

2982 NORTH LAKESHORE ROAD
PORT HOPE, MICHIGAN 48468

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R1387

MATERIAL SAFETY DATA SHEET

000303

Required under USDL Safety and Health Regulations for Ship Repairing,
Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME North American Philips Lighting Corp.		EMERGENCY TELEPHONE NO. (606) 236-3100
ADDRESS (Number, Street, City, State, and ZIP Code) P. O. Box 88 - Danville, KY 40422		
CHEMICAL NAME AND SYNONYMS Alkali-lead Glass	TRADE NAME AND SYNONYMS Code 0010	
CHEMICAL FAMILY Glass	FORMULA NA	

SECTION II - HAZARDOUS INGREDIENTS

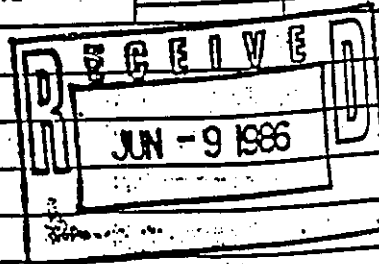
PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)
Lead				20	
Arsenic				0.2	
(Materials in an insoluble matrix)					

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	NA	SPECIFIC GRAVITY (M ₂ O=1)	2.800 gm/cm ³
VAPOR PRESSURE (mm Hg.)	NA	PERCENT VOLATILE BY VOLUME (%)	NA
VAPOR DENSITY (AIR=1)	NA	EVAPORATION RATE (= 1)	NA
SOLUBILITY IN WATER	NA		
APPEARANCE AND ODOR	Transparent solid - No odor		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	NA	FLAMMABLE LIMITS	Let	Uel
EXTINGUISHING MEDIA	NA			
SPECIAL FIRE FIGHTING PROCEDURES	NONE			
UNUSUAL FIRE AND EXPLOSION HAZARDS	NONE			
Will not burn or support combustion				



SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

None established

EFFECTS OF OVEREXPOSURE

EMERGENCY AND FIRST AID PROCEDURES

SECTION VI - REACTIVITY DATA

STABILITY

UNSTABLE

CONDITIONS TO AVOID

STABLE

X

INCOMPATIBILITY (Materials to avoid)

Avoid contact with hydrofluoric acid

HAZARDOUS DECOMPOSITION PRODUCTS

HAZARDOUS POLYMERIZATION

MAY OCCUR

CONDITIONS TO AVOID

WILL NOT OCCUR

X

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

WASTE DISPOSAL METHOD

Deposit in landfill in accordance with local, State and Federal regulations.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)

NA

VENTILATION

LOCAL EXHAUST

SPECIAL

MECHANICAL (General)

OTHER

PROTECTIVE GLOVES

EYE PROTECTION

Recommended

OTHER PROTECTIVE EQUIPMENT

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

NO special precautions required

OTHER PRECAUTIONS

7861 9-117

IV. FIRE AND EXPLOSION DATA FOR METHANOL

FLASH POINT	FLAMMABILITY LIMITS IN AIR (% by Volume)	AUTO IGNITION TEMP.
11°C (52°F) TCC	Lower 6% Upper 36%	385°C (725°F)

FIRE EXTINGUISHMENT MEDIA: Purple K dry chemical powder, AFFF (aqueous film forming foam), alcohol resistant type with 6% foam proportioning equipment, or CO₂.

SPECIAL FIRE-FIGHTING PROCEDURES: Class 1B flammable liquid. Vapors are slightly heavier than air and may flow along surface to ignition sources. Water may be ineffective in "indepth methanol fires". Use fine water spray or fog to control fire spread and to cool structures or containers. Fire fighters should use self contained breathing apparatus and protective clothing.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Methanol burns with a clean, clear flame, being almost invisible in daylight. Reacts with oxidizers.

V. REACTIVITY DATA

STABILITY: Stable

HAZARDOUS POLYMERIZATION will not occur.

MATERIAL TO AVOID: Avoid strong oxidizing agents, excessive heat, sources of ignition.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, formaldehyde.

VI. OCCUPATIONAL EXPOSURE LIMITS

OSHA TLV - 200 ppm 8 hr TWA (260mg/m³) Skin
ACGIH (1984) APOS "Skin" notation

VII. HEALTH HAZARD INFORMATION FOR METHANOL

EMERGENCY AND FIRST AID

INHALATION: Remove promptly to fresh air, restore or assist breathing, administer oxygen as required, obtain medical attention.

INGESTION: If conscious, dilute stomach contents by giving large amounts of water or milk and induce vomiting. Transport to medical attention immediately.

EYES: Spread eyelids with fingers and flush eye for a minimum of 15 minutes, keep rotating the eyes to ensure complete flushing. Seek medical attention if irritation persists or any loss of vision occurs.

SKIN: Immediately remove contaminated clothing and wash under shower with soap and water for a minimum of 15 minutes. Seek medical attention if blurring of vision or dizziness occurs.

MATERIAL SAFETY DATA SHEET

METHANOL

MSDS Revised 5 November, 1985

ALBERTA GAS CHEMICALS LTD.

