

According to the UN GHS revision 8

Creation Date: May 05, 2026

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1. IDENTIFICATION

1.1 GHS Product identifier

Product name: Chlorambucil

Catalog Number: T0975

CAS Number: 305-03-3

1.2 Other means of identification

Other names: -

1.3 Recommended use of the chemical and restrictions on use

Identified uses: no data available

1.4 Supplier's details

Company: Targetmol Chemicals Inc.

Address: 34 Washington Street, Wellesley Hills, Massachusetts 02481 USA

Tel/Fax: (781) 999-4286

1.5 Emergency phone number

Emergency phone number: 781-999-4286

Service hours: Monday to Friday, 9am-5pm (Standard timezone: UTC/GMT -5 hours).

2. HAZARD IDENTIFICATION

2.1 Classification of the substance or mixture

Acute toxicity - Category 3, Oral

Skin irritation, Category 2

Eye irritation, Category 2

Specific target organ toxicity - single exposure, Category 3

Carcinogenicity, Category 1B

2.2 GHS label elements, including precautionary statements

Pictogram(s):



Signal word:

Danger

Hazard statement(s):

H301 Toxic if swallowed
H315 Causes skin irritation
H319 Causes serious eye irritation
H335 May cause respiratory irritation
H350 May cause cancer

Precautionary statement(s):

P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.

Prevention:

Response:	<p>P203 Obtain, read and follow all safety instructions before use.</p> <p>P301+P316 IF SWALLOWED: Get emergency medical help immediately.</p> <p>P321 Specific treatment (see ... on this label).</p> <p>P330 Rinse mouth.</p> <p>P302+P352 IF ON SKIN: Wash with plenty of water/...</p> <p>P332+P317 If skin irritation occurs: Get medical help.</p> <p>P362+P364 Take off contaminated clothing and wash it before reuse.</p> <p>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P319 Get medical help if you feel unwell.</p> <p>P318 IF exposed or concerned, get medical advice.</p>
Storage:	<p>P405 Store locked up.</p> <p>P403+P233 Store in a well-ventilated place. Keep container tightly closed.</p>
Disposal:	<p>P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.</p>

2.3 Other hazards which do not result in classification

no data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number
Chlorambucil	-	305-03-3	206-162-0

4. FIRST-AID MEASURES

4.1 Description of necessary first-aid measures

General advice

no data available

If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

Following skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

Following eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

4.2 Most important symptoms/effects, acute and delayed

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR if necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on the left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Poisons A and B

4.3 Indication of immediate medical attention and special treatment needed, if necessary

SYMPTOMS: Symptoms of exposure to this compound include leukemia, dyspnea, cough, interstitial fibrosis and menstrual cycle changes or disorders. It may cause keratitis epithelialis in association with exfoliative dermatitis and reversible pseudotumor cerebri with papilledema. It may also cause vomiting, lethargy and unconsciousness with grand mal seizures. Other symptoms include convulsions, infertility, reversible and permanent sterility, lymphopenia, neutropenia, bone marrow suppression, gastrointestinal disturbances such as nausea, diarrhea and oral ulceration, hepatotoxicity, jaundice, drug fever, skin hypersensitivity, peripheral neuropathy, sterile cystitis, fibrosis, vasculitis and depletion of primordial follicles, skin rash, bleeding, unusual lumps, agitated behavior and ataxia. It may cause

hyperuricemia, which may lead to acute renal failure, reversible pancytopenia, sideroblastic anemia and myeloblastic leukemia. Exposure may cause erythroleukemia, reticulum-cell sarcoma, lymphosarcoma, myelosuppression, viral, fungal and bacterial infections, chromosomal damage and oligospermia, azoospermia and disappearance of testicular germinal cells in males. It may cause irreversible bone marrow depression, central nervous excitation and jerky movements. It may also cause thrombocytopenia, leucopenia and hemorrhage of the skin and mucous membranes. Other symptoms of exposure include coma, irritation to the skin and mucous membranes, lymphocytopenia, cutaneous pigmentation, adrenal cortical insufficiency and neurotoxicity. It may cause amenorrhea and dermatitis. When administered to a pregnant woman, the offspring may develop unilateral renal agenesis. It may be injurious to the developing retina. ACUTE/CHRONIC HAZARDS: This compound is an irritant of the skin and mucous membranes. It is rapidly and completely absorbed from the gastrointestinal tract. When heated to decomposition it emits toxic fumes of chlorine and nitrogen oxides. (NTP, 1992)

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Water spray, dry chemical, carbon dioxide, or foam as appropriate for surrounding fire and materials.

