene (Flam. Liq. 3, H226; Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Irrit. 2, H315)</td>
<td>25-50%</td>
</tr>
<tr>
<td>108-88-3</td>
<td>toluene (Flam. Liq. 2, H225; Repr. 2, H361d; STOT RE 2, H373; Asp. Tox. 1, H304; Skin Irrit. 2, H315; STOT SE 3, H336)</td>
<td>10-&lt;25%</td>
</tr>
<tr>
<td>67-63-0</td>
<td>propan-2-ol (Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336)</td>
<td>1-&lt;2.5%</td>
</tr>
</tbody>
</table>

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

### SECTION 4: First aid measures

- **4.1 Description of first aid measures**
  - **General information:**
    Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
  - **After inhalation:**
    Call a doctor immediately.
    Supply fresh air or oxygen; call for doctor.
    In case of unconsciousness place patient stably in side position for transportation.
  - **After skin contact:**
    Immediately rinse with water.
    If skin irritation continues, consult a doctor.
  - **After eye contact:**
    Rinse opened eye for several minutes under running water. Then consult a doctor.
  - **After swallowing:**
    Do not induce vomiting; call for medical help immediately.

- **4.2 Most important symptoms and effects, both acute and delayed**
  No further relevant information available.

- **4.3 Indication of any immediate medical attention and special treatment needed**
  If swallowed or in case of vomiting, danger of entering the lungs.
  Later observation for pneumonia and pulmonary oedema.
SECTION 5: Firefighting measures

5.1 Extinguishing media
- Suitable extinguishing agents: CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- For safety reasons unsuitable extinguishing agents: Water with full jet

5.2 Special hazards arising from the substance or mixture: No further relevant information available.

5.3 Advice for firefighters
- Protective equipment: Mouth respiratory protective device.
- Additional information: Cool endangered receptacles with water spray.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.

6.2 Environmental precautions: Do not allow to enter sewers/surface or ground water.

6.3 Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.

6.4 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.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Ensure good ventilation/exhaustion at the workplace. Prevent formation of aerosols.

Information about fire - and explosion protection:
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.

7.2 Conditions for safe storage, including any incompatibilities
- Storage:
  - Requirements to be met by storerooms and receptacles: Store in a cool location.
  - Information about storage in one common storage facility: Not required.
  - Further information about storage conditions:
    - Keep container tightly sealed.
    - Store in cool, dry conditions in well sealed receptacles.
    - Store receptacle in a well ventilated area.

7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

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

Ingredients with limit values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>CAS: 1330-20-7 xylene</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL: Short-term value: 441 mg/m³, 100 ppm</td>
</tr>
<tr>
<td>Long-term value: 220 mg/m³, 50 ppm</td>
</tr>
<tr>
<td>Sk; BMGV</td>
</tr>
</tbody>
</table>

CAS: 108-88-3 toluene

| WEL: Short-term value: 384 mg/m³, 100 ppm |
| Long-term value: 191 mg/m³, 50 ppm |
| Sk |

CAS: 67-63-0 propan-2-ol

| WEL: Short-term value: 1250 mg/m³, 500 ppm |
| Long-term value: 999 mg/m³, 400 ppm |

Ingredients with biological limit values:

CAS: 1330-20-7 xylene

| BMGV 650 mmol/mol creatinine |
| Medium: urine |
| Sampling time: post shift |
| Parameter: methyl hippuric acid |

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

8.2 Exposure controls

Personal protective equipment:

General protective and hygienic measures:
Usual hygienic measures for dental practice and dental laboratories.
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.

Respiratory protection:
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Recommended filter device for short term use:
Filter A1
Filter A2
Filter A3

Protection of hands:

Protective gloves

After use of gloves apply skin-cleaning agents and skin cosmetics.

Material of gloves
Fluorocarbon rubber (Viton)
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.
**SECTION 9: Physical and chemical properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Fluid</td>
</tr>
<tr>
<td>Colour</td>
<td>Light blue</td>
</tr>
<tr>
<td>Odour</td>
<td>Characteristic</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not determined</td>
</tr>
<tr>
<td>pH-value</td>
<td>Not determined</td>
</tr>
<tr>
<td>Melting point/Melting range</td>
<td>Undetermined</td>
</tr>
<tr>
<td>Boiling point/Boiling range</td>
<td>113 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>27 °C</td>
</tr>
<tr>
<td>Self-igniting</td>
<td>Product is not selfigniting</td>
</tr>
<tr>
<td>Danger of explosion</td>
<td>Product is not explosive. However, formation of explosive air/vapour mixtures are possible.</td>
</tr>
<tr>
<td>Explosion limits</td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>1.0 Vol %</td>
</tr>
<tr>
<td>Upper</td>
<td>7.8 Vol %</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not determined</td>
</tr>
<tr>
<td>Density at 20 °C</td>
<td>1.011 g/cm³</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not determined</td>
</tr>
<tr>
<td>Vapour density</td>
<td>Not determined</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not determined</td>
</tr>
<tr>
<td>Solubility in / Miscibility with water</td>
<td>Partly miscible</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>Not determined</td>
</tr>
<tr>
<td>Viscosity</td>
<td></td>
</tr>
<tr>
<td>Dynamic</td>
<td>Not determined</td>
</tr>
<tr>
<td>Kinematic</td>
<td>Not determined</td>
</tr>
<tr>
<td>9.2 Other information</td>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>

