

Materials Safety Data - BUTYL CELLOSOLVE*

*Union Carbide Trade Mark

Shipping Name	NOT REGULATED FOR TRANSPORT
Transport of Dangerous Goods Class	NOT REGULATED FOR TRANSPORT
WHMIS Class	B 3; D 1A; D 2B
Material Use in lubricants	solvent, domestic cleaner, coupling agent

1. HAZARDOUS INGREDIENTS	CAS NUMBER	%	TWAEV (ppm)	LD ₅₀ ORAL	(mg/kg) SKIN	LC ₅₀ ppm INHALATION
Ethylene Glycol Monobutyl Ether (also Butoxy Ethanol, or Glycol Ether EB)	111-76-2	100%	25 (skin)	300	220	450

2. PHYSICAL CHARACTERISTICS

Odour & Appearance household cleaners)	clear colourless liquid with mild pleasant odour (odour is familiar from household cleaners)
Odour Threshold	0.1ppm – 0.5ppm
Vapour Pressure	0.76 mmHg or 0.101 kPa @ 20°C; 300 mmHg (140°C)
Vapour Density (air = 1)	4.1
Boiling Point	171°C
Freezing Point	-70°C
Specific Gravity	0.902 (20°C)
Water Solubility	complete - also soluble in many organic solvents

3. FLAMMABILITY & REACTIVITY

Flash Point	67.8°C
Autoignition Temperature	238°C
Flammable Limits	1.1% - 10.6%
Hazardous Combustion Products	carbon monoxide, nitrogen oxides
Firefighting Precautions floats on wear SCBA	foam, dry chemical, water fog, water spray only to cool, product water - water jet spreads flames; firefighters must wear SCBA
Sensitivity to Static Discharge	not sensitive
Sensitivity to Mechanical Impact	not sensitive
Chemical Stability	stable; will not polymerize
Reactive With	strong oxidizing agents; strong acids or alkalis
Dangerous Decomposition Products	may form explosive peroxides on exposure to air and light

4. TOXICOLOGY

EFFECTS OF ACUTE EXPOSURE

Skin Contact	defatting, drying, mildly irritating
Skin Absorption	yes toxic by this route
Eye Contact permanent damage	liquid very irritating, vapour irritating; may cause inflammation, pain & permanent damage
Inhalation nausea, dizziness	very toxic by inhalation; irritating; nasal discharge, chest pain, coughing, drowsiness, headache
Ingestion intoxication, metabolic	burning sensation in mouth, throat, stomach; dizziness, drowsiness, acidosis, renal damage & respiratory failure were reported in 2 cases of deliberate ingestion

(Butyl Cellosolve, cont'd)

EFFECTS OF CHRONIC EXPOSURE

General	experimental haemolytic agent in rodents - caused blood in urine & reduction in red cells (anaemia) – no such effect reported in humans
Sensitising	no
Carcinogenic	no evidence of carcinogenic or tumorigenic effect in animals or in humans
Reproductive Effect affecting rodents; <i>no known effect in humans</i>	an experimental mutagen and teratogen in rodents exposed to product vapour, musculoskeletal and cardiovascular development in
<i>Carcinogenicity & reproductive toxicity of this product had been assumed from the properties of glycol ethers EM & EE. EB does not follow this pattern.</i>	
Synergistic With	not known
Estimated LD ₅₀ guinea pig	300 mg/kg (oral, rabbit), 470 mg/kg (oral, rat), 1200 mg/kg (oral, mouse & guinea pig)
Estimated LC ₅₀ (inhalation, mouse)	220 mg/kg (skin, rabbit & guinea pig) 450 ppm (inhalation, rat), 630 ppm (inhalation, guinea pig), 700 ppm
NOTE: LD₅₀ & LC₅₀ vary widely between species. Indications are that human toxicity may be lower than the above suggests.	

5. PROTECTIVE EQUIPMENT

Hands	butyl rubber, “Viton”, or “Saranex” gloves
Eyes splashing is possible	safety glasses with side shields or chemical goggles (face shield recommended if splashing is possible)
Respirator	not required if ventilation is adequate (see TWAEV, (1) above)
Clothing	impervious (hands, above) apron, boots, long sleeves, if splashing is anticipated

6. ENVIRONMENT

Leak Precaution	dyke to control spillage and prevent environmental contamination
Handling Spill residue on an	ventilate contaminated area; recover free liquid with explosion-proof pumps; absorb inert sorbent (dry sand, earth) and store in closed containers for disposal
Waste Disposal	do not flush to sewer ; may be incinerated in approved facility

7. STORAGE & HANDLING

Store and use in a cool dry environment, away from sources of ignition, heat and oxidising agents. Use with adequate ventilation. Ground the container before handling to prevent static discharge, which may cause ignition. Do not cut, drill, weld or grind on or near this container - vapour inside may ignite and explode. Explosive peroxides may form on exposure to air - if prolonged storage of a part drum is anticipated, flush headspace with nitrogen prior to sealing. **NOTE: This product is more toxic than most other common solvents. “Skin” designation attached to TWAEV means that vapour or liquid may be absorbed through the skin, adding to total body burden.** Avoid prolonged contact with skin and wash work clothes frequently. An eye bath and safety shower should be available near the workplace.

8. FIRST AID

SKIN:	Wash with soap and plenty of water. Remove contaminated clothing. Do not reuse until thoroughly laundered.
EYES:	Wash eyes with plenty of water, holding eyelids open. Seek medical assistance promptly if any 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 (see below). Keep victim quiet. If vomiting occurs, keep victim’s head below the hips to prevent inhalation of vomited material. Contact Poison Control Centre (800) 668-8205 and seek medical help promptly.

NOTE: Inadvertent inhalation of vomited material may seriously damage the lungs. The risk and danger of this is greater than the risk of poisoning through absorption of this product. The stomach should be emptied under medical supervision, after the installation of an airway to protect the lungs.