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

1. **Product identifier**
   - Trade name: Variolink Esthetic DC (Catalyst)

2. **Relevant identified uses of the substance or mixture and uses advised against**
   - No further relevant information available.
   - Application of the substance / the mixture: Dual-curing resin-based dental luting material

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
   - Further information obtainable from:
     - Regulatory Affairs
     - sds@ivoclarvivadent.com

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

**SECTION 2: Hazards identification**

1. **Classification of the substance or mixture**
   - Classification according to Regulation (EC) No 1272/2008
     - Skin Irrit. 2 H315 Causes skin irritation.
     - Eye Irrit. 2 H319 Causes serious eye irritation.
     - Skin Sens. 1 H317 May cause an allergic skin reaction.
     - STOT SE 3 H335 May cause respiratory irritation.

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

3. **Hazard pictograms**
   - GHS07

   **Signal word** Warning

   **Hazard-determining components of labelling:**
   - urethane dimethacrylate
   - ytterbium trifluoride
   - 1,10-decanediol dimethacrylate

   **Hazard statements**
   - H315 Causes skin irritation.
   - H319 Causes serious eye irritation.
   - H317 May cause an allergic skin reaction.
   - H335 May cause respiratory irritation.

   **Precautionary statements**
   - P280 Wear protective gloves/protective clothing/eye protection/face protection.
   - P363 Wash contaminated clothing before reuse.
   - P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

(Contd. on page 2)
SECTION 3: Composition/information on ingredients

3.2 Chemical characterisation: Mixtures

Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components:

<table>
<thead>
<tr>
<th>CAS</th>
<th>EINECS</th>
<th>Name</th>
<th>Hazard Statements</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>13760-80-0</td>
<td>237-354-2</td>
<td>ytterbium trifluoride</td>
<td>Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335</td>
<td>10–&lt;25%</td>
</tr>
<tr>
<td>72869-86-4</td>
<td>276-957-5</td>
<td>urethane dimethacrylate</td>
<td>Eye Irrit. 2, H319; Skin Sens. 1, H317; Aquatic Chronic 3, H412</td>
<td>3–&lt;10%</td>
</tr>
<tr>
<td>6701-13-9</td>
<td>229-745-1</td>
<td>1,10-decadiol dimethacrylate</td>
<td>Eye Irrit. 2, H319; Skin Sens. 1, H317</td>
<td>3–&lt;10%</td>
</tr>
<tr>
<td>80-15-9</td>
<td>201-254-7</td>
<td>α,α'-dimethylbenzyl hydroperoxide</td>
<td>Org. Perox. EF, H242; Acute Tox. 3, H331; STOT RE 2, H373; Skin Corr. 1B, H314; Aquatic Chronic 2, H411; Acute Tox. 4, H302; Acute Tox. 4, H312</td>
<td>1–&lt;2.5%</td>
</tr>
</tbody>
</table>

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

SECTION 4: First aid measures

4.1 Description of 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:
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:
Rinse out mouth and then drink plenty of water.
If symptoms persist consult doctor.

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
No further relevant information available.

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.
Trade name: Variolink Esthetic DC (Catalyst)

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

5.3 Advice for firefighters
Protective equipment: No special measures required.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Not required.

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

6.3 Methods and material for containment and cleaning up: Pick up mechanically.

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
Only adequately trained personnel should handle this product.
For use in dentistry only.

Information about fire - and explosion protection: No special measures required.

7.2 Conditions for safe storage, including any incompatibilities
Storage:

Requirements to be met by storerooms and receptacles: Store only in the original receptacle.

Information about storage in one common storage facility: Not required.

Further information about storage conditions:
Protect from exposure to the light.
Protect from heat and direct sunlight.
Keep container tightly sealed.

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

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
Ingredients 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 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.
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
Respiratory protection: Not required.
Protection of hands:
Protective gloves
40.1.5

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. After use of gloves apply skin-cleaning agents and skin cosmetics.

