

Material Safety Data for: Hexylene Glycol

1. PRODUCT IDENTIFICATION

Name	2-methyl-2,4-pentanediol
Synonyms	hexylene glycol; 2,4-pentanediol, 2-methyl-
CAS#	107-41-5
Europe EC#	203-489-0
Product Uses	hydraulic fluid, printing ink solvent, fuel & lubricant additive; defoamer, etc

2. INGREDIENTS

	%	TWAEV / TLV mg/m ³	LD ₅₀ ORAL	(mg/kg) SKIN	LC ₅₀ ppm INHALATION
2-methyl-2,4-pentanediol	100%	25 / 120	2800	7900	310*

3. (a) HAZARDS SUMMARY

Hazards, Quick Guide: irritating to eyes; burns under fire conditions; combustion products may be toxic

Canada – WHMIS

Key:

D 2B

B 2 – Flash Point <38°C, **B 3** – Flash Point >38°C & <93°C

D 1 – Immediately Toxic, **D 2** – Chronic Toxicity

C – Oxidising Substance, **E** – Corrosive

U.S.A. – HMIS

Key:

Health – 1, Fire – 1, Reactivity – 0

0=minimal, 1=slight, 2=moderate, 3=serious, 4=severe

3. (b) HAZARDS – TOXICITY

Effects, Acute Exposure

Skin Contact	little to no effect
Skin Absorption	slight; no toxic effects likely by this route
Eye Contact	liquid severely irritating; vapour irritating above 50ppm (<i>max. vapour conc. at 20°C</i>)
Inhalation	slightly irritating above 500ppm (<i>aerosol</i>), strongly irritating above 5000ppm
Ingestion	not known; low toxicity – not a route of industrial exposure

Effects, Chronic Exposure

General	prolonged exposure may cause dermatitis
Sensitising	not a sensitiser in humans or animals
Carcinogen/Tumorigen	not considered a tumorigen or a carcinogen in humans or animals
Reproductive Effect	no known effect in humans or animals
Mutagen	no known effect on humans or animals
Synergistic With	not known
LD ₅₀ (oral)	3100mg/kg (mouse), 3200mg/kg (rabbit), 3700mg/kg (rat), 2580mg/kg (guinea pig)
LD ₅₀ (skin)	7900 & 12,260mg/kg (rabbit)
LC ₅₀ (inhalation)	66ppm / 310mg/m ³ (rat)*

Please ensure that this MSDS is given to, and explained to people using this product.

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4. FIRST AID

SKIN: Wash with plenty of water. Remove contaminated clothing and do not reuse until thoroughly laundered.
 EYES: Wash eyes with plenty of water, holding eyelids open. Seek medical assistance promptly if there is irritation.
 INHALATION: Remove from contaminated area promptly. **CAUTION: Rescuer must not endanger himself!** If breathing stops, administer artificial respiration and seek medical aid promptly.
 INGESTION: Give plenty of water to dilute product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, lower victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.
Inadvertent inhalation of vomited material may seriously damage the lungs. The danger of this is greater than the risk of poisoning through absorption of this relatively low-toxicity substance. The stomach should only be emptied under medical supervision, and after the installation of an airway to protect the lungs.

5. PHYSICAL PROPERTIES

Odour & Appearance	clear, colourless, odourless, somewhat viscous, hygroscopic liquid
Odour Threshold	not known - odourless
Vapour Pressure	0.05mmHg / 0.0066kPa (20°C / 68°F)
Evaporation Rate (<i>Butyl Acetate = 1</i>)	0.003
Vapour Density (air = 1)	4.1
Boiling Range	198°C / 388°F
Freezing Point	-50°C / -58°F
Specific Gravity	0.922 (20/20°C)
Water Solubility	complete
Also soluble in	most organic solvents including aromatic hydrocarbons; soluble in fatty acids
Viscosity	34centipoise (25°C / 77°F)
pH	none – (<i>does not liberate hydrogen ions when dissolved</i>)
Conversion Factor	1ppm = 4.8mg/m ³
Molecular Weight	118grams per mole

6. FLAMMABILITY & FIRE FIGHTING

Flash Point	above 94°C / above 201°F (closed cup)
Autoignition Temperature	306°C / 583°F
Flammable Limits	1.2% – 8.1%
Combustion Products	carbon monoxide, nitrogen oxides, smoke, part oxidised hydrocarbon fragments
Fire Fighting Precautions	foam, dry chemical, water fog, water spray; fire fighters must wear SCBA
Static Charge Accumulation	cannot accumulate a static charge on agitation or pumping

7. STABILITY / REACTIVITY

Dangerously Reactive With	strong oxidising agents; perchloric acid, strong acids
Also Reactive With	strong alkalies cause rapid evolution of flammable hydrogen gas
Stability	stable; will not polymerize
Decomposes in Presence of	strong, hot alkalies
Decomposition Products	flammable hydrogen gas
Sensitive to Mechanical Impact	no

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8. PROTECTIVE EQUIPMENT / EXPOSURE CONTROL

ACGIH TLV	25ppm / 125mg/m ³
OSHA PEL	25ppm / 125mg/m ³
STEL	not listed
Ventilation	mechanical ventilation may be required to control airborne titre to regulated limits if product is strongly heated or misted in handling
Hands	probably not required; nitrile gloves may be used – <i>other types may also protect; consult supplier</i>
Eyes	safety glasses with side shields – <i>always protect the eyes</i>
Clothing	no special protective clothing required

9. HANDLING & STORAGE

Store in a cool, dry environment, away from sources of ignition and oxidising agents. Always ensure that containers, whether empty or full, or part full, are tightly sealed unless in use. Product vapour or mist irritates the eyes. Avoid exposure to mist or vapour; ventilate workplace if product is handled hot or if mist is generated.

