1.0 Commercial Product Name and Supplier

1.1 Commercial product name / Designation  
D’cure Fuzion® Dispersed Phase Dental Alloy 40%

D’cure Fuzion® Dispersed Phase Dental Alloy 45%

1.2 Application / Use  
Dental Amalgam Filling / For Professional Use Only

1.3 Manufactured for:  
Unipack Medical Corporation / RiteCare Supply, Inc.

Canoga Park, CA 91304 USA

Telephone: 1-562-777-8000 / Fax: 1-562-777-8005

Email: 4info@unipackmedical.com

1.4 Emergency Telephone Number  
911 (USA)

2.0 Hazard Identification

2.1 Harmful characteristics of material: Mercury is highly toxic if inhaled. This alloy does not have serious implications in skin contact. However, powdered alloy must not be inhaled. In reactions with acids, there is production of toxic vapors.

2.2 Appearance: Mercury vapors are colorless and odorless. In reactions with nitric acid, there is production of reddish vapors.

2.3 Potential health hazards: This product does not present potential health hazards under normal conditions of use, handling and storage.

2.4 NFPA Hazard Classification Ratings (Scale 0-4), Health = 1, Fire = 0, Reactivity = 0

California Prop 65 Warning: This product contains Mercury, a chemical known to the State of California to cause birth defects or other reproductive harm.

3.0 Composition / Ingredients

3.1 Mercury (CAS 7439-97-6)

3.2 Silver (CAS 7440-22-4)

3.3 Copper (CAS 7440-50-8)

3.4 Tin (CAS 7440-31-5)

4.0 First Aid Measures

4.1 General  
Avoid repeated contact with skin, chronic exposure may cause argyria (grayish blue pigmentation of the skin). No known serious toxic symptoms have been noted following exposure.

4.2 Eyes  
May cause irritation and/or possible corneal damage. Flush with plenty of water and seek medical attention.

4.3 Skin  
Prolonged or repeated exposure may cause irritation and/or allergic reaction. Avoid contact with skin. Chronic exposure may cause argyria (grayish blue pigmentation of the skin). No serious toxic symptoms have been noted following exposure. Remove contaminated clothing and wash exposed area with soap and water. Seek medical attention if needed.

4.4 Inhalation  
Irritation and soreness to nose and throat. Prolonged excessive exposure may cause chronic respiratory ailments. Provide fresh air and seek medical attention if irritation persists.

4.5 Ingestion  
Ingestion of alloy may cause irritation to GI tract, nausea or diarrhea. Seek medical attention immediately.

5.0 Fire-Fighting Measures

5.1 Flashpoint  
N/A

5.2 Flammability  
N/A

5.3 Auto-Ignition  
N/A

5.4 Extinguishing Media  
Dry Powder

5.5 Special Protection  
Mercury evaporates itself at high temperatures and produces highly toxic vapors. Firefighters should wear self-contained respiratory protective devices.

6.0 Accidental Release Measures

6.1 Techniques, procedures and materials in case of:

Small spill: Pick up spilled product with a suction bottle. DO NOT use vacuum cleaners as it will cause mercury to become airborne and increase exposure. Cover liquid droplets of mercury with a decontaminant / vapor suppressant such as HGX or elemental sulfur.

Large spill: Prompt cleanup and removal is necessary. Isolate area and avoid contact or inhalation of mercury. Use breathing equipment with cartridges for mercury vapors, safety glasses and impervious gloves. Avoid spilled product to penetrate drainage channels.

6.2 Further considerations: Avoid separation of mercury in small drops. Pick up spilled product and put into hermetic plastic containers for proper disposal (see section 13). It is advisable to perform environmental analysis to ensure that the site is no longer contaminated.

7.0 Handling and Storage

7.1 Handling: No special protective equipment is required for the normal handling of this product in its original package. During clinical activities, use impervious gloves, a well fitting particulate filter respirator, safety glasses, and adequate clothing. Breathing in alloy powder and exposure to mercury vapors can be fatal. Do not eat, drink, or smoke in areas where material is handled, stored or processed.

7.2 Storage: Store product in a cool and dry area, away from water sources, drainages, acetylene, ammonia, acids, and heat sources. Always keep container well sealed and upright to avoid spillage. Do not store in areas designated for eating, drinking or food storage.

