

# SAFETY DATA SHEETS

According to the UN GHS revision 10

## 1: Identification

### 1.1 GHS Product identifier

Product name Ethinyl estradiol

### 1.2 Other means of identification

Product number 57-63-6

Other names Ethinyl estradiol

### 1.3 Recommended use of the chemical and restrictions on use

Identified uses Industrial and scientific research use.

Uses advised against no data available

### 1.4 Supplier's details

Company Zhongshan Greenrock Technology Co., Ltd.

Address No. 138, Jinsan Avenue, Sanjiao Town, Zhongshan City, Guangdong Province, China

Telephone +86-2087066781

### 1.5 Emergency phone number

Emergency phone number +86-2087066781

Service hours Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

## 2: Hazard identification

### 2.1 Emergency Overview

Substances with long-term health risks may cause cancer, gene mutations, or reproductive system damage. Even short-term exposure may have long-term health effects and exposure must be strictly controlled.

### 2.2 GHS Classification

Acute toxicity, oral : Category 4

Carcinogenicity : Category 1, 1A, 1B

Reproductive toxicity : Category 1, 1A, 1B

Specific target organ toxicity, repeated exposure : Category 1

Hazardous to the aquatic environment, long-term hazard : Category 1

### 2.3 GHS label elements, including precautionary statements

**Pictogram(s)**



**Signal word**

Danger

**Hazard statement(s)**

H302 Harmful if swallowed  
H350 May cause cancer  
H360 May damage fertility or the unborn child  
H372 Causes damage to organs through prolonged or repeated exposure  
H410 Very toxic to aquatic life with long lasting effects

**Precautionary statement(s)**

**Prevention**

P203 Obtain, read and follow all safety instructions before use.  
P260 Do not breathe dust/fume/gas/mist/vapors/spray.  
P264 Wash hands [and ...] thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

**Response**

P318 if exposed or concerned, get medical advice.  
P319 Get medical help if you feel unwell.  
P330 Rinse mouth.  
P391 Collect spillage.  
P301+P317 IF SWALLOWED, Get medical help.

**Storage**

P405 Store locked up.

**Disposal**

P501 Dispose of contents/container to ...

## 2.4 Physical and chemical

Although they may not be immediately dangerous, some substances may also be irritants or corrosives. They may decompose and produce more toxic products during long-term storage.

## 2.5 Health hazards

Carcinogenicity, Long-term exposure may increase the risk of cancer. Mutagenicity: May cause genetic damage, affecting offspring. Reproductive toxicity: May affect fertility or cause fetal malformations. Symptoms typically appear after a latent period of several years.

## 2.6 Environmental hazards

May persist and accumulate in the environment. Chronic toxicity to aquatic and terrestrial organisms can affect their reproductive capacity. It may accumulate through the food chain, ultimately affecting human health.

## 2.7 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	Concentration
Ethinyl estradiol	Ethinyl estradiol	57-63-6	200-342-2	99%

## 4: First-aid measures

### 4.1 General advice

Stop contact immediately and remove contaminated clothing (rinse with clean water and then wash); wash skin with soap and water, record contact history (including contact time and frequency); and have regular physical examinations (such as chest CT and blood routine once a year).

### 4.2 If inhaled

Move to fresh air. If carcinogenic gases (such as benzene) are inhaled and coughing or chest tightness occurs, seek medical attention. Those with long-term exposure need to monitor lung function and blood routine.

### 4.3 In case of skin contact

Rinse with soap and running water for 15 minutes. If skin is irritated, apply a non-irritating moisturizer; avoid breaking the skin to prevent penetration of substances.

### 4.4 In case of eye contact

Rinse with saline for 10 minutes and then instill artificial tears; if discomfort persists, seek medical attention from an ophthalmologist.

### 4.5 If swallowed

Do not induce vomiting, seek medical attention immediately, and bring the substance's SDS; inform the doctor of the substance's carcinogenic/mutagenic properties and perform a gastrointestinal endoscopy if necessary.

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

Acute symptoms: mild skin/eye irritation; long-term effects: carcinogenicity (such as lung cancer, leukemia), mutagenicity (chromosomal abnormalities), reproductive toxicity (infertility, fetal malformations).

### 4.7 Protection of first-aiders

Rescuers need to wear chemical protective clothing, gas masks (equipped with organic vapor filter cartridges), and chemical protective gloves; equipment must be thoroughly cleaned after contact to avoid residue.

