MATERIAL SAFETY DATA SHEET

SECTION 1 - SOURCE/IDENTITY/USE INFORMATION

MANUFACTURER
GC AMERICA INC.
3737 West 127th St.
Alsip, Illinois, 60803
Telephone: 708-597-0900
Hours: Mon.- Fri. 8:00 am. - 5:00 pm. C.S.T.
Transportation Emergency Telephone No. 800-424-9300

COMMON NAME: MIRACLE MIX ALLOY
CHEMICAL NAME: N.A.
PRODUCT USE: Reinforced glass ionomer crown/core material - alloy component.
The following information is provided with regard to the toxicity and hazards of the pure components present in this portion of the unmixed powder/liquid system.

SECTION 2 - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

<table>
<thead>
<tr>
<th>COMPONENT AND CAS</th>
<th>EXPOSURE LIMITS</th>
<th>LD50/LC50</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silver metal 7440-22-4</td>
<td>TWA=0.1mg/m3</td>
<td>N.E.</td>
<td>56</td>
</tr>
<tr>
<td>Tin metal 7440-31-5</td>
<td>TWA=2mg/m3</td>
<td>N.E.</td>
<td>29</td>
</tr>
<tr>
<td>Copper metal 7440-50-8</td>
<td>TWA=0.2mg/m3</td>
<td>LD50=N.A.</td>
<td>LC50=N.E.</td>
</tr>
</tbody>
</table>

SECTION 3 - PHYSICAL/CHEMICAL PROPERTIES

BOILING POINT: 1287.8°C
SPECIFIC GRAVITY (H2O=1): N.E.
VAPOR PRESSURE: N.E.
MELTING POINT: 587.8°C
VAPOR DENSITY: N.E.
EVAPORATION RATE: N.E.
SOLUBILITY IN WATER: Insoluble
ODOR THRESHOLD: N.E.
COEFFICIENT OF OIL/WATER DISTRIBUTION: N.E.
APPEARANCE AND COLOR: Very fine, gray powder.

SECTION 4 - FIRE AND EXPLOSION DATA

FLASH POINT: N.A.
FLAMMABLE LIMITS: N.A.
EXTINGUISHING MEDIA: Material is not combustible. However, air-borne dust mixed with sufficient air is flammable if flame is present. Use extinguishing media appropriate to the surrounding area.
SPECIAL FIRE FIGHTING PROCEDURES: Full protective clothing, face mask, and self-contained breathing apparatus.
UNUSUAL FIRE AND EXPLOSION HAZARDS: Air-borne dust is flammable
HAZARDOUS COMBUSTION PRODUCTS: Carbon dioxide, carbon monoxide, toxic metallic oxides

SECTION 5 - REACTIVITY DATA

STABILITY: STABLE: X
UNSTABLE: __
POLYMERIZATION: WILL NOT OCCUR: X
WILL OCCUR: __
CONDITIONS TO AVOID: Avoid high temperatures and humidity.
INCOMPATIBILITY (MATERIALS TO AVOID): Ammonium nitrate, bromates and all halogen salts.
HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: N.E.

SECTION 6 - HEALTH HAZARD DATA and FIRST AID INFORMATION

ROUTES OF ENTRY: INHALATION X SKIN X INGESTION __

HEALTH HAZARD: (ACUTE AND CHRONIC): Can be absorbed through the skin. While not reported as toxic will cause permanent black coloration at the skin contact sites. Dust may cause a form pneumoconiosis which is relatively benign. Inhalation of copper dust has been
reported to cause hemolysis of red blood cells.

SIGNS AND SYMPTOMS OF OVEREXPOSURE: N.E.
CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: N.E.

EMERGENCY FIRST AID PROCEDURES:
- INHALATION: Remove to fresh air, drink water to clear throat and blow nose to evacuate dust.
- INGESTION: Seek medical assistance
- SKIN: Wash with soap and water.
- EYES: Flush with large quantities of water. If irritation develops or persists seek medical attention.

