1 Identification

· Product identifier
  · Trade name: Elektra
  · Relevant identified uses of the substance or mixture and uses advised against
    No further relevant information available.
  · Application of the substance / the mixture
    Manufacture of dental prothesis
  · Details of the supplier of the safety data sheet
    Manufacturer/Supplier:
    Ivoclar Vivadent Inc.
    175 Pineview Drive, Amherst, N.Y. 14228
    USA
    Tel. +1 800 533 6825
    Fax +1 716 691 2285
    Ivoclar Vivadent Inc.
    1-6600 Dixie Road
    Mississauga, Ontario
    L5T 2Y2
    Canada
    Phone: +1 905 670 8499
    Fax: +1 905 670 3102
  · Information department: Quality Assurance / Regulatory Affairs
  · Emergency telephone number:
    24 Hour Emergency Assistance:
    Emergency-Call USA - Infotrac: 1-800-535-5053
    Emergency-Call Canada - Canutec: 1-613-996-6666
    General SDS Assistance:
    US: 1-800-533-6825
    Canada: 1-800-263-8182

2 Hazard(s) identification

· Classification of the substance or mixture
  Ox. Sol. 2 H272 May intensify fire; oxidizer.
  · Label elements
  · GHS label elements
    The product is classified and labeled according to the Globally Harmonized System (GHS).
  · Hazard pictograms
    GHS03
  · Signal word Danger
  · Hazard statements
    May intensify fire; oxidizer.
  · Precautionary statements
    Keep away from heat.
    Take any precaution to avoid mixing with combustibles.
    Wear protective gloves / eye protection / face protection.
    Keep/Store away from clothing/combustible materials.
(Contd. on page 2)
In case of fire: Use for extinction: CO2, powder or water spray. Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Additional information:** Alloys do not require a label, providing they do not present a hazard to human health by inhalation, ingestion or contact with skin or to the aquatic environment in the form in which they are placed on the market.

- **Classification system:**
  - **NFPA ratings (scale 0 - 4)**
    - Health = 0
    - Fire = 0
    - Reactivity = 0
  - **HMIS-ratings (scale 0 - 4)**
    - Health = 0
    - Fire = 0
    - Reactivity = 0

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

### 3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Dental alloy

  - **Dangerous components:**
    - 7440-22-4 **silver** 50-100%
    - 7440-05-3 **palladium** ≤25%
    - 7440-50-8 **copper** 10-<25%
    - 7440-74-6 **indium** 1-<2.5%

### 4 First-aid measures

- **Description of first aid measures**
- **General information:** No special measures required.
- **After inhalation:**
  - Grinding dust: Supply fresh air; consult doctor in case of complaints.
  - In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** After contact with the molten product, cool rapidly with cold water.
- **After eye contact:**
  - Grinding dust: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
  - Mechanical effects only.
- **After swallowing:** Seek medical treatment.
- **Information for doctor:**
  - **Most important symptoms and effects, both acute and delayed** No further relevant information available.
  - **Indication of any immediate medical attention and special treatment needed** No further relevant information available.
5 Fire-fighting measures

- **Extinguishing media**
  - Suitable extinguishing agents: The product is not flammable.

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

- **Advice for firefighters**
  - **Protective equipment**: Do not inhale explosion gases or combustion gases.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.

- **Environmental precautions**: No special measures required.

- **Methods and material for containment and cleaning up**: Pick up mechanically.

- **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.

7 Handling and storage

- **Handling**
  - Precautions for safe handling
    - Extractors are required on all machines used for thermal processing or splinter removal processes.

- **Information about protection against explosions and fires**: No special measures required.

- **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**: None.

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

8 Exposure controls/personal protection

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

- **Control parameters**

<table>
<thead>
<tr>
<th>Component</th>
<th>PEL Long-term value</th>
<th>REL Long-term value</th>
<th>TLV Long-term value</th>
</tr>
</thead>
<tbody>
<tr>
<td>7440-22-4 silver</td>
<td>0.01 mg/m³</td>
<td>0.01 mg/m³</td>
<td>0.1 mg/m³ metal: dust and fume</td>
</tr>
<tr>
<td>7440-50-8 copper</td>
<td>1* 0.1** mg/m³ as Cu *dusts and mists **fume</td>
<td>1* 0.1** mg/m³ as Cu *dusts and mists **fume</td>
<td>1* 0.2** mg/m³ *dusts and mists; **fume; as Cu</td>
</tr>
</tbody>
</table>
7440-74-6 indium

- REL Long-term value: 0.1 mg/m³ as In
- TLV Long-term value: 0.1 mg/m³ as In

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

- Exposure controls
- Personal protective equipment:
  - General protective and hygienic measures: Usual hygienic measures for dental practice.
  - Breathing equipment: Use respiratory protective device against the effects of fumes/dust/aerosol.
  - Protection of hands: Protective gloves should always be worn during mechanical and thermal processing. After use of gloves apply skin-cleaning agents and skin cosmetics.
  - Material of gloves
    - Mechanical processing:
      - Leather gloves
      - Strong gloves
    - Thermal processing:
      - Heat protection gloves

- 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.