P.O. BOX 1100

MEDICINE HAT, ALBERTA

TLA 7H1

IN CASE OF EMERGENCY

24 HR. EMERGENCY TELEPHONE NO. (403) 527-8141

U.S. Chemtrec: (800) 424-9300

Canada Canutec: (613) 996-6666

I. PRODUCT IDENTIFICATION

PRODUCT NAME:	Methanol
CHEMICAL SYNONYMS:	Methyl Alcohol, Wood Alcohol
CHEMICAL FAMILY/FORMULA:	Alcohols, CH ₃ OH
CAS REGISTRATION NO.:	67-56-1
U.N. NO.:	1230
HAZARD RATING:	1 Health 3 Fire 0 Reactivity
N.F.P.A. CODES:	(0 least, 1 slight, 2 moderate, 3 high, 4 extreme)

II. HAZARDOUS COMPONENTS

COMPONENT:	PERCENT	ACGIH TLV	S.T.E.L.
Methyl Alcohol:	99.85	200 ppm (260mg/m ³)	250 ppm (328mg/m ³) (SKIN)
TOXICITY DATA:		Oral (rat) LD 50 = 13,000 mg/kg	
		Inhalation (monkey) LC 50 = 1000 ppm	
		Dermal (rabbit) LD 50 = 20,000 mg/kg	

III. PHYSICAL DATA FOR METHANOL

Boiling Point:	64.5°C (148°F)
Vapor Density (air = 1)	1.105 ⁰ 15 ⁰ C
Melting Point:	-97.8°C (-144°F)
Vapor Pressure (mm Hg):	96 mmHG @ 20°C (68°F)
Evaporation Rate (Butyl Acetate = 1):	4.6
Solubility in water % by wt.:	Totally Miscible
Volatile % by volume:	100%
Specific Gravity (H ₂ O = 1):	.792
Appearance:	clear, colorless liquid with no suspended matter
Odor:	slight alcohol odor

IX. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: Provide adequate general or local ventilation to maintain concentration of methanol below 200 ppm. If TLV of methanol is exceeded, approved breathing air supply system or self contained breathing apparatus is required.

FACE AND EYE PROTECTION: A minimum standard for handling methanol is face shield and safety glasses with side shields, and in areas where transferring is taking place, chemical splash goggles and face shields must be worn.

BODY PROTECTION: Wear chemical resistant pants and jacket preferably neoprene.

HAND/FOOT PROTECTION: To prevent repeated or prolonged skin contact wear chemical resistant gloves and boots.

X. SPECIAL PRECAUTIONS AND HANDLING

- A. No smoking or open flame in storage handling area.
- B. Use explosion proof electrical equipment.
- C. Safety shower and eye wash must be provided in handling area.
- D. Ensure that proper grounding procedures are in place.
- E. Fire fighters should use self contained breathing equipment.
- F. Methanol storage tanks should be inert gas blanketed.
- G. Avoid using materials made of aluminum or lead.
- H. Gaskets should be flexitalic (spirally wound stainless steel with asbestos).
- I. Avoid natural rubbers, use neoprene.

REFERENCES USED TO COMPLETE MSDS

ACGIH - Documentation of Threshold Limit Values, 1980 and updates to 1984.
Alberta - O.H.&S Act (0-2) and Regulations AR-8/82. Proctor and Hughes - Chemical Hazards of the Workplace (1978). SAX - Dangerous Properties of Industrial Materials, 6th Ed. (1984). Clinical Toxicology of Commercial Products, 5th Edition, Hand Book of Poisons, 11th Edition.

While the information contained in this document is believed to be reliable as of the date of issue, such information is nonetheless of a general nature. The material described can be hazardous if not handled and processed properly. Alberta Gas Chemicals Ltd. must rely upon the user of methanol to utilize the information supplied to develop appropriate work and use practices. All statements and suggestions are made without any warranty, express or implied regarding the completeness or accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use of the material.

EFFECTS OF OVER EXPOSURE

Methanol is harmful by inhalation of vapors, ingestion of liquid or by prolonged or repeated contact with the skin. In the body, the products formed by its oxidation are formaldehyde and formic acid, both of which are toxic.

INHALATION: 1,000 ppm may cause irritation of mucous membranes.
5,000 ppm may result in stupor (intoxication) or sleepiness.
50,000 ppm may result in narcosis (deep unconsciousness) in one or two hours, and eventually result in death.

INGESTION: Can cause blindness, dizziness, headache, nausea. One to four ounces can cause death.

SKIN: Prolonged or repeated contact causes dryness and cracking (dermatitis) of the skin, due to its solvent action.

EYE: Irritation of eye upon contact.

CARCINOGENICITY: I.A.R.C. monographs do not list methanol as a carcinogen.

MEDICAL CONDITIONS: Inhalation of methanol vapor may worsen condition such as emphysema and bronchitis.

NOTE TO PHYSICIAN: Toxic effects from repeated contact to methanol are accumulative and affect the central nervous system, especially the optic nerve. Symptoms can be slow to appear, from 9 to 36 hours after exposure and they may last for several days.

VIII. SPILL OR LEAK PROCEDURE

SPILL CLEAN UP PROCEDURE:

SMALL: Eliminate all ignition sources, stop spill and use absorbent materials to soak up spill areas.

LARGE: Eliminate all ignition sources, stop spill at source, contain spill area by diking, recover methanol or dilute with water to reduce fire hazard and salvage the liquid by using recommended absorbent material. Prevent methanol from entering sewer, drains or waterways. If methanol has entered these, dilute with very large amounts of water and notify proper authorities.

WASTE DISPOSAL: Waste material must be disposed of in accordance with your Local, State, Provincial or Federal regulations. Contact the proper authorities for specific instructions or contact AGCL's 24 hour emergency telephone number: 1-403-527-8141.