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE
IN CASE OF RELEASE OR SPILL: Avoid generating dust during clean up. Wear protective clothing as noted in section 8. If dust is generated use a filter equipped vacuum and MSHA/NIOSH approved mask.
WASTE DISPOSAL METHOD: In accordance with local, state and federal regulations.
STORAGE, HANDLING, AND SPECIAL PRECAUTIONS: Store at room temperature and humidity.

SECTION 8 - CONTROL MEASURES
RESPIRATORY PROTECTION: Minimize exposure to dust in accordance with good hygiene practice. If needed, use MSHA-NIOSH approved respirator for dusts, mists and fumes.
VENTILATION: LOCAL EXHAUST: Yes MECHANICAL: Yes SPECIAL: N.A. OTHER: N.A.
PROTECTIVE GLOVES: Disposable vinyl gloves recommended.
EYE PROTECTION: Safety glasses.
OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Eyewash station.
WORK/HYGIENIC PRACTICE: Follow safe hygiene practices.

SECTION 9 - PREPARATION INFORMATION
This data is supplied to comply with OSHA Hazard Communication Standard 29 CFR 1910.1200 and W.H.M.I.S. CPR
PREPARED BY: T. Joritz Date: 03 January 2003
Director, Regulatory Affairs

N.A. = NOT APPLICABLE
N.E. = NOT ESTABLISHED

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<table>
<thead>
<tr>
<th>NFPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRE  TOXICITY REACTIVITY SPECIAL</td>
</tr>
<tr>
<td>0    2        1           -</td>
</tr>
</tbody>
</table>

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**SECTION 1 - SOURCE/IDENTITY/USE INFORMATION**

**MANUFACTURER**  
GC AMERICA INC.  
3737 West 127th St.  
Alsip, Illinois, 60803  
Telephone: 708-597-0900  
Hours: Mon.- Fri. 8:00 am. - 5:00 pm. C.S.T.  
Transportation Emergency Telephone No. 800-424-9300

**COMMON NAME:** MIRACLE MIX LIQUID  
MIRACLE MIX CAPSULES LIQUID

**CHEMICAL NAME:** N.A.

**PRODUCT USE:** Dental composite filling material - liquid component.

*The following information is provided with regard to the toxicity and hazards of the pure components present in this portion of the unmixed powder/liquid system.*

**SECTION 2 - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION**

<table>
<thead>
<tr>
<th>COMPONENT AND C.A.S.</th>
<th>EXPOSURE LIMITS</th>
<th>LD50/LC50 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyacrylic acid</td>
<td>TWA=10ppm (ACGIH)</td>
<td>LD50=2500mg/Kg (oral rat)</td>
</tr>
<tr>
<td>(not listed)</td>
<td></td>
<td>LC50=N.E.</td>
</tr>
<tr>
<td>Proprietary Ingredient</td>
<td>TLV=10mg/m³</td>
<td>N.E.</td>
</tr>
<tr>
<td></td>
<td>PEL=15mg/m³</td>
<td>5-15</td>
</tr>
</tbody>
</table>

**SECTION 3 - PHYSICAL/CHEMICAL PROPERTIES**

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOILING POINT</td>
<td>101°C</td>
</tr>
<tr>
<td>VAPOR PRESSURE</td>
<td>N.E.</td>
</tr>
<tr>
<td>VAPOR DENSITY</td>
<td>N.E.</td>
</tr>
<tr>
<td>SOLUBILITY IN WATER</td>
<td>N.E.</td>
</tr>
<tr>
<td>COEFFICIENT OF OIL/WATER DISTRIBUTION</td>
<td>N.E.</td>
</tr>
<tr>
<td>APPEARANCE AND COLOR</td>
<td>Colorless, slightly viscous and odorless liquid.</td>
</tr>
</tbody>
</table>

**SECTION 4 - FIRE AND EXPLOSION DATA**

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLASH POINT</td>
<td>Not flammable</td>
</tr>
<tr>
<td>FLAMMABLE LIMITS</td>
<td>N.A.</td>
</tr>
</tbody>
</table>

