Material Safety Data Sheet
Histology / Cytology Reagents
10% Neutral Buffered Formalin

Section 1. Product and Preparation Information

Product Identifier
10% Neutral Buffered Formalin

Product Use
Tissue fixation

Date Prepared
May 2007

Synonyms / Chemical Name
Formalin, buffered formaldehyde

Manufacturer/ Preparer
Surgipath Canada, Inc. Surgipath Medical Industries, Inc.
83 Terracon Place 5205 Route 12
Winnipeg, Manitoba R2J 4B3 Richmond, IL 60071

Emergency Contact
Chemtrec USA and Canada 800.424.9300
Chemtrec International 703.527.3887
Canadian Non-Transport Calls 800.665.7425
USA Non-Transport Calls 800.225.8867

Section 2. Preventive Measures

Personal Protection

NFPA

DOT (Air Only)

Canadian WHMIS

E

D1A

D2A, D2B

Emergency Overview
DANGER! - CONTAINS FORMALDEHYDE - POTENTIAL CANCER HAZARD – REPEATED OR PROLONGED EXPOSURE INCREASES RISK – HIGHLY TOXIC BY INHALATION AND IF SWALLOWED - IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN - MAY CAUSE SENSITIZATION BY INHALATION OR SKIN CONTACT - RISK OF SERIOUS DAMAGE TO EYES - CORROSIVE – MAY CAUSE BURNS - KEEP CONTAINER CLOSED - USE WITH ADEQUATE VENTILATION – TARGET ORGANS, SKIN, EYES, RESPIRATORY TRACT FOR LABORATORY USE ONLY

Engineering Controls
Use exhaust ventilation or laboratory hood. Ensure that eyewash stations and quick drench showers are proximal to the workstation or tissue processor.

Handling and Storage
Avoid contact with eyes and skin. Do not breathe vapor or mist. Avoid prolonged or repeated contact with skin. If potential for splashing exists, protect skin by using sleeve protectors, aprons and face-shield. Immediately remove contaminated clothing. Wash thoroughly after handling. Keep containers closed and out of reach of children. Ground all equipment containing material. Store at room temperature.

Small Spill and Leak
Dilute with water and mop, or absorb with an inert dry material and place in an appropriate waste disposal container. Use D-Formalizer® pads or F.C.G.® Formaldehyde Control Granules to reduce formaldehyde exposure.

Large Spill and Leak
Keep away from heat and ignition sources. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Avoid skin and eye contact. Prevent entry into sewers, basements or confined areas: dike if needed. Ensure airborne concentrations of formaldehyde do not exceed published exposure limits. Additional protective equipment such as full-face respirator, full-body suit and boots may be required. If airborne concentrations of formaldehyde exceed 7.5 ppm, only use SCBA or supplied air respirators.

Waste Disposal
Unused Product – Dispose as a regulated hazardous waste. Spent product or spill clean up - Follow all provincial and federal rules.

Section 3. Hazardous Ingredients

<table>
<thead>
<tr>
<th>Hazardous Ingredient</th>
<th>% wt</th>
<th>CAS Number</th>
<th>LD50</th>
<th>LC50</th>
<th>TDG PIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde</td>
<td>&lt;4</td>
<td>50-00-0</td>
<td>100 mg/kg oral rat</td>
<td>203 mg/m³ inhalation rat</td>
<td>Not Regulated</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>42 mg/kg oral mouse</td>
<td>505 mg/m³ 2hr inhalation mouse</td>
<td></td>
</tr>
<tr>
<td>Methanol</td>
<td>&lt;4</td>
<td>67-56-1</td>
<td>5,600 mg/kg oral rat</td>
<td>64,000 ppm/4 hr. inhalation rat</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7,300 mg/kg oral mouse</td>
<td>81,000 mg/m³ 14hr rabbit</td>
<td></td>
</tr>
<tr>
<td>Monosodium phosphate</td>
<td>NA</td>
<td>7558-80-7</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Disodium phosphate</td>
<td>NA</td>
<td>7558-79-4</td>
<td>17 gm/kg oral rat</td>
<td>NA</td>
<td></td>
</tr>
</tbody>
</table>

Section 4. First Aid Measures

Eye Contact
Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation persists.

Skin Contact
Remove contaminated clothing immediately. Wash the affected areas with soap or mild detergent and large amounts of water for at least 15 minutes.

Inhalation
Move individual to fresh air immediately. If breathing is difficult, give oxygen. If breathing has stopped, administer artificial respiration. Get medical attention.

Ingestion
Never give anything by mouth to an unconscious person. Get medical attention immediately.

