

Denatured Ethyl Alcohol
MATERIAL SAFETY DATA SHEET

SECTION 1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

COMPANY IDENTITY: Cumberland Products, Inc.
COMPANY ADDRESS: 50 Commerce Parkway
Hodgenville, KY 42748
COMPANY PHONE: 1-800-223-1918
CHEMTREC PHONE: 1-800-424-9300

PRODUCT NAME: TECSOL A Special Industrial Solvent, 95%
SYNONYM: Denatured Ethyl Alcohol
FORMULA: Mixture

SECTION 2. PRODUCT AND COMPONENT HAZARD DATA

A. COMPONENTS	Approx. Percent	TLV**	CAS Reg. No.
*Ethanol	80	1000 ppm	64-17-5
*Isopropanol	9	400 ppm	67-63-0
*Methanol	4	200 ppm	67-56-1
*Methyl Isobutyl Ketone	1	50 ppm	108-10-1

*Principal hazardous components

** See Section VI-A for additional information on exposure levels.

B. PRECAUTIONARY LABEL STATEMENTS

WARNING! FLAMMABLE

MAY BE FATAL OR CAUSE BLINDNESS IF SWALLOWED

MAY BE HARMFUL IF INHALED OR ABSORBED THROUGH THE SKIN

CAUSES EYE IRRITATION

Keep away from heat, sparks, and flame.

Avoid breathing vapor.

Avoid contact with eyes, skin, and clothing.

Keep container closed.

Use with adequate ventilation.

Wash thoroughly after handling.

If taken internally will cause serious consequences to health, or possibly death.

POISON

Call a physician.

FIRST AID

If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person.

If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is

difficult, give oxygen.

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

IN CASE OF FIRE

Use water spray, dry chemical, "alcohol" foam, or CO₂. Water may be ineffective in fighting the fire. Use water spray to keep fire-exposed containers cool.

IN CASE OF SPILL

Eliminate all ignition sources. Flush spill area with water spray. Prevent runoff from entering drains, sewers, and streams.

Since emptied packages retain product residue, follow label warnings even after package is emptied.

SECTION 3. PHYSICAL DATA

Appearance and Odor:	Clear liquid, alcohol odor
Boiling Point:	Approx. 78 C (approx. 172 F)
Specific Gravity (H ₂ O) = 1):	0.801 at 15.6 C
Vapor Pressure:	100 mm Hg at 35 C (95 F)
Percent Volatile by Volume:	> 99
Vapor Density (Air = 1):	1.47
Evaporation Rate (n-butyl acetate = 1):	1.7
Solubility in Water:	Complete

SECTION 4. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:	16 C (60 F)	Method Used: TCC
AUTOIGNITION TEMPERATURE:	424 C (795 F)	Method Used: ASTM D-2155
FLAMMABLE LIMITS:	LEL 3.74% at 93 C	UEL 27.0% at 93 C
EXTINGUISHING AGENT:	Water Spray, Dry Chemical, CO ₂ , "Alcohol" Foam	

SPECIAL FIRE-FIGHTING MEASURES

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Water may be ineffective for fire fighting. Use water spray to keep fire-exposed containers cool.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Flammable liquid (see Section 8). Vapors are heavier than air and may travel considerable distance to a source of ignition and flash back.

SECTION 5. REACTIVITY DATA

STABILITY

Stable.

INCOMPATIBILITY

Oxidizing materials can cause a vigorous reaction.

HAZARDOUS DECOMPOSITION PRODUCTS

As with any other organic material, combustion will produce carbon dioxide and probably carbon monoxide.

HAZARDOUS POLYMERIZATION

Will not occur.

SECTION 6. TOXICITY AND HEALTH

A. EXPOSURE LIMITS

Exposure Limits for Hazardous Components (in ppm)

Component	ACGIH, 1982		Skin Notation	OSHA
	TLV TWA	TLV STEL		PEL TWA
Ethanol	1000	-	No	1000
Isopropanol	400	500	No	400
Methanol	200	250	Yes	200
Methyl Isobutyl Ketone	50	75	No	100

NIOSH industrial hygiene analytical methods are available. (1)

B. EXPOSURE EFFECTS

GENERAL

Prolonged exposure to excessive concentrations of ethanol may result in irritation of mucous membranes, headache, drowsiness, fatigue, and narcosis. Methanol is also narcotic in effect and its effects are cumulative.

Overexposure to methanol can result in acidosis and visual disturbances, which may progress to permanent loss of vision. (2)

INHALATION

May be harmful if inhaled.

EYES

Liquid or vapor may cause irritation.

SKIN

May be harmful if absorbed through the skin.

INGESTION

May be fatal or cause blindness if swallowed.

C. FIRST AID

POISON! GET MEDICAL ATTENTION IMMEDIATELY.

INHALATION

Remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen.

EYES

Immediately flush with plenty of water for at least 15 minutes. Remove from airborne exposure, treat symptomatically, and get medical attention if symptoms persist.

SKIN

Immediately flush with plenty of water for at least 15 minutes while removing contaminating clothing and shoes. Wash contaminated clothing before reuse.

INGESTION

If conscious, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person.