**SECTION 5 - REACTIVITY DATA**

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>STABILITY</td>
<td>STABLE: X</td>
</tr>
<tr>
<td>UNSTABLE: _</td>
<td></td>
</tr>
<tr>
<td>POLYMERIZATION</td>
<td>WILL NOT OCCUR: X</td>
</tr>
<tr>
<td>WILL OCCUR: _</td>
<td></td>
</tr>
<tr>
<td>CONDITIONS TO AVOID</td>
<td>High heat.</td>
</tr>
<tr>
<td>INCOMPATIBILITY</td>
<td>Alkali will inactivate product.</td>
</tr>
<tr>
<td>HAZARDOUS DECOMPOSITION OR BY-PRODUCTS</td>
<td>N.E.</td>
</tr>
</tbody>
</table>

**SECTION 6 - HEALTH HAZARD DATA and FIRST AID INFORMATION**

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUTAGENIC AFFECTS</td>
<td>X</td>
</tr>
<tr>
<td>TERATOGENIC AFFECTS</td>
<td>X</td>
</tr>
<tr>
<td>REPRODUCTIVE TOXIN</td>
<td>X</td>
</tr>
<tr>
<td>CARCINOGENICITY</td>
<td>X</td>
</tr>
<tr>
<td>SENSITIZER</td>
<td>X</td>
</tr>
<tr>
<td>ROUTES OF ENTRY</td>
<td>INHALATION _</td>
</tr>
<tr>
<td>SKIN X</td>
<td></td>
</tr>
<tr>
<td>INGESTION X</td>
<td></td>
</tr>
</tbody>
</table>

**HEALTH HAZARD:** (ACUTE AND CHRONIC): Acidic solution (pH=1.90), avoid contact with skin or eyes.

**CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:** N.E.
EMERGENCY FIRST AID PROCEDURES:
INGESTION: Do not induce vomiting - give large volumes of water. Seek medical attention.
SKIN: Wash with soap and water. If irritation develops seek medical attention.
EYES: Flush with water for 15 minutes. If irritation develops seek medical attention.

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE
IN CASE OF RELEASE OR SPILL: Neutralize with diluted hydroxide.
WASTE DISPOSAL METHOD: Dilute with water and flush into drain with large volumes of water.
STORAGE, HANDLING, AND SPECIAL PRECAUTIONS: Store in a cool dry place in tightly closed container.

SECTION 8 - CONTROL MEASURES
RESPIRATORY PROTECTION: None required.
VENTILATION: None required

LOCAL EXHAUST: N.A.  MECHANICAL: N.A.
SPECIAL: N.E.  OTHER: N.A.

PROTECTIVE GLOVES: Latex gloves are recommended.
EYE PROTECTION: Goggles or full face shield.
OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Do not spill on clothing. Eye wash station.
WORK/HYGIENIC PRACTICE: N.E.

SECTION 9 - PREPARATION INFORMATION
This data is supplied to comply with OSHA Hazard Communication Standard 29 CFR 1910.1200 and W.H.M.I.S. CPR
PREPARED BY: T. Joritz  Date: 03 January 2003
Director, Regulatory Affairs

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<table>
<thead>
<tr>
<th>FIRE</th>
<th>TOXICITY</th>
<th>REACTIVITY</th>
<th>SPECIAL</th>
<th>ACID</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
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COMMON NAME: MIRACLE MIX POWDER
MIRACLE MIX CAPSULES POWDER

CHEMICAL NAME: N.A.

PRODUCT USE: Reinforced glass ionomer crown/core material - powder component.
The following information is provided with regard to the toxicity and hazards of the pure components present in this portion of the unmixed powder/liquid system.

SECTION 2 - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

COMPONENT AND C.A.S. EXPOSURE LIMITS LD50/LC50 %
Alumino-silicate glass (not listed) TLV=10mg/m3 PE=15mg/m3 N.E. 100

SECTION 3 - PHYSICAL/CHEMICAL PROPERTIES

BOILING POINT: 101°C SPECIFIC GRAVITY (H2O=1): 2.56
VAPOR PRESSURE: N.E. MELTING POINT: 1350°C
VAPOR DENSITY: N.E. EVAPORATION RATE: N.E.
SOLUBILITY IN WATER: Insoluble ODOR THRESHOLD: N.E.
COEFFICIENT OF OIL/WATER DISTRIBUTION: N.E.

