

Safety Data Sheet

β -Estradiol

Version : V2.0.0.1

Report No. : BWJ4856-2016-MSDS-EP

Creation Date : 2026/01/12

Revision Date : -



*Prepared in accordance with EU REACH Regulation (REACH 1907/2006 with amendment 2020/878)

1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

| | |
|---------------------------|--|
| Product Name | β -Estradiol |
| Cat No. | BWJ4856-2016 |
| CAS No. | 50-28-2 |
| EC No. | 200-023-8 |
| Molecular Formula | C ₁₈ H ₂₄ O ₂ |
| REACH Registration Number | - |
| UFI | Not applicable |

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

| | |
|--------------------------|------------------------------|
| Relevant identified uses | Please consult manufacturer. |
| Uses advised against | Please consult manufacturer. |

1.3 Details of the supplier of the Safety Data Sheet

| | |
|------------------------|--|
| Name of the company | Weiyel Inc |
| Address of the company | Hedian Light Industrial Park, Chengguan Town, Shangcheng County, Xinyang City, Henan Province, China |
| Post code | 465350 |
| Telephone number | 010-58103678 |
| Fax number | 010-84840368 |
| E-mail address | info@weiyel.com |

1.4 Emergency telephone number

| | |
|----------------------------|--------------|
| Emergency telephone number | 010-58103678 |
| Opening hours | 24h |

2 Hazards identification

2.1 CLP classification according to Regulation (EC) No. 1272/2008 with amendment 2023/707

| | |
|---|-------------|
| Carcinogenicity | Category 2 |
| Reproductive toxicity | Category 1A |
| Reproductive Toxicity - effects on or via lactation | Additional |
| Hazardous to the aquatic environment - long-term (chronic) hazard | Category 1 |

| | |
|---------------------------------------|------------|
| Endocrine disruption for human health | Category 1 |
| Endocrine disruption for environment | Category 1 |

2.2 Label elements

| | |
|-------------------|---|
| Hazard pictograms |  |
| Signal word | Danger |

Hazard statements

| | |
|--------|--|
| H351 | Suspected of causing cancer |
| H360Fd | May damage fertility, Suspected of damaging the unborn child |
| H362 | May cause harm to breast-fed children |
| H410 | Very toxic to aquatic life with long lasting effects |
| EUH380 | May cause endocrine disruption in humans |
| EUH430 | May cause endocrine disruption in the environment |

Precautionary statements

◆ Prevention

| | |
|------|--|
| P201 | Obtain special instructions before use. |
| P202 | Do not handle until all safety precautions have been read and understood. |
| P260 | Do not breathe dust/fume. |
| P263 | Avoid contact during pregnancy and while nursing. |
| P264 | Wash hands and other parts of the body (if related) 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. |

◆ Response

| | |
|-----------|--|
| P391 | Collect spillage. |
| P308+P313 | IF exposed or concerned: Get medical advice/attention. |

◆ Storage

| | |
|------|------------------|
| P405 | Store locked up. |
|------|------------------|

◆ Disposal

| | |
|------|---|
| P501 | Dispose of contents/container in accordance with local/regional/national/international regulations. |
|------|---|

2.3 Other hazards

◆ Results of PBT and vPvB assessment

| Component | Results of PBT and vPvB assessment [according to (EC) No 1907/2006] |
|-----------|---|
| Estradiol | Insufficient information, temporarily unable to evaluate |

◆ Results of endocrine disrupting properties assessment

| Component | Results of endocrine disrupting properties assessment [according to (EU) No 2017/2100 or (EU) No 2018/605] |
|-----------|--|
| Estradiol | Insufficient information, temporarily unable to evaluate |

◆ Other

Not applicable.