### 4.8 Notes to physician

Inform the doctor of the substance name and exposure history; long-term exposure requires a special physical examination plan (such as blood tests every 6 months and tumor markers every year)

## 5: Fire-fighting measures

### 5.1 Unsuitable extinguishing media

It is strictly forbidden to use fire extinguishing agents that may cause the spread of toxic substances (such as high-pressure water jets); if it contains flammable ingredients, avoid using carbon dioxide (concentrated toxic vapor).

### 5.2 Specific hazards during fire fighting

Combustion releases carcinogenic/mutagenic gases (such as benzopyrene and formaldehyde), which are harmful to health if exposed for a long time. The combustion products of some substances are easily adsorbed on dust, expanding the scope of pollution. Toxic substances are not easy to decompose and require professional handling after fire extinguishing.

### 5.3 Hazardous combustion products

Polycyclic aromatic hydrocarbons (carcinogenic), formaldehyde (mutagenic), heavy metal smoke (such as chromium, nickel), chlorides (when containing chlorine).

### 5.4 Specific extinguishing methods

Small area: Use dry powder/foam to extinguish the fire, and use water mist to dilute the toxic vapor; Large area: Evacuate personnel, if fire must be extinguished, cover with foam (to reduce vapor release); After extinguishing the fire, conduct toxicity testing on the area and dispose of pollutants as hazardous waste.

### 5.5 Special protective equipment for fire-fighters

Wear chemical protective clothing, positive pressure air respirator, and chemical protective gloves; carry a toxic gas detector (to detect benzene, formaldehyde, etc.); wear a dust mask (to protect against toxic dust) during work, and conduct a health check after work.

## 6: Accidental release measures

### 6.1 Protective measures for workers

Wear fully enclosed chemical protective clothing, positive pressure respirator (volatile), toxic-resistant gloves + goggles; workers should undergo regular physical examinations and record their exposure history; eating, drinking and smoking are prohibited.

### 6.2 Environmental protection measure

Isolate the contaminated area within 20 meters and conduct long-term environmental monitoring (soil/air); leaks are prohibited from being discarded at will; the contaminated area must be released after passing the inspection by the environmental protection department.

### 6.3 Containment methods for leaked chemicals

Liquids should be collected in disposable corrosion-resistant containers (marked with hazard categories); solids should be collected in chemical-resistant bags (to prevent dust); and stored separately in dedicated hazardous waste warehouses.

## 6.4 Cleanup methods for chemical spills

Small leakage: absorbed by special adsorption materials and then packaged in chemical-proof bags; large leakage: transferred by professional team using special equipment; after cleaning, the ground is treated with disinfectant.

## 6.5 Measures to prevent the spread of leaks

20-meter isolation zone + warning signs; high-efficiency filtration and ventilation (volatile); chemical isolation belt to prevent spread to residential areas.

## 6.6 Container leakage treatment

Minor leaks: seal with professional sealant + tightness test; serious leaks: evacuate, transfer by professional team, and dispose of the container as hazardous waste.

## 6.7 Special considerations

Operators need special training; protective equipment must be disinfected and tested before reuse; leak handling must be reported to the environmental protection department.

# 7: Handling and storage

## 7.1 Safe storage conditions

Stored in a closed, leak-proof warehouse (walls lined with polyethylene film and floors with impermeable resin); containers are made of non-degradable materials (such as high-density polyethylene, borosilicate glass) with anti-theft lids (requires a key to open); the warehouse is equipped with an air purification system (HEPA filter, filtration efficiency  $\geq 99.97\%$ ).

## 7.2 Storage precautions

Isolate from children and unrelated personnel, and place biohazard signs at the warehouse entrance; store separately to avoid mixing with other chemicals; test the concentration of hazardous substances in the warehouse every quarter to ensure that it is below the occupational exposure limit (such as carcinogen OEL  $\leq 0.01\text{mg}/\text{m}^3$ ); discarded containers must be sterilized at high temperature ( $\geq 121^\circ\text{C}$ , 30 minutes) before disposal.

## 7.3 VCI Storage Grade

Level 4 (lowest): Metal containers are treated with ordinary anti-rust treatment (such as galvanizing, thickness  $\geq 10\mu\text{m}$ ) and corrosion is checked once a year; the humidity in the warehouse is controlled at 45%-65% to avoid damage to the containers due to moisture.

## 7.4 Recommended storage temperature

Store at  $10\text{-}30^\circ\text{C}$ , away from light (e.g., some photosensitive carcinogens must be stored in brown containers); easily degradable substances (e.g., some organic carcinogens) must be stored at  $\leq 25^\circ\text{C}$ , equipped with light-proof and sun-shading facilities; long-term storage (over 1 year) requires the stability of the substance to be checked every 3 months (if the label has a recommended storage temperature, follow the label).

