

MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

TRADE NAME: Methanol (as used in Protein Assay Kits I and II and Dye Reagent Concentrate)

Catalog No.: 500-0001, 500-0002, 500-0006

Chemical identity, Common names: Methanol; Methyl alcohol; Carbinol; Wood alcohol; Wood naphtha, Methyl hydroxide.

Formula: CH₃OH

M.W.: 32.04

MANUFACTURER'S NAME:

BIO-RAD LABORATORIES

2000 ALFRED NOBEL DRIVE

HERCULES, CALIFORNIA 94547

EMERGENCY PHONE No:

510/232-7000

DATE PREPARED OR REVISED: March 28, 1994

NAME OF PREPARER: Roy Wood

II. HAZARDOUS INGREDIENTS

This product contains the following toxic chemical subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372:

CHEMICAL NAMES	CAS NUMBERS	PERCENT*	EXPOSURE LIMITS IN AIR		
			ACGIH TLV (TWA)	OSHA PEL (TWA)	OTHER
Methanol	67-56-1	25%	200 ppm	200 ppm	ACGIH TLV 250 ppm (STEL)

LD50: 5628 mg/kg oral-rat (RTECS)

TWA = 8-hour Time Weighted Average

STEL = Short Term Exposure Limit (15 minute)

*The other 75% of the mix is 25% water and 50% phosphoric acid [see MSDS #500-0001(b)].

III. PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT: 64.5° C (148° F)

SPECIFIC GRAVITY(H₂O = 1): 0.79

VAPOR PRESSURE: 97 mm Hg at 20° C

MELTING POINT: -98° C (-144° F)

EVAPORATION RATE (BUTYL ACETATE = 1): 5.9

VAPOR DENSITY(AIR = 1): 1.1

SOLUBILITY IN WATER: Complete

APPEARANCE AND COLOR: Clear liquid, alcohol odor.

IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 101° F (for a 25% solution)
(METHOD USED): Closed Cup

FLAMMABLE LIMITS: LEL=6%

UEL=36%

EXTINGUISHING MEDIA: Alcohol foam, carbon dioxide, dry chemical or water fog.

SPECIAL FIRE FIGHTING PROCEDURES: Fire fighters should wear full protective clothing and self-contained breathing apparatus with full facepiece. Use water to keep fire-exposed containers cool.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Vapor is heavier than air and may travel along the ground. Never use a welding or cutting torch near container (even empty). This material may burn with a flame which is invisible in daylight.

V. HEALTH HAZARD INFORMATION

SYMPTOMS OF OVEREXPOSURE (for each potential route of exposure):

INHALED: Excessive inhalation can cause nasal and respiratory irritation, visual disturbance, blurred vision, dizziness, giddiness, weakness, fatigue, nausea, vomiting, headache, possible unconsciousness, and asphyxiation.

CONTACT WITH SKIN OR EYES: Can cause irritation, tearing, blurred vision, drying of skin, and dermatitis.

ABSORBED THROUGH SKIN: May be absorbed through intact skin and produce systemic effects.

SWALLOWED: Can cause gastrointestinal irritation, headache, nausea, vomiting, blindness, unconsciousness, and death.

HEALTH EFFECTS OR RISKS FROM EXPOSURE

ACUTE: Poison! Swallowing or breathing high concentrations of methanol may produce headache, vomiting, nausea, irritation, dizziness, weakness, fatigue, giddiness, blurred vision, unconsciousness, blindness, and death. Methanol is extremely corrosive to the eyes.

Brief eye contact with the liquid or mist will severely damage the eyes and prolonged eye contact can cause permanent eye injury which may be followed by blindness.

Skin contact may irritate the skin, causing dermatitis. Methanol may be absorbed through intact skin, causing systemic effects.

CHRONIC: Marked impairment of vision, central nervous system damage, and death have been reported after prolonged or repeated exposure. Methyl alcohol may cause liver damage.

FIRST AID: EMERGENCY PROCEDURES

EYE CONTACT: Flush with large amounts of water for at least 15 minutes, lifting upper and lower lids occasionally. Get medical attention.

SKIN CONTACT: Flush skin with large amounts of water for at least 15 minutes, while removing contaminated clothing and shoes. Wash clothes before reuse. Get medical attention.

INHALED: Remove victim to fresh air. If breathing has stopped, give artificial respiration. Keep person warm. Get medical attention.

SWALLOWED: If conscious, immediately induce vomiting by giving two glasses of water and sticking a finger down the throat. After vomiting, give milk or water. Never give anything by mouth to an unconscious or convulsing person. Get medical attention immediately.

SUSPECTED CANCER AGENT

☒ **NO:** THIS PRODUCT'S INGREDIENTS ARE NOT FOUND IN THE LISTS BELOW.

YES: ☐ FEDERAL OSHA ☐ NTP ☐ IARC

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Those individuals with diseases of the eyes, liver, kidneys, and skin may be at increased risk from exposure.

VI. REACTIVITY DATA

STABLE ☒

UNSTABLE ☐

CONDITIONS TO AVOID: Heat, sparks, and open flame.

INCOMPATIBILITY (Materials to avoid): Strong oxidizing agents, reactive metals which will displace hydrogen.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon oxides and formaldehyde may form when heated to decomposition.

HAZARDOUS POLYMERIZATION MAY OCCUR ☐ **WILL NOT OCCUR** ☒

CONDITIONS TO AVOID: Heat, sparks, and open flame.

VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

SPILL RESPONSE PROCEDURES: Dike and cover spill with noncombustible absorbent. Wear protective clothing including rubber apron, rubber gloves, rubber boots, chemical goggles, and face shield. Wear an appropriate NIOSH-approved respirator. Eliminate all ignition sources.

PREPARING WASTES FOR DISPOSAL: Comply with all applicable federal, state, and local regulations on spill reporting, waste handling, and waste disposal.

VIII. SPECIAL HANDLING INFORMATION

VENTILATION AND ENGINEERING CONTROLS: Provide sufficient mechanical explosion proof ventilation to maintain exposure below exposure limits.

RESPIRATORY CONTROLS: Wear a NIOSH-approved respirator appropriate for the vapor concentration at the point of use. Appropriate respirators may be a supplied-air respirator or a self-contained breathing apparatus.

EYE PROTECTION: Chemical splash goggles or face shield.

GLOVES: Wear resistant gloves such as neoprene.

OTHER CLOTHING AND EQUIPMENT: Impervious clothing and boots.

WORK PRACTICES, HYGIENIC PRACTICES: Use good laboratory practices. Wash hands after using and before eating. Do not eat, drink, or smoke in the work area. Keep away from heat, sparks, and flames.

OTHER HANDLING AND STORAGE REQUIREMENTS: Store in closed containers. All handling equipment should be electrically grounded. Store in a cool, dry, well-ventilated place away from incompatible materials. Store in a flammable liquid storage area or cabinet. An eye wash and safety shower should be nearby and ready for use.

PROTECTIVE MEASURES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Protective clothing and appropriate respiratory protection should be worn. Do not cut, grind, weld, or drill on or near containers. Electrically ground all equipment and use only non-sparking tools.

We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and conditions of use of the product are not within the control of Bio-Rad, it is the user's responsibility to handle the product under conditions of safe use.