SECTION 4 - FIRE AND EXPLOSION DATA

FLASH POINT: N.A. FLAMMABLE LIMITS: N.A.

EXTINGUISHING MEDIA: Material is not combustible. Use extinguishing media appropriate to the surrounding area.

SPECIAL FIRE FIGHTING PROCEDURES: N.A.

UNUSUAL FIRE AND EXPLOSION HAZARDS: N.E.

HAZARDOUS COMBUSTION PRODUCTS: Carbon dioxide, carbon monoxide.

SECTION 5 - REACTIVITY DATA

STABILITY: STABLE: X UNSTABLE: _
POLYMERIZATION: WILL NOT OCCUR: X WILL OCCUR: _

CONDITIONS TO AVOID: Avoid high temperatures and humidity.

INCOMPATIBILITY (MATERIALS TO AVOID): Contains silica glass. Avoid contact with hydrofluoric acid. Contact with acids liberates hydrogen fluoride gas which is toxic and corrosive.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: At elevated temperatures various fluoride compounds will be liberated, including toxic hydrogen fluoride and sodium potassium fluoride.

SECTION 6 - HEALTH HAZARD DATA and FIRST AID INFORMATION

YES NO NE NA NTP IARC OSHA OTHER
MUTAGENIC AFFECTS: X
TERATOGENIC AFFECTS: X
REPRODUCTIVE TOXIN: X
CARCINOGENICITY: X (GROUP 2A)
SENSITIZER: X

MS437015 MIRACLE MIX POWDER/CAPSULES

SECTION 6 - HEALTH HAZARD DATA and FIRST AID INFORMATION - continued

ROUTES OF ENTRY: INHALATION X SKIN _ INGESTION _

HEALTH HAZARD: (ACUTE AND CHRONIC): Contains silica glass, which is considered a hazard by inhalation. IARC has classified it as a probable carcinogenic for humans. Dusts of silica glass is also a known cause of silicosis, a non-cancerous lung disease.

SIGNS AND SYMPTOMS OF OVEREXPOSURE: Irritation and soreness in throat and nose.

CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: May aggravate preexisting upper respiratory and lung disease.
EMERGENCY FIRST AID PROCEDURES:
  INHALATION: Remove to fresh air, drink water to clear throat and blow nose to evacuate dust.
  INGESTION: Ingestion may require medical assistance.
  SKIN: Wash with soap and water.
  EYES: Flush with large quantities of water. If irritation develops or persists seek medical attention.

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE
IN CASE OF RELEASE OR SPILL: Avoid generating dust while sweeping. If an excessive amount of dust is generated use a filter equipped vacuum and MSHA/NIOSH approved mask.
WASTE DISPOSAL METHOD: In accordance with local, state and federal regulations.
STORAGE, HANDLING, AND SPECIAL PRECAUTIONS: Store at normal room temperatures and humidity.

SECTION 8 - CONTROL MEASURES
RESPIRATORY PROTECTION: Minimize exposure to dust in accordance with good hygiene practice. If needed, use MSHA-NIOSH approved respirator for dusts, mists and fumes.
VENTILATION: LOCAL EXHAUST: Yes MECHANICAL: Yes SPECIAL: N.A. OTHER: N.A.

PROTECTIVE GLOVES: Disposable vinyl gloves recommended.
EYE PROTECTION: Safety glasses.
OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Eyewash station.
WORK/HYGIENIC PRACTICE: Follow safe hygiene practices.

SECTION 9- PREPARATION INFORMATION
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<table>
<thead>
<tr>
<th>NFPA</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRE</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>TOXICITY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>REACTIVITY</td>
<td>0</td>
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</tr>
<tr>
<td>SPECIAL</td>
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