5.2 Specific hazards arising from the chemical

Literature sources indicate that this chemical is nonflammable. (NTP, 1992)

5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

6.2 Environmental precautions

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

PRECAUTIONS FOR ANTINEOPLASTIC AGENTS:/ If hazardous drugs are routinely prepared or administered in carpeted areas, special equipment is necessary to remove the spill. Absorbent powder should be substituted for pads or sheets and left in place on the spill for the time recommended by the manufacturer. The powder should then be picked up with a small vacuum unit reserved for hazardous drug cleanup. The carpet should then be cleaned according to usual procedures. The vacuum bag should be removed and discarded or cleaned, and the exterior of the vacuum cleaner should be washed with detergent and rinsed before being covered and stored. The contaminated powder should be discarded into a sealable plastic bag and segregated with other contaminated waste materials. Alternatively, inexpensive wet or dry vacuum units may be purchased for this express use and used with appropriate cleaners. All such units are contaminated, once used, and must be cleaned, stored, and ultimately discarded /properly/ ... The circumstances and handling of spills should be documented. Health-care personnel exposed during spill management should also complete an incident report or exposure form. Antineoplastic agents

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Store in a refrigerator, 2 to 8 deg C (36 to 46 deg F).

Powder: -20°C for 3 years | In solvent: -80°C for 1 year

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure limit values

no data available

Biological limit values

no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

Skin protection

Wear fire/flame resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

Thermal hazards

no data available

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Solid
Color	no data available
Odour	Slight odor
Melting point/freezing point	192°C(lit.)
Boiling point or initial boiling point and boiling range	148°C/15mmHg(lit.)
Flammability	no data available
Lower and upper explosion limit/flammability limit	no data available
Flash point	26°C(lit.)
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	Ethanol: 56 mg/mL (184.08 mM),Sonication is recommended. H2O: < 1 mg/mL (insoluble or slightly soluble), DMSO: 85 mg/mL (279.41 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
N-octanol-water partition coefficient	no data available
Vapour pressure	9.30X10-7 mm Hg at 25 deg C (est)
Density and/or relative density	1.248 g/cm3
Relative vapour density	no data available
Particle characteristics	no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

no data available

10.2 Chemical stability

Sensitive to light and heat.

10.3 Possibility of hazardous reactions

CHLORAMBUCIL is an alkylating agent. Reacts with proteins and a variety of nucleophilic compounds (NTP, 1992).

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

no data available

10.6 Hazardous decomposition products

When heated to decomposition it emits very toxic fumes of /hydrogen chloride and nitrogen oxides/.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral: LD50 Mouse oral 101 mg/kg

Inhalation: no data available

Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

Classification of carcinogenicity: 1) evidence in humans: sufficient; 2) evidence in animals: sufficient. Overall summary evaluation of carcinogenic risk to humans is Group 1: The agent is carcinogenic to humans. From table

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

An estimated BCF of 3 was calculated in fish for chlorambucil(SRC), using a log Kow of 1.70(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

12.4 Mobility in soil

The Koc of chlorambucil is estimated as 11(SRC), using a log Kow of 1.70(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that chlorambucil is expected to have very high mobility in soil. The pKa of chlorambucil is 5.75(1), indicating that this compound will exist partially in the anion form in the environment and anions generally do not adsorb more strongly to soils containing organic carbon and clay than their neutral counterparts(4).

12.5 Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

14. TRANSPORT INFORMATION

14.1 UN Number

no data available

14.2 UN Proper Shipping Name

no data available

14.3 Transport hazard class(es)

no data available

14.4 Packing group, if applicable

no data available

14.5 Environmental hazards

no data available

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations specific for the product in question

European Inventory of Existing Commercial Chemical Substances (EINECS)	Listed.
EC Inventory	Listed.
United States Toxic Substances Control Act (TSCA) Inventory	Not Listed.
China Catalog of Hazardous chemicals 2015	Not Listed.
New Zealand Inventory of Chemicals (NZIoC)	Not Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Not Listed.

Vietnam National Chemical Inventory	Not Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)	Not Listed.
Korea Existing Chemicals List (KECL)	Not Listed.

16. OTHER INFORMATION

Information on revision

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Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>

Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

Other Information

no data available

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