Never cut, drill, weld or grind on or near this container. Avoid prolonged contact with skin and wash work clothes frequently. An eye bath and safety shower must be available near the workplace.

10. SPILL PROCEDURES

Leak Precaution	dyke to control spillage and prevent environmental contamination
Handling Spill	ventilate contaminated area; recover free liquid with suitable pumps; absorb residue on an inert sorbent, sweep, shovel, & store in closed containers for recycling or disposal

11. DISPOSAL

Waste Disposal	do not flush to sewer , recycle solvent if possible, may be incinerated in approved facility
Containers	Drums should be reused. Recondition and pressure test by a licensed reconditioner prior to re-use. Pails must be vented and thoroughly dried prior to crushing and recycling. IBCs (intermediate bulk containers): polyethylene bottle must be pressure tested & recertified at 30 months. Replace at 60 months (5yrs). Steel containers must be inspected, pressure tested & recertified every 5 years. <i>Never cut, drill, weld or grind on or near this container, even if empty</i>

12. ENVIRONMENTAL INFORMATION

Bioaccumulation	readily eliminated and is not a bioaccumulator
Biodegradation	degrades readily & rapidly in the presence of oxygen; 56% to 95% biodegradation in 5 days
Abiotic Degradation	reacts with atmospheric hydroxyl radicals; its estimated half-life in air is 1.6 days
Mobility in soil, water	water soluble and will move readily in soil and water
Aquatic Toxicity	
LC ₅₀ (Fish, 96hr)	12,000mg/litre (Carassius auratus), 9910mg/litre (Gambusia affinis), 12,350mg/litre (Ictalurus punctatus), 12,800mg/litre (Lepomis macrochirus), 8690mg/litre (Pimephelas promelas), 9450mg/litre (Salmo gairdneri), 8000mg/litre (Alburnus alburnus), & others
EC ₅₀ (Crustacea, 48hr)	3200, 5410 & 8700mg/litre (Daphnia magna), 7600mg/litre (Nitrocra spinipes), 3300mg/litre (Daphnia pulex), 16,500mg/litre (Orconnectes ilmmunis), & others
EC ₅₀ (Bacteria)	3070mg/litre (Photobacterium phosphoreum)

Hexylene Glycol's aquatic toxicity is very low.

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13. TRANSPORT REGULATIONS

Canada TDG	PIN	UN- not regulated for transport
AND	Shipping Name	not regulated for transport
U.S.A. 49 CFR	Class	not regulated for transport
	Packing Group	not regulated for transport
Marine Pollutant		not a marine pollutant

14. EMERGENCY INFORMATION

Canada	Call CANUTEC (collect)	(613) 996-6666
U.S.A.	Call CHEMTREC	(800) 424-9300

15. REGULATIONS

Canada DSL	on inventory
U.S.A. TSCA	on inventory
Europe EINECS	on inventory

Allowable Tolerances: 2-Methyl-2,4-pentanediol is exempted from the requirement of a tolerance when used as a solvent for formulations used before crop emerges from soil in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops only.

NIOSH Recommendations: Recommended Exposure Limit: Ceiling value: 25 ppm (125 mg/cu m).

Threshold Limit Values: Ceiling Limit: 25 ppm.

FIFRA Requirements: As the federal pesticide law FIFRA directs, EPA is conducting a comprehensive review of older pesticides to consider their health and environmental effects and make decisions about their future use. Under this pesticide reregistration program, EPA examines health and safety data for pesticide active ingredients initially registered before November 1, 1984, and determines whether they are eligible for reregistration. In addition, all pesticides must meet the new safety standard of the Food Quality Protection Act of 1996. Pesticides for which EPA had not issued Registration Standards prior to the effective date of FIFRA, as amended in 1988, were divided into three lists based upon their potential for human exposure and other factors, with List B containing pesticides of greater concern and List D pesticides of less concern. 2-Methyl-2,4-pentanediol is found on List C. Case No: 3075; Case Status: No products containing the pesticide are actively registered ... The case /is characterized/ as "cancelled." Under FIFRA, pesticide producers may voluntarily cancel their registered products. EPA also may cancel pesticide registrations if registrants fail to pay required fees or make/meet certain reregistration commitments, or if EPA reaches findings of unreasonable adverse effects. 2-Methyl-2,4-pentanediol is exempted from the requirement of a tolerance when used as a solvent for formulations used before crop emerges from soil in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops only.

16. PREPARATION INFORMATION

Prepared for Megaloid Laboratories by Peter Bursztyn, (705) 734-1577

With data from RTECS, Haz. Substance Data Base, Cheminfo (CCOHS), IUCLID Datasheets (European Chem. Substance Info. System), & others, as available

*Preparation Date: **September 2004** Revision Date: **September 2007, September 2010***

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