- Eye protection:
  Always wear safety goggles during mechanical processing (grinding, sawing/cutting, drilling, milling).

9 Physical and chemical properties

- Information on basic physical and chemical properties
- General Information
- Appearance:
  - Form: Solid
  - Color: White
- Odor: Odorless
- Odour threshold: Not determined.
- pH-value: Not applicable.

- Change in condition
  - Melting point/Melting range: 865 – 990 °C (1589 – 1814 °F)
  - Boiling point/Boiling range: Undetermined.

- Flash point: Not applicable.

- Flammability (solid, gaseous): Not determined.

- Auto igniting: Product is not selfigniting.

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

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

- Vapor pressure: Not applicable.

- Density at 20 °C (68 °F): 10.4 g/cm³ (86.788 lbs/gal)
- Relative density Not determined.
40.1.5

· Vapour density
  Not applicable.

· Evaporation rate
  Not applicable.

· Solubility in / Miscibility with Water
  Insoluble.

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

· Viscosity:
  Dynamic: Not applicable.
  Kinematic: Not applicable.

· Solvent content:
  Solids content: 100 %

· Other information
  No further relevant information available.

10 Stability and reactivity

· Reactivity
  No further relevant information available.

· Chemical stability
  Stable under normal handling and storage conditions.

· Thermal decomposition / conditions to be avoided
  No decomposition if used according to specifications.

· 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 under normal conditions of storage and use.

11 Toxicological information

· Information on toxicological effects
  · Acute toxicity:
  · Primary irritant effect:
  · on the skin: No irritant effect.
  · on the eye: No irritating effect.
  · Sensitization: No sensitizing effects known.
  · Additional toxicological information:
    Fumes or dusts generated from cutting or grinding operations may cause respiratory irritation.

· Carcinogenic categories
  · 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: No further relevant information available.
  · Persistence and degradability: No further relevant information available.
  · Behavior in environmental systems:
  · Bioaccumulative potential: No further relevant information available.
  · Mobility in soil: No further relevant information available.
  · Additional ecological information:
  · General notes: Generally not hazardous for water
13 Disposal considerations

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

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

14 Transport information

- UN-Number
  - DOT NA3077
  - ADR, ADN, IMDG, IATA Void

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

- Transport hazard class(es)
  - DOT
    - Class 9 Miscellaneous dangerous substances and articles
    - Label 9
  - ADR, ADN, IMDG, IATA Void

- Packing group
  - DOT III
  - ADR, IMDG, IATA Void

- Environmental hazards:
  - Marine pollutant: No

- Special precautions for user: Not applicable.

- Transport in bulk according to Annex II of MARPOL73/78 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": -

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture

- Sara

  - Section 355 (extremely hazardous substances):
    - None of the ingredients is listed.
Trade name: Elektra

- **Section 313 (Specific toxic chemical listings):**
  
<table>
<thead>
<tr>
<th>Chemical ID</th>
<th>Chemical Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>7440-22-4</td>
<td>silver</td>
</tr>
<tr>
<td>7440-50-8</td>
<td>copper</td>
</tr>
</tbody>
</table>

- **TSCA (Toxic Substances Control Act):**
  
<table>
<thead>
<tr>
<th>Chemical ID</th>
<th>Chemical Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>7440-57-5</td>
<td>Gold</td>
</tr>
<tr>
<td>7440-22-4</td>
<td>silver</td>
</tr>
<tr>
<td>7440-50-8</td>
<td>copper</td>
</tr>
<tr>
<td>7440-06-4</td>
<td>platinum</td>
</tr>
<tr>
<td>7440-74-6</td>
<td>indium</td>
</tr>
<tr>
<td>7439-88-5</td>
<td>iridium</td>
</tr>
</tbody>
</table>

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

- **Carcinogenic categories**
  
<table>
<thead>
<tr>
<th>Chemical ID</th>
<th>Chemical Name</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>7440-22-4</td>
<td>silver</td>
<td>D</td>
</tr>
<tr>
<td>7440-50-8</td>
<td>copper</td>
<td>D</td>
</tr>
</tbody>
</table>

- **TLV (Threshold Limit Value established by ACGIH)**
  
  None of the ingredients is listed.

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

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

- **Hazard pictograms**
  
  GHS03

- **Signal word** Danger

- **Hazard statements**
  
  May intensify fire; oxidizer.

- **Precautionary statements**
  
  Keep away from heat.
  
  Take any precaution to avoid mixing with combustibles.
  
  Wear protective gloves / eye protection / face protection.
  
  Keep/Store away from clothing/combustible materials.
  
  In case of fire: Use for extinction: CO2, powder or water spray.
  
  Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 8)
Trade name: Elektra

National regulations:
Other regulations, limitations and prohibitive regulations
The product is a medical device according to the Directive 93/42/EEC.
This product is classified as a medical device under US and Canadian regulations and has been reviewed by the US Food and Drug Administration and Health Canada.

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

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.

Date of preparation / last revision 06/23/2015 / 4

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)
HMIS: Hazardous Materials Identification System (USA)
Ox. Sol. 2: Oxidising Solids, Hazard Category 2
* Data compared to the previous version altered.