



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name Ethchlorvynol
Catalog number 1258305
Version # 01
Revision date 09-01-2011
Chemical name 1-Penten-4-yn-3-ol, 1-chloro-3-ethyl-
CAS # 113-18-8
Synonym(s) 1-Chloro-3-ethyl-1-penten-4-yl-3-ol * 1-Chloro-3-ethylpent-1-4-yn-3-ol *
5-Chloro-3-ethylpent-1-yn-4-en-3-ol
Manufacturer information U. S. Pharmacopeia
12601 Twinbrook Parkway
Rockville, MD 20852-1790
RS Technical Services 301-816-8129

2. Hazards Identification

Emergency overview WARNING

Toxic. Irritant.

Adverse Effects Adverse effects may include nausea; vomiting; dizziness; blurred vision; facial numbness; stomach pain; unusual tiredness or weakness; clumsiness; muscle weakness; confusion; skin rash or hives; unusual excitement, nervousness, or restlessness; low blood pressure; unpleasant or mint-like aftertaste; indigestion; and drowsiness. Possible allergic reaction to material if inhaled, ingested, or in contact with skin.

OSHA regulatory status This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

Potential health effects

- Eyes** Causes eye irritation.
- Skin** Causes skin irritation.
- Inhalation** May cause irritation of respiratory tract.
- Ingestion** May cause irritation of the gastrointestinal tract. May cause toxic effects if swallowed.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Ethchlorvynol	113-18-8	90 - 100

4. First Aid Measures

First aid procedures

- Eye contact** Causes irritation. Avoid contact. Flush with copious quantities of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
- Skin contact** May cause irritation. Flush with copious quantities of water. This material may be absorbed through the skin. Get medical attention if irritation develops and persists.
- Inhalation** Vapors may cause irritation and toxicity. Remove to fresh air. This material may be absorbed through the lungs. Call a physician if symptoms develop or persist.
- Ingestion** May cause irritation and toxicity. Flush out mouth with water. This material is rapidly absorbed from the gastrointestinal tract. Onset of effect is between 15 minutes and 1 hour; duration of action is up to 5 hours. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

Notes to physician

Symptoms may be delayed. Severe intoxication resembles barbiturate coma. Treatment for acute ethchlorvynol overdose should be symptomatic and supportive and may include the following.

1. Stabilize the patient. Do NOT induce vomiting. Give priority to protection of the airway, ventilation, and circulation along with administration of glucose, naloxone, and thiamine.
2. To decrease absorption, perform gastric lavage immediately. In the unconscious patient, gastric lavage should be preceded by tracheal intubation with a cuffed tube to prevent aspiration of vomitus.
3. For hypotension, infuse with isotonic fluid and place in Trendelenburg position; if hypotension persists, administer dopamine or norepinephrine.
4. Manage hypothermia with temperature controlled blankets, warm IV fluids, and warm gastric lavage.
5. For seizures, administer diazepam intravenously; if seizures persist or recur administer phenobarbital.
6. Monitor pulmonary function and blood gases. Supportive measures such as assisted ventilation, frequent monitoring of vital signs, and control of blood pressure are essential.
7. To enhance elimination, hemoperfusion using the Amberlite column technique has been reported to be effective. Substantial rebound from tissue stores occurs and may require repeat administration. [MEDITEXT 2004; USP DI 2004; HSDB 2004]

General advice

Remove from exposure. Remove contaminated clothing. For treatment advice, seek guidance from an occupational health physician or other licensed health-care provider familiar with workplace chemical exposures. In the United States, the national poison control center phone number is 1-800-222-1222. If person is not breathing, give artificial respiration. If breathing is difficult, give oxygen if available. Persons developing serious hypersensitivity (anaphylactic) reactions must receive immediate medical attention

5. Fire Fighting Measures

Flammable properties

This material is assumed to be combustible.

Extinguishing media

Suitable extinguishing media

Dry chemical, foam, carbon dioxide, water fog.

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

Fire fighting equipment/instructions

As with all fires, evacuate personnel to a safe area. Firefighters should use self-contained breathing equipment and protective clothing.