- **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.

- **Not suitable are gloves made of the following materials:**
  Commercial medical gloves do not provide protection against the sensitizing effect of methacrylates.

- **Eye protection:** Safety glasses

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### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

- **General Information**
  - **Appearance:** Pasty
  - **Colour:** According to product specification
  - **Odour:** Characteristic
  - **Odour threshold:** Not determined.
  - **pH-value:** Not applicable.

- **Change in condition**
  - Melting point/Melting range: Undetermined.
  - Boiling point/Boiling range: Undetermined.

- **Flash point:** Not applicable.

- **Flammability (solid, gaseous):** Not determined.

- **Self-igniting:** Product is not selfigniting.

- **Danger of explosion:** Product does not present an explosion hazard.

- **Explosion limits:**
  - Lower: Not determined.
  - Upper: Not determined.

- **Vapour pressure:** Not applicable.

- **Density at 20 °C:** 1.8705 g/cm³
  - Relative density: Not determined.
  - Vapour density: Not applicable.
  - Evaporation rate: Not applicable.

- **Solubility in / Miscibility with water:** Nearly insoluble.

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

- **Viscosity:**
  - Dynamic: Not applicable.
  - Kinematic: Not applicable.
SECTION 10: Stability and reactivity

- 10.1 Reactivity No further relevant information available.
- 10.2 Chemical stability Stable under normal handling and storage conditions.
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- 10.3 Possibility of hazardous reactions No dangerous reactions known.
- 10.4 Conditions to avoid
  - Protect from exposure to the light.
  - Keep away from heat and direct sunlight.
- 10.5 Incompatible materials: No further relevant information available.
- 10.6 Hazardous decomposition products: None under normal conditions of storage and use.

SECTION 11: Toxicological information

- 11.1 Information on toxicological effects
- Acute toxicity:
  - LD/LC50 values relevant for classification:
    - 80-15-9 a,a'-dimethylbenzyl hydroperoxide
    
    | Route   | LD50/LC50    |
    |---------|--------------|
    | Oral    | 382 mg/kg (rat) |
    | Dermal  | 500 mg/kg (rat)  |
    | Inhalative | 220 mg/l (rat)   |
  - Primary irritant effect:
    - on the skin: Irritant to skin and mucous membranes.
    - on the eye: Irritating effect.
    - Sensitisation: Sensitisation possible through skin contact.
  - Additional toxicological information: No further relevant information available.

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 1 (German Regulation) (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.
  - 12.5 Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.
  - 12.6 Other adverse effects No further relevant information available.
SECTION 13: Disposal considerations

13.1 Waste treatment methods
Recommendation
Take to an approved landfill or a waste incineration plant, under conditions approved by the local authority.

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

SECTION 14: Transport information

14.1 UN-Number
ADR, ADN, IMDG, IATA
Void

14.2 UN proper shipping name
ADR, ADN, IMDG, IATA
Void

14.3 Transport hazard class(es)
ADR, ADN, IMDG, IATA
Class
Void

14.4 Packing group
ADR, IMDG, IATA
Void

14.5 Environmental hazards:
Marine pollutant:
No

14.6 Special precautions for user
Not applicable.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable.

Transport/Additional information:
Product is not classified as a dangerous good for transport (ADR, IMDG, IATA).

UN "Model Regulation":
- 

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
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
H242 Heating may cause a fire.
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
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.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

**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
Org. Perox. EF: Organic Peroxides, Types E, F
Acute Tox. 4: Acute toxicity, Hazard Category 4
Acute Tox. 3: Acute toxicity, Hazard Category 3
Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2
Aquatic Chronic 2: Hazardous to the aquatic environment - Chronic Hazard, Category 2
Aquatic Chronic 3: Hazardous to the aquatic environment - Chronic Hazard, Category 3

* Data compared to the previous version altered.