

MATERIAL SAFETY DATA SHEET

FLEXIBLE COLLODION

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SECTION 1 - PRODUCT IDENTIFICATION AND HAZARDOUS COMPONENTS

PRODUCT: Flexible Collodion USP

SYNONYMS: N/A

MOLECULAR FORMULA: Mixture (Pyroxylin, Ethanol, Ether, Castor Oil, Camphor)

CHEMICAL FAMILY: N/A

<u>INGREDIENT (CAS #)</u>	<u>%</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Ethyl Ether (60-29-7)	70-75	400 ppm	400 ppm
Ethanol (64-17-5)	21-25	1,000 ppm	1,000 ppm
Pyroxylin (9004-70-0)	5-10	N/A	N/A
Camphor (76-22-2)	2	2 mg/m ³	2 ppm

SECTION 2 - PHYSICAL AND CHEMICAL CHARACTERISTICS

BOILING POINT: 34°C

VAPOR PRESSURE: N/A

MELTING POINT: N/A

VAPOR DENSITY: N/A

SPECIFIC GRAVITY: 0.77-0.79
(WATER = 1)

EVAPORATION RATE: N/A
(BUTYL ACETATE = 1)

WATER SOLUBILITY: Negligible

WATER REACTIVE: No.

APPEARANCE AND ODOR: Pale yellow, syrupy liquid with the odor of ether.

SECTION 3 - FIRE AND EXPLOSION DATA

FLASH POINT (METHOD): -45°C (CC)

AUTOIGNITION TEMPERATURE: N/A

FLAMMABLE LIMITS: LOWER: 2%

UPPER: 36%

EXTINGUISHING MEDIA: Alcohol foam, carbon dioxide, dry chemical (water may be ineffective).

SPECIAL FIRE FIGHTING PROCEDURES: Fire fighters should wear self-contained breathing apparatus with full facepiece in positive pressure mode and full protective gear. Move containers from fire area or cool with water spray if possible.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Acts in same manner as ether; vapors may flow along surfaces to distant ignition sources and flash back. Closed containers exposed to heat may explode. Contact with strong oxidizers may cause fire. Will emit toxic fumes when heated to decomposition (as under fire conditions) such as; nitrogen oxides, hydrogen cyanide, carbon monoxide and carbon dioxide.

SECTION 4 - REACTIVITY HAZARD DATA

STABILITY: Stable () Unstable ()

INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizing agents, strong acids, strong bases, amines. Avoid exposure to heat, flame, ignition sources, light or shock.

HAZARDOUS DECOMPOSITION PRODUCTS: Nitrogen oxides, hydrogen cyanide, carbon monoxide, carbon dioxide.

HAZARDOUS POLYMERIZATION: May Occur () Will Not Occur ()

SECTION 5 - HEALTH HAZARD DATA

Toxicity and health data listed are for ethyl ether.

TOXICITY: TLV/TWA: 1200 mg/m³ (400 ppm)
STEL: 1500 mg/m³ (500 ppm)
PEL: 1200 mg/m³ (400 ppm)

CARCINOGEN LISTED BY: NTP Yes () No (X)
 IARC Yes () No (X)
 OSHA Yes () No (X)
 Other Yes () No (X)

ROUTES OF ENTRY: Inhalation, ingestion, contact.

SIGNS AND SYMPTOMS OF OVEREXPOSURE:

INHALATION: May cause headache, nausea, vomiting, dizziness, narcosis, suffocation, depressed blood pressure, central nervous system depression.

EYE CONTACT: Will cause irritation.

SKIN CONTACT: May cause irritation.

INGESTION: May cause irritation of gastrointestinal tract, nausea, vomiting.

CHRONIC EFFECTS OF OVEREXPOSURE: May be toxic if ingested or inhaled.

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: Respiratory and gastrointestinal tract irritation, depressed central nervous system function.

EMERGENCY FIRST AID PROCEDURES:

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention immediately.

EYE CONTACT: Flush eyes with water for at least 15 minutes. Seek medical attention immediately.

SKIN CONTACT: Flush with water for at least 15 minutes. If irritation develops or persists, seek medical attention.

INGESTION: Do **NOT** induce vomiting. Seek medical attention or contact a poison control center immediately.

SECTION 6 - CONTROL AND PROTECTIVE MEASURES

RESPIRATORY PROTECTION: NIOSH-approved respirator with organic vapor cartridge is recommended. If airborne levels exceed capabilities of cartridge respirator, a self-contained breathing apparatus should be used.

PROTECTIVE GLOVES: Rubber.

EYE PROTECTION: Safety goggles. Avoid wearing contact lenses when working with this or any chemical due to the possibility of increased severity of eye damage.

VENTILATION: General or local exhaust to minimize airborne levels.

OTHER PROTECTIVE EQUIPMENT: Appropriate laboratory apparel. Make sure that fire extinguishers are nearby and ready for use in case of emergency.

HYGIENIC WORK PRACTICES: Do not eat, drink or smoke near this material.

SECTION 7 - HANDLING AND STORAGE PRECAUTIONS

HANDLING PRECAUTIONS: Avoid contact with eyes, skin or clothing and avoid inhalation of vapors. Wash thoroughly after handling and wash contaminated clothing before reuse.

STORAGE PRECAUTIONS: Keep container tightly closed. Store in a cool, dry, well-ventilated, flammable liquid storage area away from any ignition sources.

OTHER PRECAUTIONS: Ground metal containers when transferring liquids.

SECTION 8 - SPILL AND DISPOSAL PROCEDURES

STEPS TO BE TAKEN IN CASE OF SPILL OR DISCHARGE: Wear self-contained breathing apparatus and all protective gear. Eliminate any ignition sources. Use water spray to reduce airborne vapors. Mop up with sand or absorbent material and place in a tight container for later disposal. Wash thoroughly or shower after handling and wash all clothing and protective gear before reuse.

WASTE DISPOSAL METHOD: Dispose of in accordance with all applicable local, state, federal and environmental regulations.

SECTION 9 - DISCLAIMER

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DEFINITIONS OF ABBREVIATIONS USED:

ACGIH:	American Conference of Governmental Industrial Hygienists
CAS:	Chemical Abstract Service
IARC:	Internal Agency for Research on Cancer
IDLH:	Immediately Dangerous to Life or Health level
LC ₅₀ :	Median Lethal Concentration
LD ₅₀ :	Median Lethal Dose
MSHA:	Mine Safety and Health Administration
N/A:	Not available
NIOSH:	National Institute for Occupational Safety and Health
NTP:	National Toxicology Program
OSHA:	Occupational Safety and Health Administration
PEL:	Permissible Exposure Limit
STEL:	Short Term Exposure Limit
TLV:	Threshold Limit Value
TWA:	Time Weighted Average