1 of 2 MSDS# 119 – 10% NB FORMALIN
Section 5. Physical Data

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Odor and Appearance</th>
<th>Odor Threshold (ppm)</th>
<th>Solubility</th>
<th>Auto-ignition Temp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqueous Solution</td>
<td>Pungent odor, colorless</td>
<td>0.1 ppm formaldehyde</td>
<td>Easily soluble in water</td>
<td>795° F (423° C)</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Evaporation Rate</td>
<td>Boiling Point</td>
<td>Flash Point CC</td>
<td></td>
</tr>
<tr>
<td>2.7mmHg @ 20°C (MeOH)</td>
<td>&gt;1</td>
<td>212° F (100° C)</td>
<td>&gt;200° F (93.3° C)</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>Specific Gravity</td>
<td>Freezing Point</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neutral</td>
<td>1.022 Water = 1</td>
<td>-133° F (-92° C)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Section 6. Fire and Explosion

<table>
<thead>
<tr>
<th>Flammability</th>
<th>Conditions</th>
<th>Fl, Pt - Auto Ignition</th>
<th>Flammable Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not flammable</td>
<td>NA</td>
<td>See Physical Data above</td>
<td></td>
</tr>
</tbody>
</table>

Explosivity

Not explosive under normal conditions of use.

Hazardous Combustion Products

CO CO2, irritating, corrosive, toxic gases

Means of Extinction

Small Fire – Use DRY chemical powder. Large Fire – Use alcohol foam, water spray or fog

Section 7. Reactivity

<table>
<thead>
<tr>
<th>Stability</th>
<th>Hazardous Polymerization</th>
<th>Incompatibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product is stable under normal conditions of use.</td>
<td>No hazardous polymerization.</td>
<td>Reactive with oxidizing materials, acids and alkalies</td>
</tr>
</tbody>
</table>

Conditions of Reactivity

NA

Hazardous Decomposition Products

Strong vapors and irritants, carbon monoxide, carbon dioxide

Section 8. Toxicological Properties

<table>
<thead>
<tr>
<th>Routes of Entry</th>
<th>Skin/eye contact, inhalation and ingestion.</th>
<th>Target Organs</th>
<th>Skin, eyes and respiratory tract</th>
</tr>
</thead>
</table>

Effects of Acute Exposure

Eye

Hazardous in case of eye contact (irritant). May cause burns. May cause chemical conjunctivitis or corneal damage.

Skin

Hazardous in case of skin contact (irritant, corrosive, sensitizer). Skin contact may produce burns. May cause skin sensitization which becomes evident upon re-exposure. Skin inflammation is characterized by itching, scaling, reddening or occasionally blistering.

Absorption

Absorbed through the skin

Inhalation

Hazardous in case of inhalation (lung irritant and sensitizer). Inhalation of spray mist may produce sever irritation of respiratory tract characterized by coughing, choking, or shortness of breath. May cause asthmatic attacks due to allergic sensitization.

Ingestion

May be fatal if swallowed. May cause burns to mouth, throat and stomach.

Medical Conditions Aggravated by Overexposure

Dermatitis, emphysema, bronchitis and conjunctivitis.

Section 9. Regulatory Information

<table>
<thead>
<tr>
<th>OSHA Hazardous</th>
<th>Cal. Prop. 65</th>
<th>Canadian WHMIS</th>
<th>RCRA Regulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highly toxic</td>
<td>Listed as carcinogen</td>
<td>D1A, D2A, D2B, E</td>
<td>U122</td>
</tr>
<tr>
<td>SARA 302/304 Listed</td>
<td>SARA 313 Listed</td>
<td>CERCLA 102A Listed</td>
<td>RQ 100 lbs. Formaldehyde</td>
</tr>
<tr>
<td>CWA 367 Listed</td>
<td>CWA 311 Not Listed</td>
<td>CAA 112 Release Prevention Listed</td>
<td>CAA 112 Reg. Flam. Substance Not Listed</td>
</tr>
<tr>
<td>CAA 112 Reg. Toxic Substance Not Listed</td>
<td>TSCA Inventory All ingredients listed</td>
<td>EEC Flammability NA</td>
<td>CEPA DSL All Ingredients Listed</td>
</tr>
<tr>
<td>Proper US DOT Shipping Name</td>
<td>IATA Classification Not regulated</td>
<td>Limited Quantity No</td>
<td></td>
</tr>
</tbody>
</table>

The information provided above is based upon unused product. Product characteristics may change after processing, requiring further classification.

This Material Safety Data Sheet has been prepared in accordance with the Canadian Controlled Products Regulations and 29CFR1910.1200. To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.