3 Composition/information on ingredients

3.1 Substance

| Component | Weight % content(or range) | Classification according to Regulation (EC) No. 1272/2008 with amendment 2023/707 [CLP] | Specific Conc. Limits, M-factors |
|---|----------------------------|---|----------------------------------|
| Estradiol CAS : 50-28-2 EC : 200-023-8 Index No. : - | 98.89 | Carcinogenicity, Category 2, H351; Reproductive toxicity, Category 1A, H360; Reproductive Toxicity - effects on or via lactation, Additional, H362; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 1, H410; Endocrine disruption for human health, Category 1, EUH380; Endocrine disruption for environment, Category 1, EUH430 | M(Chronic)=10000 |

3.2 Mixture

Not applicable

4 First-aid measures

4.1 Description of first aid measures

| | |
|----------------------------|---|
| General advice | Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance. |
| Eye contact | Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable. |
| Skin contact | Take off contaminated clothing and shoes immediately. Wash off with plenty of soap and water for at least 15 minutes and consult a physician if feel uncomfortable. |
| Ingestion | Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately. |
| Inhalation | Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately. |
| Protecting of first-aiders | Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination. |

4.2 Most important symptoms/effects, acute and delayed

| | |
|---|--|
| 1 | Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. |
|---|--|

4.3 Indication of any immediate medical attention and special treatment needed

| | |
|---|--------------------------|
| 1 | Treat symptomatically. |
| 2 | Symptoms may be delayed. |

5 Fire-fighting measures

5.1 Extinguishing media

| | |
|--------------------------------|--|
| Suitable extinguishing media | Use extinguishing media suitable for surrounding area. |
| Unsuitable extinguishing media | There is no restriction on the type of extinguisher which may be used. |

5.2 Specific hazards arising from the substance or mixture

| | |
|---|---|
| 1 | Development of hazardous combustion gases or vapor possible in the event of fire. |
| 2 | May expand or decompose explosively when heated or involved in fire. |

5.3 Advice for firefighters

| | |
|---|---|
| 1 | As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear. |
| 2 | Fight fire from a safe distance, with adequate cover. |
| 3 | Prevent fire extinguishing water from contaminating surface water or the ground water system. |

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

| | |
|---|---|
| 1 | Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges. |
| 2 | Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. |
| 3 | Use personal protective equipment, do not breathe dust/fume. |

6.2 Environmental precautions

| | |
|---|---|
| 1 | Prevent further leakage or spillage if safe to do so. |
| 2 | Discharge into the environment must be avoided. |

6.3 Methods and materials for containment and cleaning up

| | |
|---|---|
| 1 | Cut off the source of the leak as much as possible. |
| 2 | Keep leaks in a ventilated place. |
| 3 | Isolation of contaminated areas and restrictions on access. |
| 4 | It is recommended that emergency personnel wear dust masks. |
| 5 | Collect the spill with a clean shovel and place it in a clean, dry, loosely closed container and move the container away from the leak. |
| 6 | Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations. |

6.4 Reference to other sections

| | |
|---|--|
| 1 | Personal Protective Equipment advice is contained in Section 8 of the SDS. |
| 2 | Disposal considerations advice is contained in Section 13 of the SDS. |

7 Handling and storage

7.1 Precautions for safe handling

◆ Protective measures

| | |
|---|---|
| 1 | Handling is performed in a well ventilated place. |
| 2 | Wear suitable protective equipment. |
| 3 | Avoid contact with skin and eyes. |

◆ Measures to prevent fire

| | |
|---|---|
| 1 | Keep away from heat/sparks/open flames/ hot surfaces. |
| ◆ Measures to prevent aerosol and dust generation | |
| 1 | Avoid formation of dust and aerosols. |
| 2 | Provide appropriate exhaust ventilation at places where dust is formed. |
| ◆ Advice on general occupational hygiene | |
| 1 | Wash hands and face after using the substances. |
| 2 | Replace the contaminated clothing immediately. |

7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|--|
| 1 | Keep containers tightly closed. |
| 2 | Keep containers in a dry, cool and well-ventilated place. |
| 3 | Keep away from heat/sparks/open flames/hot surfaces. |
| 4 | Store away from incompatible materials and foodstuff containers. |

7.3 Specific end use(s)

| | |
|---|--|
| 1 | In addition to use mentioned in the Section 1.2, unforeseen other specific end uses. |
|---|--|

8 Exposure controls/personal protection

8.1 Control parameters

◆ Occupational exposure limit values

| | |
|---|-------------------------|
| Occupational Exposure limit values | No relevant regulations |
|---|-------------------------|

◆ Biological limit values

| | |
|--------------------------------|-------------------------|
| Biological limit values | No relevant regulations |
|--------------------------------|-------------------------|

◆ Monitoring methods

| | |
|---|---|
| 1 | EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. |
| 2 | GBZ/T 300 and GBZ/T 160 series standard Determination of toxic substances in workplace air. |

