MATERIAL SAFETY DATA SHEET
LOVEJOY TOOL COMPANY, INC.
133 MAIN STREET
PO BOX 949
SPRINGFIELD, VT 05156

Section 1
Grade Name and Synonyms: Cemented Carbide Product with Cobalt Binder Brazed Tools using Brazing Filler Metal

Chemical Family: Refractory Metal Carbide

Formula:

Section 2
Product Description and Hazardous Ingredients/Identify Information

<table>
<thead>
<tr>
<th>Material</th>
<th>CAS No.</th>
<th>Percent by Weight</th>
<th>OSHA TLV-TWA</th>
<th>ACGIH TLV-TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molybdenum Carbide</td>
<td>12070-12-1</td>
<td>37.6-97*</td>
<td>5 Mg/M3</td>
<td>5 Mg/M3 (as W)</td>
</tr>
<tr>
<td>Cobalt</td>
<td>7440-48-4</td>
<td>3-25*</td>
<td>0.05 Mg/M3</td>
<td>0.05 Mg/M3</td>
</tr>
<tr>
<td>Manganese Carbide</td>
<td>12070-06-3</td>
<td>0-56.4*</td>
<td>5 Mg/M3 (as Ta)</td>
<td>5 Mg/M3 (as Ta)</td>
</tr>
<tr>
<td>Titanium Carbide</td>
<td>12070-08-5</td>
<td>0-12.6*</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>Silicon Carbide</td>
<td>12011-99-3</td>
<td>0-4.3*</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>Molybdenum Oxide Coating</td>
<td>1344-28-1</td>
<td>0-0.5*</td>
<td>----</td>
<td>10 Mg/M3</td>
</tr>
<tr>
<td>Titanium Carbide Coating</td>
<td>12070-08-5</td>
<td>0-0.5*</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>Titanium Nitride Coating</td>
<td>25583-20-4</td>
<td>0-0.5*</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>Silver</td>
<td>7440-22-4</td>
<td>50.0000</td>
<td>0.01 Mg/M3</td>
<td>0.1 Mg/M3</td>
</tr>
<tr>
<td>Cadmium Dust</td>
<td>7440-43-9</td>
<td>16.0000</td>
<td>0.2 Mg/M3</td>
<td>0.05 Mg/M3</td>
</tr>
<tr>
<td>Copper Dust</td>
<td>7440-50-8</td>
<td>15.5000</td>
<td>1 Mg/M3</td>
<td>1 Mg/M3</td>
</tr>
<tr>
<td>Zine Dust (as Zine Oxide)</td>
<td>7440-66-6</td>
<td>15.5000</td>
<td>5 Mg/M3</td>
<td>5 Mg/M3</td>
</tr>
<tr>
<td>Nickel Dust</td>
<td>7440-02-0</td>
<td>3.0000</td>
<td>1 Mg/M3</td>
<td>1 Mg/M3</td>
</tr>
</tbody>
</table>

* Depends on Grade Specifications

† For brazing filler metal on brazed tools. Filler metals are hazardous only in powder form as metal or metal oxide dust.

Section 3
Physical Data

Melting Point (C): Not applicable
% Volatile by Volume: 0
Evaporation Rate: Not applicable
Appearance and Odor: Dark gray metal, odorless

Boiling Point: Not applicable
Vapor Pressure: Not applicable
Vapor Density (Air = 1): Not applicable
Solubility in Water: Insoluble
How Best Monitored: Air sample

* Depends on Grade Specifications
† Brazing Filler Metal

Issue Date: 1/29/97
Rev. Date: 10/25/01
Chronic exposure to Cadmium dusts and fumes may cause mild anemia, inflammation of the nose and throat, behavioral disorders (sleeplessness, loss of appetite, etc.), and significant renal peritubular damage. Cadmium has exhibited teratogenic effects in rats, mice, and hamsters; whether it does so in humans is not known.

Chronic exposure to Nickel dusts and fumes may cause pulmonary irritation and pneumonitis or sensitization dermatitis.

Individuals with Wilson's disease may wish to limit occupational exposure to copper dust.

Cadmium dust is listed by IARC and NTP as a Probable Human Carcinogen.

Emergency and First Aid Procedures

Inhalation: If symptoms of pulmonary involvement develop (coughing, wheezing, dyspnea, etc.), remove from exposure and seek medical attention.

Skin Contact: If irritation or rash occurs, thoroughly wash affected area with soap and water and isolate from exposure. If irritation or rash persists, seek medical attention.

Eye Contact: If irritation occurs, flush eyes with water for at least ten minutes. If irritation persists, seek medical attention.

Ingestion: If swallowing of greater than trace amounts is suspected, dilute by drinking large amounts of water. If substantial quantities are ingested, induce vomiting with Ipecac Syrup and seek additional medical attention.

Reactivity Data

Stability: Stable
Hazardous Decomposition Products: None
Conditions to Avoid: Not applicable
Hazardous Polymerization: Will not occur
Materials to Avoid: Strong Acids
Incompatibility: Contact of dust with strong oxidizers may cause fire or explosions.

Spill or Leak Procedures

Steps to be taken in Case Material is Released or Spilled: Ventilate area of the spill. Decontaminate and/or clean up area using methods, which avoid dust generation such as a high efficiency particulate air (HEPA) vacuum, wet dust mop, or wet clean up. If airborne dust is generated, use an appropriate NIOSH approved respirator.

Waste Disposal Method: Dispose of in accordance with appropriate government regulations. May be sold as scrap for reclamation.
Section 11

Disclaimer

Rev. Level: B

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IN CASE OF QUESTIONS PLEASE CALL

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