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

- **1.1 Product identifier**
  - **Trade name:** SR Spectra Opaquer Liquid

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

- **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
  - **Further information obtainable from:**
    - Regulatory Affairs
    - sds@ivoclarvivadent.com
  - **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. 2  H225  Highly flammable liquid and vapour.
    - 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.
    - Aquatic Chronic 3  H412  Harmful to aquatic life with long lasting effects.

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

- **2.3 Hazard pictograms**
  - GHS02
  - GHS07

- **Signal word** Danger

- **Hazard-determining components of labelling:**
  - methyl methacrylate
  - urethane dimethacrylate

- **Hazard statements**
  - H225 Highly flammable liquid and vapour.
  - H315 Causes skin irritation.
  - H319 Causes serious eye irritation.
  - H317 May cause an allergic skin reaction.
  - H335 May cause respiratory irritation.
  - H412 Harmful to aquatic life with long lasting effects.

(Contd. on page 2)
Trade name: SR Spectra Opaquer Liquid

- Precautionary statements
  - P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
  - P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
  - 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.
  - P337+P313 If eye irritation persists: Get medical advice/attention.

- Other hazards
  - Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

- Description: Mixture of substances listed below with nonhazardous additions.

<table>
<thead>
<tr>
<th>Dangerous components</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS: 80-62-6</td>
<td>methyl methacrylate</td>
</tr>
<tr>
<td>EINECS: 201-297-1</td>
<td>Flamm. Liq. 2; H225; Skin Irrit. 2; H333; Skin Sens. 1; H317; STOT SE 3, H335</td>
</tr>
<tr>
<td>CAS: 72869-86-4</td>
<td>urethane dimethacrylate</td>
</tr>
<tr>
<td>EINECS: 276-957-5</td>
<td>Eye Irrit. 2; H319; Skin Sens. 1; H317; Aquatic Chronic 3, H412</td>
</tr>
<tr>
<td>CAS: 10373-78-1</td>
<td>camphorquinone</td>
</tr>
<tr>
<td></td>
<td>Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335</td>
</tr>
</tbody>
</table>

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

SECTION 4: First aid measures

- 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: Immediately rinse with water.
  - 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.
    - Do not induce vomiting; call for medical help immediately.

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

SECTION 5: Firefighting measures

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

- Advice for firefighters
  - Protective equipment: No special measures required.
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).
  Ensure adequate ventilation.
  Do not flush with water or aqueous cleansing agents.

- 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.
  Ensure good ventilation/exhaustion at the workplace.

- 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 only in the original receptacle.
      Store in a cool location.
    - Information about storage in one common storage facility: Store away from oxidising agents.
    - Further information about storage conditions:
      Store receptacle in a well ventilated area.
      Keep container tightly sealed.
  - 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:
  - 80-62-6 methyl methacrylate
    - WEL: Short-term value: 416 mg/m³, 100 ppm
    - Long-term value: 208 mg/m³, 50 ppm

- 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.
      Immediately remove all soiled and contaminated clothing

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**Safety data sheet**
according to 1907/2006/EC, Article 31

Printing date 29.04.2015  
Revision: 18.04.2015  
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- **Wash hands before breaks and at the end of work.**
- **Do not inhale gases / fumes / aerosols.**
- **Avoid contact with the eyes and skin.**

- **Respiratory protection:**
  - Use suitable respiratory protective device in case of insufficient ventilation.
  - Filter A

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

- **Eye protection:**
  - **Tightly sealed goggles**

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**SECTION 9: Physical and chemical properties**

- **9.1 Information on basic physical and chemical properties**
- **General Information**
  - **Appearance:**
    - **Form:** Fluid
    - **Colour:** Colourless
    - **Odour:** Pungent
    - **Odour threshold:** Not determined.
  - **pH-value:** Not determined.

  - **Change in condition**
    - **Melting point/Melting range:** Undetermined.
    - **Boiling point/Boiling range:** 101 °C

  - **Flash point:** 10 °C

  - **Ignition temperature:** 430 °C

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Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 29.04.2015  Revision: 18.04.2015  Version number 5

Trade name: SR Spectra Opaquer Liquid

- Self-igniting: Product is not self-igniting.
- Danger of explosion: Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
- Explosion limits:
  - Lower: 2.1 Vol %
  - Upper: 12.5 Vol %
- Vapour pressure at 20 °C: 47 hPa
- Density: Not determined.
  - Relative density: Not determined.
  - Vapour 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.
- 9.2 Other information: No further relevant information available.

SECTION 10: Stability and reactivity

- 10.1 Reactivity: No further relevant information available.
- 10.2 Chemical stability: Stable under normal handling and storage conditions.
- 10.3 Possibility of hazardous reactions:
  - Forms explosive gas mixture with air.
  - Reacts with strong oxidising agents.
  - Exothermic polymerisation.
- 10.4 Conditions to avoid: No further relevant information available.
- 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:
    - 80-62-6 methyl methacrylate
      - Oral LD50 7872 mg/kg (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.

(Contd. on page 6)
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.
  - **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.
  - **European waste catalogue**
    - 18 01 06* chemicals consisting of or containing dangerous substances
  - **Uncleaned packaging:**
    - **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

- **14.1 UN-Number**
  - ADR, IMDG, IATA 1247
- **14.2 UN proper shipping name**
  - ADR 1247 METHYL METHACRYLATE MONOMER, STABILIZED
  - IMDG, IATA METHYL METHACRYLATE MONOMER, STABILIZED
- **14.3 Transport hazard class(es)**
  - **ADR**
    - Class 3 (F1) Flammable liquids.
    - Label 3
  - **IMDG, IATA**
    - Class 3 Flammable liquids.
Trade name: SR Spectra Opaquer Liquid

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- Label 3

- 14.4 Packing group
  ADR, IMDG, IATA II

- 14.5 Environmental hazards:
  Marine pollutant: No

- 14.6 Special precautions for user
  Warning: Flammable liquids.
  Danger code (Kemler): 33
  EMS Number: F-E,S-E

- 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

- Transport/Additional information:

  - ADR
    - Limited quantities (LQ): LQ4
    - Transport category: 2
    - Tunnel restriction code: D/E
  - UN "Model Regulation": UN1247, METHYL METHACRYLATE MONOMER, STABILIZED, 3, II

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
  H225 Highly flammable liquid and vapour.
  H315 Causes skin irritation.
  H317 May cause an allergic skin reaction.
  H319 Causes serious eye irritation.
  H335 May cause respiratory irritation.
  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
  Flam. Liq. 2: Flammable liquids, Hazard Category 2
  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

(Contd. on page 8)
### Trade name: SR Spectra Opaquer Liquid

- **STOT SE 3**: Specific target organ toxicity - Single exposure, Hazard Category 3
- **Aquatic Chronic 3**: Hazardous to the aquatic environment - Chronic Hazard, Category 3

* Data compared to the previous version altered.