**SECTION 10: Stability and reactivity**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1 Reactivity</td>
<td>No further relevant information available.</td>
</tr>
<tr>
<td>10.2 Chemical stability</td>
<td>Stable under normal handling and storage conditions.</td>
</tr>
<tr>
<td>Thermal decomposition / conditions to be avoided</td>
<td>No decomposition if used according to specifications.</td>
</tr>
<tr>
<td>10.3 Possibility of hazardous reactions</td>
<td>Product is not explosive. However, formation of explosive air/vapour mixtures are possible.</td>
</tr>
<tr>
<td>10.4 Conditions to avoid</td>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>
 SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
Based on available data, the classification criteria are not met.

LD/LC50 values relevant for classification:

<table>
<thead>
<tr>
<th>CAS</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>1330-20-7 xylene</td>
<td>4300 mg/kg (rat)</td>
<td>2000 mg/kg (rabbit)</td>
</tr>
<tr>
<td>108-88-3 toluene</td>
<td>5000 mg/kg (rat)</td>
<td>12124 mg/kg (rabbit)</td>
</tr>
<tr>
<td>100-41-4 ethylbenzene</td>
<td>3500 mg/kg (rat)</td>
<td>17800 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation
Causes skin irritation.

Serious eye damage/irritation
Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation
Based on available data, the classification criteria are not met.

Additional toxicological information:
No further relevant information available.

Germ cell mutagenicity
Based on available data, the classification criteria are not met.

Carcinogenicity
Based on available data, the classification criteria are not met.

Reproductive toxicity
Suspected of damaging the unborn child.

STOT-single exposure
May cause drowsiness or dizziness.

STOT-repeated exposure
May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard
May be fatal if swallowed and enters airways.

 SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity: No further relevant information available.

12.2 Persistence and degradability
No further relevant information available.

12.3 Bioaccumulative potential
No further relevant information available.

12.4 Mobility in soil
No further relevant information available.

Additional ecological information:

General notes:
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.

12.5 Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.
Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 23.03.2017               Version number 7               Revision: 19.01.2017

Trade name: Virtual Tray Adhesive

12.6 Other adverse effects
No further relevant information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Recommendation
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Uncleaned packaging:
Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information

14.1 UN-Number
ADR, RID, ADN, IMDG, IATA
UN1133

14.2 UN proper shipping name
ADR/RID/ADN
1133 ADHESIVES
IMDG, IATA
ADHESIVES

14.3 Transport hazard class(es)
ADR/RID/ADN

Class
3 (F1) Flammable liquids.
Label
3

IMDG, IATA

Class
3 Flammable liquids.
Label
3

14.4 Packing group
ADR, RID, ADN, IMDG, IATA
III

14.5 Environmental hazards:
Marine pollutant:
No

14.6 Special precautions for user
Warning: Flammable liquids.
Danger code (Kemler):
30
EMS Number:
F-E,S-D
Stowage Category
A

14.7 Transport in bulk according to Annex II of
Marpol and the IBC Code
Not applicable.

(Contd. on page 8)
**SECTION 15: Regulatory information**

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3, 48

- **National regulations:**
  - Other regulations, limitations and prohibitive regulations
    The product is a medical device according to the Directive 93/42/EEC.
  - **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**SECTION 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.

- **Relevant phrases**
  - H225 Highly flammable liquid and vapour.
  - H226 Flammable liquid and vapour.
  - H304 May be fatal if swallowed and enters airways.
  - H312 Harmful in contact with skin.
  - H315 Causes skin irritation.
  - H319 Causes serious eye irritation.
  - H332 Harmful if inhaled.
  - H336 May cause drowsiness or dizziness.
  - H361d Suspected of damaging the unborn child.
  - H373 May cause damage to organs through prolonged or repeated exposure.

- **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
  - IATA: International Air Transport Association
  - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  - 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)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - Flam. Liq. 2: Flammable liquids – Category 2
Trade name: Virtual Tray Adhesive

- Flam. Liq. 3: Flammable liquids – Category 3
- Acute Tox. 4: Acute toxicity – Category 4
- Skin Irrit. 2: Skin corrosion/irritation – Category 2
- Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
- Repr. 2: Reproductive toxicity – Category 2
- STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
- STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
- Asp. Tox. 1: Aspiration hazard – Category 1

* Data compared to the previous version altered.