7.3 This product is intended for dental use and by trained dental healthcare professionals only.
8.0 Exposure Controls and Personal Protection

8.1 How to control exposure to this product: Use this product in a cool and ventilated area with continuous renovation of air. Do not manipulate recently-prepared amalgams without gloves. Avoid any skin contact.

8.2 Individual protective equipment: Under adequate usage operations, no breathing equipment is needed. Use gloves and safety glasses.

8.3 Exposure parameters:
- Mercury (Hg): 0.025 mg/m³ (ACGIH), 0.05 mg/m³ (NIOSH), 0.10 mg/m³ (OSHA, MAK).
- Silver (Ag): 0.1 mg/m³ (ACGIH, UK), 0.01 mg/m³ (OSHA, MAK).
- Tin (Sn): 2 mg/m³ (OSHA, ACGIH), 5 mg/m³ (UK).
- Copper (Cu): 1 mg/m³ (OSHA, ACGIH).

REMARK: Under normal clinical usage of amalgam, the above values are not exceeded.

9.0 Physical and Chemical Properties

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>MERCURY</th>
<th>ALLOY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical appearance or form</td>
<td>Liquid</td>
<td>Powder or Tablet (green color)</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
<td>Odorless</td>
</tr>
<tr>
<td>Physical state</td>
<td>Liquid at room temperature</td>
<td>Solid</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>0.00181 mmHg at 20 ºC (68 ºF)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor density</td>
<td>7</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Boiling point</td>
<td>357 ºC (675 ºF)</td>
<td>Not determined</td>
</tr>
<tr>
<td>Fusion point</td>
<td>-38.9 ºC (-38 ºF)</td>
<td>850 ºC (1562 ºF) approx.</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>Not soluble (&lt;1%)</td>
<td>Not soluble</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>Soluble in nitric acid and in hot sulfuric acid</td>
<td>Soluble in nitric acid and in hot sulfuric acid</td>
</tr>
<tr>
<td>Density</td>
<td>13.55 g/cm³</td>
<td>3.5 g/cm³ approx. (apparent density)</td>
</tr>
<tr>
<td>Size of particles</td>
<td>Not applicable</td>
<td>&lt;103 µm</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>200.6 g/mol</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Molecular formula</td>
<td>Hg</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Purity</td>
<td>99.99% minimum</td>
<td>99.95% minimum</td>
</tr>
</tbody>
</table>

10.0 Stability and Reactivity

10.1 Chemical stability: This product is stable under normal manipulation and storage conditions.

10.2 Conditions to avoid: Avoid Temperatures higher than 38 ºC (100 ºF).

10.3 Incompatibility with other materials: Acids, Ammonia, Acetylene.

10.4 Dangerous breaking down products: Mercury vapors due to overheating or in presence of nitrous oxides (NOx) because of reaction with nitric acid.

10.5 Dangerous polymerization: Not applicable.

11.0 Acute Toxicity

11.1 Acute Toxicity: Acute toxicity is mainly produced if mercury is swallowed or by inhalation of its vapors. Acute toxicity becomes apparent with an erosive bronchitis that can result in respiratory failure. After a short period of time, a systemic intoxication appears. If mercury is swallowed, it can produce kidney failure, vomiting, foamed saliva, abdominal pain and diarrhea; subsequent failures include shock, low arterial blood pressure, and tachycardia. Two or three days later, a tattoo on the gum (also known as gingival edge) appears.

About the mercury: The copper vapors produced while the material is heated can cause fumes; bronchitis, and abdominal pain. Acute exposure can cause severe gastrointestinal discomfort. The material is not toxic if ingested in small quantities (<5 ml). If large quantities are ingested, vomiting can occur, but not permanent harms. The absorption of metallic tin by digestive way is minimum. The penetration of small quantities of silver through skin can produce local myalgia.

11.2 Chronic Toxicity

About the mercury: This condition is characterized by the presence of neurological, psychiatric, and renal syndromes, fine quivering of fingers, eyelids, and tongue. There are also craziness manifestations due to absorption in the brain. This condition also produces insomnia, nervousness, irritability, judgment disturbance, memory failure, anxiety, depression and even paranoid conditions. The renal syndrome can result in chronic kidney failure with high blood pressure and retention of body liquids.