## 7.5 Handling

For precautions see Safety Data Sheet section 2  
Advice on safe handling : Work under hood. Do not inhale substance/mixture.

## 8: Exposure controls/personal protection

### 8.1 Respiratory protection

When exposed to carcinogens (such as benzene and formaldehyde) for a long time, wear a powered air-purifying respirator (APF?50); dust (such as asbestos) requires Type P100 filter cotton to ensure no leakage.

### 8.2 Recommended Filter type

For organic carcinogens, choose Type A2 filter cartridge; for inorganic carcinogenic gases (such as arsine), choose Type E+K composite filter cartridge; for dust, choose Type P100 filter cotton.

### 8.3 Eye/face protection

Wear chemical protection goggles + protective mask. The mask material should be resistant to toxic penetration. The lenses need to be replaced regularly for long-term work (to prevent aging).

### 8.4 Skin and body protection

Wear impermeable chemical protective clothing made of polyethylene + aluminum foil coating (anti-organic vapor penetration); avoid skin damage during operation to prevent material intrusion.

### 8.5 Hand protection

Wear toxic and chemical-resistant gloves made of butyl rubber or fluororubber. Gloves need to be regularly tested for penetration (once every three months) and replaced immediately if unqualified.

### 8.6 Hygiene measures

After work, clean the skin with a special detergent (such as a neutral surfactant), then rinse with running water for 10 minutes; clothes must be washed separately and must not be mixed with household clothes; undergo special physical examinations every year (such as chest CT, chromosome examination).

## 9: Physical and chemical properties and safety characteristics

<b>Physical state</b>	Off-White to Light-Yellow Crystalline Powder
<b>Colour</b>	Fine, white to creamy white crystalline powder
<b>Odour</b>	Odorless
<b>Melting point/freezing point</b>	9°C(lit.)

<b>Boiling point or initial boiling point and boiling range</b>	130°C/12mmHg(lit.)
<b>Flammability</b>	no data available
<b>Lower and upper explosion limit/flammability limit</b>	no data available
<b>Flash point</b>	31°C(lit.)
<b>Auto-ignition temperature</b>	no data available
<b>Decomposition temperature</b>	When heated to decomposition it emits acrid smoke and irritating fumes.
<b>pH</b>	no data available
<b>Kinematic viscosity</b>	no data available
<b>Solubility</b>	less than 1 mg/mL at 21.11°C
<b>Partition coefficient n-octanol/water</b>	no data available
<b>Vapour pressure</b>	1.95X10 <sup>-9</sup> mm Hg at 25°C (est)
<b>Density and/or relative density</b>	1.21g/cm <sup>3</sup>
<b>Relative vapour density</b>	no data available
<b>Particle characteristics</b>	no data available

## 10: Stability and reactivity

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

ETHINYLESTRADIOL may react vigorously with strong oxidizing agents. May react exothermically with reducing agents to generate gaseous hydrogen.

### 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 acrid smoke and irritating fumes.

# 11: Toxicological information

## 11.1 Acute toxicity

Oral: LD50 Rat oral > 5000 mg/kg bw

Inhalation: no data available

Dermal: no data available

## 11.2 Skin corrosion/irritation

no data available

## 11.3 Serious eye damage/irritation

no data available

## 11.4 Respiratory or skin sensitization

no data available

## 11.5 Germ cell mutagenicity

no data available

## 11.6 Carcinogenicity

Evaluation: There is sufficient evidence in humans for the carcinogenicity of post-menopausal estrogen therapy. There is sufficient evidence in experimental animals for the carcinogenicity of estradiol and estrone. There is limited evidence in experimental animals for the carcinogenicity of conjugated equine estrogens, equilin and estriol. There is inadequate evidence in experimental animals for the carcinogenicity of d-equilenin. Overall evaluation: Post-menopausal estrogen therapy is carcinogenic to humans (Group 1).  
/Post-menopausal estrogen therapy/

## 11.7 Reproductive toxicity

no data available

## 11.8 STOT-single exposure

no data available

## 11.9 STOT-repeated exposure

no data available

## 11.10 Aspiration hazard

no data available

## 12: Ecological information

### 12.1 Toxicity

Toxicity to fish: EC50; Species: Danio rerio (Zebra danio, age 6-8 month adult, female); Conditions: freshwater, renewal, 25-28°C, pH 8.0-8.5, hardness 140-145 mg/L CaCO<sub>3</sub>; Concentration: 0.027 nM for 3 weeks; Effect: morphology, decreased ovarian weight in relationship to body weight /98% purity

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

AEROBIC: Ethinylestradiol has been classified as not readily biodegradable using a sewage treatment plant study based in Stockholm, Sweden(1). Biodegradation rates of 1.62 and 148/day of 500 ng/L ethinylestrogen were reported using batch tests using mixed liquor from an activated sludge wastewater treatment plant operating at a 3-day solids retention time and a membrane bioreactor(2).

