1 Identification

- **Product identifier**
  - **Trade name**: High Fusing White Ceramic Solder (HFWC)

- **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 prosthesis
  - Dental alloy

- **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 Hazard(s) identification

- **Classification of the substance or mixture**
  - The product is not classified according to the Globally Harmonized System (GHS).

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**
  - Not applicable.

- **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**: Void

- **Hazard pictograms**: Void

- **Signal word**: Void

- **Hazard statements**: Void

- **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.
Trade name: High Fusing White Ceramic Solder (HFWC)

- 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 25-50%
  - 7440-05-3 palladium 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.
  - If skin irritation continues, consult a doctor.
- After eye contact:
  - Grinding dust: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
  - Mechanical effects only.
- 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.
Trade name: High Fusing White Ceramic Solder (HFWC)

- 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.
  - Do not allow to enter sewers/surface or ground water.
- 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

- 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: Store away from reducing agents.
    - 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
  - Components with limit values that require monitoring at the workplace:
    7440-22-4 silver
    - PEL Long-term value: 0.01 mg/m³ metal and soluble compounds (as Ag)
    - REL Long-term value: 0.01 mg/m³
    - TLV Long-term value: 0.1 mg/m³ metal: dust and fume
    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.
Wash hands before breaks and at the end of work.
Keep away from foodstuffs, beverages and feed.
- **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 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: Grey
  - Odor: Odorless
  - Odour threshold: Not determined.
  - **pH-value:** Not applicable.
- **Change in condition**
  - Melting point/Melting range: 1100 - 1165 °C (2012 - 2129 °F)
  - Boiling point/Boiling range: Undetermined.
- **Flash point:** Not applicable.
- **Flammability (solid, gaseous):** Not determined.
- **Auto igniting:** Product is not self-igniting.
- **Danger of explosion:** Product does not present an explosion hazard.
- **Explosion limits:**
  - Lower: Not determined.
  - Upper: Not determined.
- **Vapor pressure:** Not applicable.
- **Density:** Not determined.
- **Relative density:** Not determined.
- **Vapour density:** Not applicable.
- **Evaporation rate:** Not applicable.
- **Solubility in / Miscibility with**
  - Water: Insoluble.
- **Partition coefficient (n-octanol/water):** Not determined.
Trade name: High Fusing White Ceramic Solder (HFWC)

- Viscosity:
  - Dynamic: Not applicable.
  - Kinematic: Not applicable.
- 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: Reacts with reducing agents.
- 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: Mechanical effects only.
  - 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.
  - Bioaccumulative potential: No further relevant information available.
  - Mobility in soil: No further relevant information available.
  - Additional ecological information:
    - General notes:
      - Water hazard class 1 (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.
    - 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, ADR, ADN, IMDG, IATA: Void

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

- Transport hazard class(es)
  - DOT, ADR, ADN, IMDG, IATA: Void
  - Class: Void

- Packing group
  - DOT, 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.
    - 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

(Contd. on page 7)
38. **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
    - 7440-50-8 copper

  - **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** Void

  - **Hazard pictograms** Void
  - **Signal word** Void
  - **Hazard statements** Void

- **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 05/13/2014 / 5**

- **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)