

## Chemical Safety Data Sheet MSDS / SDS

## ENDOTHAL

Revision Date:2025-07-12 Revision Number:1

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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

**Product identifier**

Product name : ENDOTHAL  
CBnumber : CB8477916  
CAS : 145-73-3  
EINECS Number : 205-660-5  
Synonyms : Endothal,Endothall

**Relevant identified uses of the substance or mixture and uses advised against**

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

**Company Identification**

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 010-86108875

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## SECTION 2: Hazards identification

**Classification of the substance or mixture**

Acute toxicity - Category 3, Oral  
Acute toxicity - Category 4, Dermal  
Skin irritation, Category 2  
Eye irritation, Category 2  
Specific target organ toxicity – single exposure, Category 3

**Label elements****Pictogram(s)**

□

Signal word Danger

**Hazard statement(s)**

H301 Toxic if swallowed  
H312 Harmful in contact with skin  
H315 Causes skin irritation  
H319 Causes serious eye irritation

H335 May cause respiratory irritation

#### **Precautionary statement(s)**

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continuerinsing.

P405 Store locked up.

#### **Prevention**

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.

#### **Response**

P301+P316 IF SWALLOWED: Get emergency medical help immediately.

P321 Specific treatment (see ... on this label).

P330 Rinse mouth.

P302+P352 IF ON SKIN: Wash with plenty of water/...

P317 Get medical help.

P362+P364 Take off contaminated clothing and wash it before reuse.

P332+P317 If skin irritation occurs: Get medical help.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P319 Get medical help if you feel unwell.

#### **Storage**

P405 Store locked up.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

#### **Disposal**

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.

#### **Other hazards**

no data available

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## SECTION 3: Composition/information on ingredients

#### **Substance**

|              |                      |
|--------------|----------------------|
| Product name | : ENDOTHAL           |
| Synonyms     | : Endothal,Endothall |
| CAS          | : 145-73-3           |
| EC number    | : 205-660-5          |

MF : C8H10O5  
MW : 186.16

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## SECTION 4: First aid measures

### Description of first aid measures

#### 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.

### Most important symptoms and effects, both acute and delayed

Excerpt from ERG Guide 154 [Substances - Toxic and/or Corrosive (Non-Combustible)]: TOXIC; inhalation, ingestion or skin contact with material may cause severe injury or death. Contact with molten substance may cause severe burns to skin and eyes. Avoid any skin contact. Effects of contact or inhalation may be delayed. Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution. (ERG, 2016)

### Indication of any immediate medical attention and special treatment needed

Wash endotoxin from the skin with soap and water. Flush contamination from the eyes with copious amounts of clean water. Obtain medical attention if irritation of skin or eyes persists.

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## SECTION 5: Firefighting measures

### Extinguishing media

Wear self contained breathing apparatus for fire fighting if necessary.

### Specific Hazards Arising from the Chemical

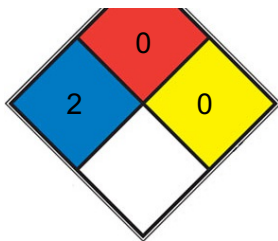
Excerpt from ERG Guide 154 [Substances - Toxic and/or Corrosive (Non-Combustible)]: Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Some are oxidizers and may ignite combustibles (wood, paper, oil, clothing, etc.). Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated. For electric vehicles or equipment, ERG Guide 147 (lithium ion batteries) or ERG Guide 138 (sodium batteries) should also be consulted. (ERG, 2016)

### Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### NFPA 704





|                                     |        |   |                                                                                                                                                                                                                                                                                              |
|-------------------------------------|--------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | HEALTH | 2 | Intense or continued but not chronic exposure could cause temporary incapacitation or possible residual injury (e.g. <a href="#">diethyl ether</a> , ammonium phosphate, iodine)                                                                                                             |
| <input checked="" type="checkbox"/> | FIRE   | 0 | Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 820 °C (1,500 °F) for a period of 5 minutes.(e.g. Carbon tetrachloride) |
| <input checked="" type="checkbox"/> | REACT  | 0 | Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium, <a href="#">N2</a> )                                                                                                                                                                      |
| <input type="checkbox"/>            | SPEC.  |   |                                                                                                                                                                                                                                                                                              |
| <input type="checkbox"/>            | HAZ.   |   |                                                                                                                                                                                                                                                                                              |

## SECTION 6: Accidental release measures

### 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.

### 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.

### Methods and materials for containment and cleaning up

If a spill occurs, clean it up promptly. Don't wash it away. Instead, sprinkle the spill with sawdust, vermiculite, or kitty litter. Sweep it into a plastic garbage bag, and dispose of it as directed on the pesticide product label.

## SECTION 7: Handling and storage

### 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.

### Conditions for safe storage, including any incompatibilities

Liquid formulations should be stored at 0 deg C or above to prevent crystallization.