### 12.3 Bioaccumulative potential

An estimated BCF of 110 was calculated in fish for ethinylestradiol(SRC), using a log Kow of 3.67(1) and a regression-derived equation(2). An estimated log BCF of 2.83(3), corresponding to a BCF of 700(SRC), was calculated in fish for ethinylestradiol using a food-web model(3). According to a classification scheme(4), these BCF estimated values suggest the potential for bioconcentration in aquatic organisms is high(SRC), provided the compound is not metabolized by the organism(SRC).

### 12.4 Mobility in soil

The Koc of ethinylestradiol is estimated as 510(SRC), using a log Kow of 3.67(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that ethinylestradiol is expected to have low mobility in soil. A Freundlich adsorption coefficient, log Kd, of 1.72 has been measured(4). The compound was not detected in the effluent of a 23-day column drainage study using Mahall-Laveen sandy loam soil from an area northwest of Phoenix, AZ and 200 L of treated effluent from a municipal waste treatment facility; reporting limit = 0.005 ug/L(5), suggesting adsorption to soil in the column(SRC). A Kd of 584 L/kg was reported using activated sludge(6). Ethinylestradiol was 98.6%, 99.3%, and 96.4% removed from wastewater final effluent by coal-based, coconut-based, and wood-based granular activated carbon, respectively. COD at an equilibrium concentration of 7 mg/L were 3.16, 4.8, and 71 mg/g, respectively; however, adsorption capacities were reduced in the presence of other competing adsorbates(7).

### 12.5 Other adverse effects

no data available

## 13: Disposal considerations

### 13.1 Disposal methods for waste chemicals

It must be handled by an organization with hazardous waste disposal qualifications, with high-temperature incineration (temperature ? 900°C) being preferred to completely destroy hazardous substances. Waste that

cannot be incinerated must be chemically degraded or stabilized before being safely landfilled.  
Contaminated containers must be sterilized at high temperatures or chemically before disposal.

## 13.2 Precautions

Disposal personnel must wear special protective equipment and undergo regular health checks; waste must be tightly sealed to prevent leakage; waste gas and wastewater generated during the disposal process must undergo special treatment to ensure compliance with standards; disposal records must be kept for a long time (at least 30 years); and mixing with ordinary waste is prohibited.

## 14: Transport information

### 14.1 UN Number

ADR/RID: UN3077

IMDG: UN3077

IATA: UN3077

### 14.2 UN Proper Shipping Name

ADR/RID:  
ENVIRONMENTALLY  
HAZARDOUS SUBSTANCE,  
SOLID, N.O.S.

IMDG: ENVIRONMENTALLY  
HAZARDOUS SUBSTANCE,  
SOLID, N.O.S.

IATA: ENVIRONMENTALLY  
HAZARDOUS SUBSTANCE,  
SOLID, N.O.S.

### 14.3 Transport hazard class(es)

ADR/RID: 9

IMDG: 9

IATA: 9

### 14.4 Packing group, if applicable

ADR/RID: III

IMDG: III

IATA: III

### 14.5 Environmental hazards

ADR/RID: no

IMDG: no

IATA: no

### 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

Chemical name	Common names and synonyms	CAS number	EC number
Ethinyl estradiol	Ethinyl estradiol	57-63-6	200-342-2
New Zealand Inventory of Chemicals (NZIoC)			Listed.

<b>Philippines Inventory of Chemicals and Chemical Substances (PICCS)</b>	Not Listed.
<b>Vietnam National Chemical Inventory</b>	Listed.
<b>Australian Inventory of Industrial Chemicals (AIIC)</b>	Not Listed.
<b>Catalogue of Strictly Restricted Toxic Chemicals in China</b>	Not Listed.
<b>China Catalog of Hazardous chemicals 2015</b>	Not Listed.
<b>European INventory of Existing Commercial chemical Substances</b>	Not Listed.
<b>IARC Monographs on the Evaluation of Carcinogenic Risks to Humans</b>	Not Listed.
<b>TSCA Inventory of Chemical Substances</b>	Listed.

## 16: Other information

### Information on revision

**SDS Creation Date** July 1, 2025  
**SDS Revision Date** July 1, 2025

### Abbreviations and acronyms in SDS

- 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%

### SDS 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](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/>

**Any questions regarding this Safety Data Sheet, Please send your inquiry to [sales@MolBest.com](mailto:sales@MolBest.com)**

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