Specific methods

Cool containers exposed to flames with water until well after the fire is out.

6. Accidental Release Measures

Personal precautions

Keep unnecessary personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Environmental precautions

Prevent further leakage or spillage if safe to do so.

Methods for containment

Stop leak if you can do so without risk.

Methods for cleaning up

Wear approved respiratory protection, chemically compatible gloves, and protective clothing. Wipe up spillage or collect spillage using a high-efficiency vacuum cleaner. Avoid breathing mist or vapors. Ventilate area and wash spill site. Place spillage in appropriately labeled container for disposal. For waste disposal, see section 13 of the MSDS.

7. Handling and Storage

Handling

As a general rule, when handling USP Reference Standards, avoid all contact and inhalation of dust, mists, and/or vapors associated with the material. Clean equipment and work surfaces with suitable detergent or solvent after use. After removing gloves, wash hands and other exposed skin thoroughly. Use of a designated area is recommended for handling of potent materials.

Storage

Store in tight container as defined in the USP-NF. This material should be handled and stored per label instructions to ensure product integrity.

8. Exposure Controls / Personal Protection

Exposure limit values

Industrial Use

Material	Type	Value	Form
Ethchlorvynol (113-18-8)	TWA	0.4 mg/m ³	Skin

Engineering controls	Airborne exposure should be controlled primarily by engineering controls such as general dilution ventilation, local exhaust ventilation, or process enclosure. Local exhaust ventilation is generally preferred to general exhaust because it can control the contaminant at its source, preventing dispersion into the work area. An industrial hygiene survey involving air monitoring may be used to determine the effectiveness of engineering controls. Effectiveness of engineering controls intended for use with highly potent materials should be assessed by use of nontoxic surrogate materials. Avoid any open handling of this material, particularly for grinding, crushing, weighing or other dust-generating or aerosol-generating procedures. Use a laboratory fume hood, vented enclosure, glovebox, or other effective containment.
Personal protective equipment	
Eye / face protection	Safety glasses with sideshields are recommended. Face shields or goggles may be required if splash potential exists or if corrosive materials are present. Approved eye protection (e.g., bearing the ANSI Z87 or CSA stamp) is preferred. Maintain eyewash facilities in the work area.
Hand protection	Chemically compatible gloves. For handling solutions, ensure that the glove material is protective against the solvent being used. Use handling practices that minimize direct hand contact. Employees who are sensitive to natural rubber (latex) should use nitrile or other synthetic nonlatex gloves. Use of powdered latex gloves should be avoided due to the risk of latex allergy. This material is extremely potent. To reduce the risk of contamination of skin and surfaces, wear two pairs of gloves. Remove the outer gloves after handling and cleanup of the material, and remove the inner gloves only after removing other personal protective equipment.
Skin protection	For handling of laboratory scale quantities, a disposable lab coat or isolation gown over street clothes is recommended. Where significant quantities are handled, work clothing and booties may be necessary to prevent take-home contamination.
Respiratory protection	Where respirators are deemed necessary to reduce or control occupational exposures, use NIOSH-approved respiratory protection and have an effective respirator program in place (applicable U.S. regulation OSHA 29 CFR 1910.134).
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

Physical state	Liquid.
Appearance	Colorless to yellow, slightly viscous liquid.
Form	Liquid.
Color	Not available.
Odor	Characteristic pungent odor.
Odor threshold	Not available.
pH	Not available.
Vapor pressure	0.01333 kPa at 29°C
Vapor density	Not available.
Boiling point	343.4 - 345.2 °F (173 - 174 °C) (also reported as 181 °C)
Melting point/Freezing point	Not available.
Solubility (water)	Immiscible
Other data	
Solubility (other)	Miscible with most organic solvents.
Specific gravity	1.065 - 1.07 at 25°C
Relative density	Not available.
Flash point	341.6 °F (172 °C) (method not specified)
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Auto-ignition temperature	Not available.
Molecular weight	144.61
Molecular formula	C7H9ClO

Other data

Chemical family Tertiary carbinol

10. Chemical Stability & Reactivity Information

Chemical stability	Stable at normal conditions.
Conditions to avoid	Avoid temperatures exceeding the flash point. Avoid exposure to light.
Incompatible materials	Iron
Hazardous decomposition products	When heated to decomposition, material emits toxic fumes of Cl-. Emits toxic fumes under fire conditions.
Possibility of hazardous reactions	Will not occur.