## SECTION 8: Exposure controls/personal protection

### Control parameters

### Occupational Exposure limit values

no data available

### Biological limit values

no data available

### Exposure controls

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

### Individual protection measures

#### Eye/face protection

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

#### Skin protection

Wear fire/flammable 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

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

|                                                          |                                     |
|----------------------------------------------------------|-------------------------------------|
| Physical state                                           | White solid                         |
| Colour                                                   | Crystalline, white solid            |
| Odour                                                    | Odorless                            |
| Melting point/freezing point                             | 144°C                               |
| Boiling point or initial boiling point and boiling range | 350°C(e)                            |
| Flammability                                             | no data available                   |
| Lower and upper explosion limit/flammability limit       | no data available                   |
| Flash point                                              | 190.5°C                             |
| Auto-ignition temperature                                | no data available                   |
| Decomposition temperature                                | no data available                   |
| pH                                                       | no data available                   |
| Kinematic viscosity                                      | no data available                   |
| Solubility                                               | In water, 1.0X10+5 mg/L at 20 deg C |
| Partition coefficient n-octanol/water                    | log Kow = 1.91                      |
| Vapour pressure                                          | 2.88E-09mmHg at 25°C                |
| Density and/or relative density                          | 1.431                               |
| Relative vapour density                                  | no data available                   |

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|                          |                   |
|--------------------------|-------------------|
| Particle characteristics | no data available |
|--------------------------|-------------------|

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## SECTION 10: Stability and reactivity

### Reactivity

Stable up to 90°C, above which it undergoes slow hydrolysis.

### Chemical stability

Stable to about 90 deg C, at which temperature it undergoes slow conversion to anhydride; stable in acid and light.

### Possibility of hazardous reactions

NonflammableA phthalic acid derivative.

### Conditions to avoid

no data available

### Incompatible materials

Endothal is a dibasic acid, and forms water-soluble amine and alkali-metal salts.

### Hazardous decomposition products

When heated to decomposition it emits acrid smoke and fumes.

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## SECTION 11: Toxicological information

### Acute toxicity

- Oral: LD50 Rat oral 38-51 mg/kg for acid (technical)
- Inhalation: no data available
- Dermal: LD50 Rabbit percutaneous >2000 mg/L

### 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

no data available

## Reproductive toxicity

no data available

## STOT-single exposure

no data available

## STOT-repeated exposure

no data available

## Aspiration hazard

no data available

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## SECTION 12: Ecological information

### Toxicity

Toxicity to fish: LC50; Species: /Oncorhynchus mykiss/ (Rainbow Trout) weight 1.2 g; Conditions: static bioassay without aeration, 13 deg C, pH 7.2-7.5, water hardness 40-50 mg/L as calcium carbonate and alkalinity of 30-35 mg/L; Concentration: 230 mg/L for 96 hours (95% confidence limit 187-283 mg/L) /Aquathol K, 40.3%

Toxicity to daphnia and other aquatic invertebrates: EC50; Species: Daphnia magna (Water flea) <24 hr old; Conditions: static; Concentration: 46 ppm for 26 hr (95% confidence limit: 36-57 ppm); Effect: intoxication, immobilization /75-86% AI formulated product/[USEPA, Office of Pesticide Programs; Pesticide Ecotoxicity Database (2000) on 7-Oxabicyclo

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

### Persistence and degradability

AEROBIC: Biotransformation is the major process for removal of endothall from water and soil(1,2) at rates dependent upon soil temperature, moisture, type, and microbiological activity(3). 70% of endothall added to an Ontario soil sample was evolved as CO<sub>2</sub> in 7 days(4). Application of 2 ppm endothall to pond water resulted in no apparent degradation of endothall in autoclaved water after 9 days and approx 50% degradation of endothall in non-autoclaved water after 4 days(5).

### Bioaccumulative potential

A BCF of <1 of endothall has been measured using bluegill sunfish (*Lepomis macrochirus*)(1). According to a classification scheme(2), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

### Mobility in soil

The Koc of endothall is estimated as 13(1), using a log Kow of 1.91(2) and a regression-derived equation(1). According to a classification scheme(3), these Koc values suggest that endothall is expected to have very high mobility in soil. The pKa values for the two carboxylic acid moieties of endothall are 3.4 and 6.7(4), indicating that this compound will primarily exist in anion form in the environment and anions generally do not adsorb more strongly to soils containing organic carbon and clay than their neutral counterparts(5). The Koc of endothall in sediment/water systems has been measured to be < 2(2) and 10(6).

### Toxics Screening Level

The Initial Threshold Screening Level (ITSL) for endothall of 70 µg/m<sup>3</sup> with annual averaging time is being rescinded.

## Other adverse effects

no data available

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## SECTION 13: Disposal considerations

### 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.

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## SECTION 14: Transport information

### UN Number

ADR/RID: no data available

IMDG: no data available

IATA: no data available

### UN Proper Shipping Name

ADR/RID: no data available

IMDG: no data available

IATA: no data available

### Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.)

IMDG: 6.1 (For reference only, please check.)

IATA: 6.1 (For reference only, please check.)

### Packing group, if applicable

ADR/RID: III (For reference only, please check.)

IMDG: III (For reference only, please check.)

IATA: III (For reference only, please check.)

### Environmental hazards

ADR/RID: No

IMDG: No

IATA: No

### Special precautions for user



no data available

### **Transport in bulk according to IMO instruments**

no data available

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## **SECTION 15: Regulatory information**

### **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)**

Listed.

#### **PICCS**

Not Listed.

#### **Vietnam National Chemical Inventory**

Listed.

#### **IECSC**

Not Listed.

#### **Korea Existing Chemicals List (KECL)**

Listed.

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## **SECTION 16: Other information**

### **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?pagelD=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pagelD=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/>

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