1 Identification of the substance/mixture and of the company/undertaking

- 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 preparation
  Manufacture of dental prosthesis

- 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 MSDS Assistance:
  US: 1-800-533-6825
  Canada: 1-800-263-8182

2 Hazards identification

- Classification of the substance or mixture
  Ox. Sol. 2 H272 May intensify fire; oxidizer.

- Classification according to Directive 67/548/EEC or Directive 1999/45/EC
  Oxidizing
  Contact with combustible material may cause fire.

- Information concerning particular hazards for human and environment:
  Avoid breathing of grinding dust and vapours. Melted material may cause burns.

- Classification system:
  The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

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

- Hazard pictograms

  GHS03

- Signal word Danger

(Contd. on page 2)
Safety Data Sheet
acc. to ISO/DIS 11014

Trade name: Elektra

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

- **Precautionary statements**
  - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
  - Take any precaution to avoid mixing with combustibles.
  - Wear protective gloves/protective clothing/eye protection/face protection.
  - Keep/Store away from clothing/combustible materials.
  - In case of fire: Use for extinguition: 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 25-100%
  - 7440-05-3 palladium 25-25%
  - 7440-50-8 copper 10-<25%
  - 7440-74-6 indium 1-<2.5%

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### 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.

(Contd. on page 3)
35.0.51

- 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 Firefighting 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>Components with limit values that require monitoring at the workplace:</th>
</tr>
</thead>
<tbody>
<tr>
<td>7440-22-4 silver</td>
</tr>
<tr>
<td>PEL ( ) 0.01 mg/m³ metal and soluble compounds (as Ag)</td>
</tr>
<tr>
<td>REL ( ) 0.01 mg/m³</td>
</tr>
<tr>
<td>TLV ( ) 0.1 mg/m³ metal: dust and fume</td>
</tr>
</tbody>
</table>
### Trade name: Elektra

<table>
<thead>
<tr>
<th>7440-50-8 copper</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PEL</strong> (*dusts and mists)</td>
<td>1* 0.1** mg/m³ as Cu**</td>
</tr>
<tr>
<td><strong>REL</strong> (*dusts and mists)</td>
<td>1* 0.1** mg/m³ as Cu**</td>
</tr>
<tr>
<td><strong>TLV</strong> (*dusts and mists)</td>
<td>1* 0.2** mg/m³ as Cu**</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7440-74-6 indium</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REL</strong></td>
<td>0.1 mg/m³ and compounds, as In</td>
</tr>
<tr>
<td><strong>TLV</strong></td>
<td>0.1 mg/m³</td>
</tr>
</tbody>
</table>

- **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.

- **Material of gloves**

  - Mechanical processing:

    - Leather gloves
    - Strong gloves
  
  - Thermal processing:

    - Heat protection gloves

- **Penetration time of glove material**

  The exact breakthrough 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.
**Trade name: Elektra**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Danger of explosion:</strong></td>
<td>Product does not present an explosion hazard.</td>
</tr>
<tr>
<td><strong>Explosion limits:</strong></td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Upper</td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Vapor pressure:</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Density at 20 °C (68 °F):</strong></td>
<td>10.4 g/cm³ (86.788 lbs/gal)</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Vapour density</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Solubility in / Miscibility with Water:</strong></td>
<td>Insoluble.</td>
</tr>
<tr>
<td><strong>Partition coefficient (n-octanol/water):</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Viscosity:</strong></td>
<td></td>
</tr>
<tr>
<td>Dynamic</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Kinematic</td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Solvent content:</strong></td>
<td></td>
</tr>
<tr>
<td>Solids content</td>
<td>100 %</td>
</tr>
<tr>
<td>Other information</td>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>

### 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.
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.
- **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:**
    - 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**
    - Class: Void
- **Packing group**
  - **DOT**
    - ADR, IMDG, IATA: III
    - Class: 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.
**Safety Data Sheet**

acc. to ISO/DIS 11014

Printing date 12/17/2012  
Reviewed on 12/17/2012  
Version number 4

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**Trade name:** Elektra

(Contd. of page 6)

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**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.

  - **Section 313 (Specific toxic chemical listings):**
    
    - 7440-22-4 silver
    - 7440-50-8 copper

  - **TSCA (Toxic Substances Control Act):**
    
    - 7440-57-5 Gold
    - 7440-22-4 silver
    - 7440-50-8 copper
    - 7440-06-4 platinum
    - 7440-74-6 indium
    - 7439-88-5 iridium

  - **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**

    - **EPA (Environmental Protection Agency)**
      
      - 7440-22-4 silver D
      - 7440-50-8 copper D

    - **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.

    - **OSHA-Ca (Occupational Safety & Health Administration)**
      
      None of the ingredients is listed.

  - **GHS label elements**

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

(Contd. on page 8)
Trade name: **Elektra**

- **Hazard pictograms**
  
  ![Hazard pictogram](image)
  
  GHS03

- **Signal word** Danger
- **Hazard statements**
  May intensify fire; oxidizer.
- **Precautionary statements**
  Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
  Take any precaution to avoid mixing with combustibles.
  Wear protective gloves/protective clothing/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.

- **National regulations:**
- **Other regulations, limitations and prohibitive regulations**
  The product is a medical device according to the EC-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.

- **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
  NFPA: National Fire Protection Association (USA)
  HMIS: Hazardous Materials Identification System (USA)