D. ANIMAL TOXICITY DATA

Toxicity data for the major product components are as follows:

Test	Ethanol		Toxicity Classification (3)
	Species	Result	
Acute oral LD50	Rat	6.2 to 17.8 g/kg (2)	Practically nontoxic
Acute oral LD50	Mouse	8.3 to 9.5 g/kg (2)	Practically nontoxic
Acute oral LD50	Guinea pig	5.6 g/kg (2)	Practically nontoxic

Acute oral LD50	Rabbit	9.9 g/kg (2)	Practically nontoxic
Dermal LD50	Rabbit	>9.4 mL/kg (4)	
Inhalation LC50	Rat	ca. 16,000 ppm/8 h (2)	
Skin irritation	Rabbit	Slight (4)	
Repeated skin application	Rat	Slight (2)	
Eye irritation	Rabbit	Moderate (2)	

Inhalation of excessive levels of ethanol vapors for short durations can produce the following acute effects in experimental animals: mucous membrane irritation, excitation, ataxia, narcosis, drowsiness, prostration, twitching, general paralysis, dyspnea, and even death from respiratory failure. (2)

Rats given 10.2 g/kg/day of ethanol in their drinking water for 12 weeks showed a decrease in weight gain and fatty livers. Rats fed diets containing 33% ethanol for up to 14 weeks showed fatty liver change. A monkey fed a diet containing 40% ethanol for 3 months showed an excessive level of triglycerides, cholesterol, and phospholipids in the serum and liver, as well as increased levels of triglycerides and cholesterol esters in the heart. Rabbits exposed to air saturated with ethanol vapors for up to 365 days showed cirrhosis of the liver. Rats, guinea pigs, rabbits, monkeys, and dogs exposed to airborne concentrations of 86 mg/m³ of ethanol continuously for 90 days showed no change in clinical behavior, mortality, hematology, gross pathology, or histopathology. (2)

Isopropanol

Test	Species	Result
Acute oral LD50	Rat	5.8 g/kg (2)
Acute oral LD50	Rabbit	7.9 g/kg (2)
Acute oral LD50	Dog	6.2 g/kg (2)
Inhalation LC50	Rat	12,000 ppm/8 h (2)
Dermal LD50	Rabbit	16.4 mL/kg (4)
Skin irritation	Rabbit	Slight (4)
Repeated skin application	Rabbit	No exacerbation (4)
Eye irritation	Rabbit	Slight to moderate (5)

Methanol

Test	Species	Result
Acute oral LD50	Rat	6200 mg/kg (2)
Acute oral LD50	Rabbit	14,400 mg/kg (2)
Dermal LD50	Rabbit	20 mL/kg (2)
Inhalation LC50	Rat	>22,500 ppm/8 h (2)
Skin irritation	---	Slight (2)
Eye irritation	Rabbit	Slight (5)

NOTE: Methanol is toxic by oral ingestion, skin absorption, and inhalation and can produce degeneration of the central nervous system, atrophy of the optic nerve, and liver and kidney damage.

SECTION 7. PERSONAL PROTECTION AND CONTROLS

A. RESPIRATORY PROTECTION

An appropriate NIOSH-approved respirator for organic vapor should be worn if needed.

B. VENTILATION

General: Recommend at least ten air changes per hour for good general room ventilation. Local Exhaust: If needed to control vapor. See Section 6-A for detailed information on exposure limits.

C. SKIN AND EYE PROTECTION

Safety glasses should be worn in any type of industrial operation. Protective gloves should be worn.

D. OTHER CONTROL MEASURES

A safety shower, an eye bath, and washing facilities should be available. Wash thoroughly after handling.

SECTION 8. SPECIAL STORAGE AND HANDLING PRECAUTIONS

Material is classified as a Flammable Liquid. Keep away from heat, sparks, and flame. Keep container closed. Use with adequate ventilation. Since emptied packages retain product residue, follow label warnings even after package is emptied.

SECTION 9. SPILL, LEAK, AND DISPOSAL PRACTICES

Steps to be Taken in Case Material is Released or Spilled: Eliminate all ignition sources. Small spills may be collected with absorbent materials. For large spills, flush area with water spray. Prevent runoff from entering drains, sewers, or streams.

Waste Disposal Method: Mix with compatible chemical, which is less combustible, and incinerate. Observe all federal, state, and local laws concerning health and environment.

SECTION 10. ENVIRONMENTAL EFFECTS DATA

This solvent mixture has not been tested for environmental effects. However, some laboratory test data and published data are available for the major components of this solvent mixture, and these data have been used to provide the following estimate of environmental impact: (6, 7, 8, 9, 10, 11)

This solvent mixture is expected to have a high biological oxygen demand, and it is expected to cause significant oxygen depletion in aquatic systems. It is expected to have a low potential to affect aquatic organisms and secondary waste treatment microorganisms. This solvent mixture is readily biodegradable and is not likely to bioconcentrate. If diluted with a large amount of water, a moderate quantity of this solvent released directly or indirectly into the environment is not expected to have a significant impact.

SECTION 11. TRANSPORTATION

DOT Hazard Classification: Flammable Liquid

Hazardous component(s): See Section 2A.

Flashpoint: Section 4

SECTION 12. REFERENCES

Unless noted, toxicity results are from unpublished data, Health, Safety, and Human Factors Laboratory, Eastman Kodak Co., Rochester, New York.

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8. G. Bringmann and R. Kuehn. Results of toxic action of water pollutants on Daphnia magna (Straus) tested by an improved standardized procedure. Z. Wasser Abwasser Forsch. 1982; 15(1): 1-6 (in German).
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11. A.J. Leo and C. Hansch, Editors. Chemical Parameter Data Base. Medicinal Chemistry Project, Pomona College, Seaver Chemistry Laboratory, Claremont, California, July 10, 1980.

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