About the alloy: The irritation of airways and lung tissues by tin can cause lung edema. Silver powder is an irritant and can cause ulceration of the skin and nasal septum.

11.3 Additional Information: Dental amalgam is a restorative material used mainly on posterior teeth which are the most used ones. It is not known to produce serious harmful effects on health.
### 12.0 Ecological Information

Mercury is bio-accumulative in living beings and it biomagnifies itself in the food chain. This is why amalgam waste and other contaminated material must have an adequate disposal.

### 13.0 Disposal Considerations

Recycling of this product is possible. Waste disposal of this product must be done in a safe way and in accordance with regulations into effect in each country. Never incinerate waste of this product or throw it into waterways.

The product or individual components may be salvaged or reclaimed for reuse. Dispose of material as solid waste in a closed container and always dispose of in accordance with Federal, State and Local regulations. Spilled powder may be accomplished by carefully sweeping or wet mopping spilled material into an acceptable closed waste container. Do not use vacuum, as vacuuming may cause fine particles to become airborne. Avoid generating airborne dust.

**WARNING:** Laws, regulations and local restrictions can change or be reinterpreted from one country to another.

### 14.0 Transport Information

**14.1** Dangerous material: Mercury.

**14.2** Type of risk: Toxic.

**14.3** UN number: 2809.

**14.4** IATA classification: Mercury contained in manufactured product, Class 8; Package Group 3.

**14.5** DOT Labels Required (49CFR172.101): If over 1 pound RQ – Reportable Quantity, Corrosive Label

### 15.0 Regulatory Information

**15.1** **US Federal regulations:**

CERCLA 103 Reportable Quantity: RQ is 1 pound for Mercury.

TSCA 12(b) one-time export: Mercury

TSCA Status: Mercury (CASRN# 7439-97-6) is listed as a toxic substance

Clean Water Act: Mercury is listed as Priority Pollutant and as Toxic Pollutant

Clean Air Act Section 112: Mercury is listed as a hazardous air pollutant (HAP)

Mercury is on the following states Right to Know lists: California, New Jersey, Pennsylvania, Minnesota, and Massachusetts.

RCRA U-Series Hazardous Waste Code for Mercury: U151

OSHA: OSHA does not consider Mercury highly hazardous.

**California Prop. 65 Warning:**

This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

**European Community Labeling:**

EC# 231-106-7 for Mercury. Mercury is both Toxic and Dangerous to the Environment. R23 Toxic by Inhalation, R33 Danger of Cumulative Effects. R50/R53 Very toxic to aquatic organisms may cause long-term adverse effects in the aquatic environment. S1/2 Keep locked up and out of reach of children, S7 Keep container tightly closed, S45 In case of accident or if you feel unwell, seek medical advice immediately (show label where possible), S60 This material and its container must be disposed of as hazardous waste. S61 Avoid release to the environment.

**Canadian regulations:**

Canadian Environmental Protection Act: This product is a medical device and not subject to chemical notification requirements.

Canada Ingredient Disclosure List: Mercury is listed on the Canadian Ingredient Disclosure List.

Canada – DSL/NDSL: Mercury is listed on Canada’s DSL List.

### 16.0

**16.1** Extremely toxic by inhalation.

**16.2** Danger of serious damage to health by prolonged exposure through inhalation.

**16.3** For use by trained healthcare professionals only. Do not attempt usage of product without proper safety apparel or training.

**16.4** Do not attempt usage if you are untrained or unclear on proper processing, handling, or procedures to follow in case of accidental release.

**16.5** In case of emergency, please call our Industrial -and- Physical Safety Department, phone Nº (574) 550-0000.

**16.6** The information of the section 11 was taken from:


**16.7** The information presented herein is believed to be factual as it has been derived from the works of persons believed to be qualified experts. However, nothing contained in this information is to be taken as a warranty or representation for which UNIPACK Medical Corporation/RiteCare Supply, Inc., nor any of its subsidiaries bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we make no guarantee that these are the only hazards that exist.

Revision Date: May 25, 2015