11. Toxicological Information

Effects of exposure Symptoms of acute overdose include slow heartbeat, low body temperature, unusual eye movements, fever, chills, sore throat, pale skin, unusual bleeding or bruising, unusual tiredness or weakness, severe weakness, and prolonged coma.

Toxicological data

Product	Test Results
Ethchlorvynol (113-18-8)	Dermal LD50 Rabbit: 200 - 1000 mg/kg Oral LD50 Mouse: 290 mg/kg
Medical conditions aggravated by exposure	Hypersensitivity to material, active alcoholism or drug abuse, concurrent use of central nervous system depression-producing medications, mental depression, and porphyria.
Acute effects	Eye irritation. Possible skin, gastrointestinal, and/or respiratory tract irritation and severe respiratory depression.

Local effects

Toxic if swallowed.

Product	Test Results
Ethchlorvynol	Irritancy Result: Positive Species: Rabbit Organ: Eye Severity: severe
Ethchlorvynol	Irritancy Result: Positive Species: Rabbit Organ: Skin Severity: mild

Chronic effects Possible hypersensitization, tolerance, and dependence. Signs of chronic intoxication include continuing confusion; generalized weakness and tremors; double vision or change in vision; numbness, tingling, pain, or weakness in hands or feet; overactive reflexes; slurred speech; shakiness or unsteady walk, clumsiness, trembling, unsteadiness or other problems with muscle coordination; and unusual movements of the eyes.

Carcinogenicity

This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

Product	Test Results
Ethchlorvynol	Carcinogenicity Result: Increased incidence of lung tumors in females Species: Mouse Test Duration: 24 months
Ethchlorvynol	Carcinogenicity Result: Not carcinogenic Species: Rat Test Duration: 24 months

Reproductive effects

Therapeutic use during the third trimester may produce central nervous system depression and withdrawal symptoms in the newborn.

Product

Ethchlorvynol

Test Results

40 mg/kg Developmental study
Result: Increased stillbirth rate; lower offspring survival rate
Species: Rat

Symptoms and target organs

Central nervous system

12. Ecological Information

Persistence and degradability

Not available.

13. Disposal Considerations

Disposal instructions

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose in accordance with all applicable regulations. Dispose of waste in accordance with all applicable Federal, State, and local laws. Additionally, because this is a controlled substance, notify local DEA office for appropriate disposal procedures.

Contaminated packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport Information

IATA

Basic shipping requirements:

Proper shipping name Toxic liquid, organic, n.o.s. (Ethchlorvynol)
Hazard class 6.1
UN number 2810
Packing group III

DOT

Basic shipping requirements:

UN number 2810
Proper shipping name Toxic liquid, organic, n.o.s. (Ethchlorvynol)
Hazard class 6.1
Packing group III
Additional information:
ERG number 153

15. Regulatory Information

US federal regulations

Controlled substance - Schedule IV

CERCLA (Superfund) reportable quantity

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

Section 302 extremely hazardous substance No

Section 311 hazardous chemical No

Drug Enforcement Administration (DEA) (21 CFR 1308.11-15)

Schedule IV - 2540

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no) *
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

16. Other Information

Disclaimer

USP Reference Standards are sold for chemical test and assay purposes only, and NOT for human consumption. The information contained herein is applicable solely to the chemical substance when used as a USP Reference Standard and does not necessarily relate to any other use of the substance described, (i.e. at different concentrations, in drug dosage forms, or in bulk quantities). USP Reference Standards are intended for use by persons having technical skill and at their own discretion and risk. This information has been developed by USP staff from sources considered reliable but has not been independently verified by the USP. Therefore, the USP Convention cannot guarantee the accuracy of the information in these sources nor should the statements contained herein be considered an official expression. NO REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE is made with respect to the information contained herein. The information in the sheet was written based on the best knowledge and experience currently available.

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