

# Material Safety Data Sheet

## Histology / Cytology Reagents

### 10% Neutral Buffered Formalin

<b>Section 1. Product and Preparation Information</b>		
<b>Product Identifier</b> 10% Neutral Buffered Formalin	<b>Product Use</b> Tissue fixation	<b>Date Prepared</b> May 2007
<b>Synonyms / Chemical Name</b> Formalin, buffered formaldehyde		<b>Document #</b> 120
<b>Manufacturer/ Preparer</b> Surgipath Canada, Inc. 83 Terracon Place Winnipeg, Manitoba R2J 4B3		<b>Emergency Contact</b> Surgipath Medical Industries, Inc. 5205 Route 12 Richmond, IL 60071
		<b>Emergency Contact</b> 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

<b>Section 2. Preventive Measures</b>			
<b>Personal Protection</b> 	<b>NFPA</b> 	<b>DOT (Air Only)</b> 	<b>Canadian WHMIS</b> <b>E</b> <b>D1A</b> <b>D2A, D2B</b>
<b>Emergency Overview</b> 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		<b>Personal Protection</b> <b>Eyes</b> Splash goggles <b>Body</b> Laboratory coat <b>Hands</b> Latex or nitrile gloves <b>Respiratory</b> Wear approved/certified respirator if airborne concentrations exceed exposure limits	
<b>Engineering Controls</b> Use exhaust ventilation or laboratory hood. Ensure that eyewash stations and quick drench showers are proximal to the workstation or tissue processor.			
<b>Handling and Storage</b> 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.			
<b>Small Spill and Leak</b> 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.			
<b>Large Spill and Leak</b> 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. <b>If airborne concentrations of formaldehyde exceed 7.5 ppm, only use SCBA or supplied air respirators.</b>			
<b>Waste Disposal</b> <i>Unused Product</i> – Dispose as a regulated hazardous waste. <i>Spent product or spill clean up</i> - Follow all provincial and federal rules.			

<b>Section 3. Hazardous Ingredients</b>					
Hazardous Ingredient	% wt.	CAS Number	LD50	LC50	TDG PIN
Formaldehyde	<4	50-00-0	100 mg/kg oral rat 42 mg/kg oral mouse	203 mg/m <sup>3</sup> inhalation rat 505 mg/m <sup>3</sup> /2hr inhalation mouse	Not Regulated
Methanol	<4	67-56-1	5,600 mg/kg oral rat 7,300 mg/kg oral mouse	64,000 ppm/4 hr. inhalation rat 81,000 mg/m <sup>3</sup> /14hr rabbit	
Monosodium phosphate	NA	7558-80-7	NA	NA	
Disodium phosphate	NA	7558-79-4	17 gm/kg oral rat	NA	

<b>Section 4. First Aid Measures</b>	
<b>Eye Contact</b>	Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation persists.
<b>Skin Contact</b>	Remove contaminated clothing immediately. Wash the affected areas with soap or mild detergent and large amounts of water for at least 15 minutes.
<b>Inhalation</b>	Move individual to fresh air immediately. If breathing is difficult, give oxygen. If breathing has stopped, administer artificial respiration. Get medical attention.
<b>Ingestion</b>	Never give anything by mouth to an unconscious person. Get medical attention immediately.

<b>Section 5. Physical Data</b>				
Physical State Aqueous Solution	Odor and Appearance Pungent odor, colorless	Odor Threshold (ppm) 0.1 ppm formaldehyde	Solubility Easily soluble in water	Auto-ignition Temp 795° F (423° C)
Vapor Pressure 2.7mmHg@ 20C (MeOH)	Vapor Density 1.04 (air-1)	Evaporation Rate >1	Boiling Point 212° F (100° C)	Flash Point CC >200° F (93.3° C)
pH Neutral	Specific Gravity 1.022 Water=1	Coeff. Water/oil Dist. N/A	Freezing Point -133° F (-92° C)	Flammable Limits NA

<b>Section 6. Fire and Explosion</b>		
Flammability Not flammable	Conditions NA	Fl. Pt - Auto Ignition - Flammable Limits See Physical Data above
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	

<b>Section 7. Reactivity</b>		
Stability Product is stable under normal conditions of use.	Hazardous Decomposition Products Strong vapors and irritants, carbon monoxide, carbon dioxide	
Conditions of Reactivity NA	Hazardous Polymerization No hazardous polymerization.	Incompatibility Reactive with oxidizing materials, acids and alkalis

<b>Section 8. Toxicological Properties</b>						
Routes of Entry	Skin/eye contact, inhalation and ingestion.			Target Organs	Skin, eyes and respiratory tract	
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.						
Effects of Chronic Exposure Effects may be delayed. Formaldehyde has been associated with nasopharyngeal cancers. Repeated exposure may cause skin discoloration and nail decay. Inhalation may worsen conditions such as emphysema or bronchitis. Repeated skin exposure may cause defatting of the skin.						
Carcinogenic Effects Methanol is not classified as a human carcinogen. Formaldehyde - Potential Cancer Hazard – classified proven by NIOSH, classified A2 (suspected for human) by ACGIH, classified A2 (Probable for human) by IARC, Classified 2 (Reasonably anticipated) by NTP.						
Reproductive Toxicity – Animal embryotoxin						
Teratogenic and Mutagenic Effects NA						
Exposure Limits	OSHA PEL TWA	ACGIH TLV TWA	STEL	TWAEV (Ont.)	STEV (Ont.)	CEV (Ont.)
Formaldehyde	0.75 ppm, 0.5 Action	0.3 ppm Ceil	2 ppm	1.0 ppm	2.0 ppm	1.5 ppm
Methanol	260 ppm	200 ppm	250 ppm	200 ppm	250 ppm	NA
Monosodium phosphate	NA	NA	NA	NA	NA	NA
Disodium phosphate	NA	NA	NA	NA	NA	NA

<b>Section 9. Regulatory Information</b>			
OSHA Hazardous Highly toxic 29CFR1910.1048	Cal. Prop. 65 Listed as carcinogen	Canadian WHMIS D1A, D2A, D2B, E	RCRA Regulated U122
SARA 302/304 Listed	SARA 313 Listed	CERCLA 102A Listed	RQ 100 lbs. Formaldehyde
CWA 307 Listed	CWA 311 Not Listed	CAA 112 Release Prevention Listed	CAA 112 Reg. Flam. Substance Not Listed
CAA 112 Reg. Toxic Substance Not Listed	TSCA Inventory All ingredients listed	EEC Flammability NA	CEPA DSL All Ingredients Listed
Proper US DOT Shipping Name Air Transport Only - Aviation Regulated Liquid, NOS, (<4% Formaldehyde), 9, UN3334, PGIII	TDG Classification Not regulated	IATA Classification Not regulated	Limited Quantity No
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.