◆ Derived No effect level (DNEL)

| Component | Route of exposure | DNEL for Workers | | | |
|-----------|-------------------|-----------------------|--------------------------|-------------------------|----------------------------|
| | | Acute effects (local) | Acute effects (systemic) | Chronic effects (local) | Chronic effects (systemic) |
| Estradiol | Inhalation | No data available | No data available | No data available | No data available |
| | Oral | No data available | No data available | No data available | No data available |
| | Dermal | No data available | No data available | No data available | No data available |

◆ Predicted No Effect Concentration (PNEC)

| | |
|---|--------------------------|
| Predicted No Effect Concentration (PNEC) | No information available |
|---|--------------------------|

8.2 Exposure controls

8.2.1 Engineering controls

| | |
|---|--|
| 1 | Ensure adequate ventilation, especially in confined areas. |
| 2 | Ensure that eyewash stations and safety showers are close to the workstation location. |

| | |
|---|--|
| 3 | Use explosion-proof electrical/ventilating/lighting/equipment. |
| 4 | Set up emergency exit and necessary risk-elimination area. |

8.2.2 Personal protection equipment

| | |
|--------------------------|--|
| General requirement |  |
| Eye protection | Must wear appropriate safety goggles. |
| Hand protection | Must wear appropriate chemical protective gloves. |
| Respiratory protection | Must wear appropriate personal respiratory protective equipment. |
| Skin and body protection | Must wear appropriate chemical protective clothing and chemical resistant shoes. |

8.2.3 Environmental exposure controls

| | |
|---------------------------------|--------------------------|
| Environmental exposure controls | No information available |
|---------------------------------|--------------------------|

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|---|---|
| Physical state | White to off-white |
| Colour | White to off-white |
| Odor | No information available |
| Odor threshold | No information available |
| pH | No information available |
| Melting point/freezing point(°C) | 169.9 |
| Initial boiling point and boiling range(°C) | 413.5 (101.325 kPa) |
| Flash point(Closed cup, °C) | Not applicable |
| Evaporation rate | Not applicable |
| Flammability | No information available |
| Upper/lower explosive limits[%(v/v)] | Upper limit : No information available ; Lower limit : No information available |
| Vapor pressure | 3E-08Pa (25°C) |
| Vapor density(Air = 1) | Not applicable |
| Relative density(Water=1) | 1.202 (20 °C) |
| Solubility | 1.5mg/L (20 °C) |
| n-octanol/water partition coefficient | 3.942 (20 °C) |
| Auto-ignition temperature(°C) | No information available |
| Decomposition temperature(°C) | No information available |
| Kinematic viscosity | Not applicable |
| Explosive properties | No information available |
| Oxidizing properties | No information available |
| Particle characteristics | No information available |

9.2 Other information

9.2.1 Information with regard to physical hazard classes

| | |
|--|--------------------------|
| Information with regard to physical hazard classes | No information available |
|--|--------------------------|

9.2.2 Other safety characteristics

| | |
|------------------------------|--------------------------|
| Other safety characteristics | No information available |
|------------------------------|--------------------------|

10 Stability and reactivity

Stability and reactivity

| | |
|---|--|
| 10.1 Reactivity | Contact with incompatible substances can cause decomposition or other chemical reactions. |
| 10.2 Chemical stability | Stable under proper operation and storage conditions. |
| 10.3 Possibility of hazardous reactions | No information available. |
| 10.4 Conditions to avoid | Incompatible materials, heat, flame and spark. |
| 10.5 Incompatible materials | No information available. |
| 10.6 Hazardous decomposition products | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |

11 Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008 with amendment 2023/707

| Estradiol(Component) | |
|-------------------------------|--|
| Skin corrosion/irritation | Based on available data, the classification criteria are not met |
| Serious eye damage/irritation | Based on available data, the classification criteria are not met |
| Skin sensitization | Based on available data, the classification criteria are not met |
| Respiratory sensitization | Based on available data, the classification criteria are not met |
| Reproductive toxicity | May damage fertility, Suspected of damaging the unborn child(Category 1A); May cause harm to breast-fed children(Additional) |
| STOT-single exposure | Based on available data, the classification criteria are not met |
| STOT-repeated exposure | Based on available data, the classification criteria are not met |
| Aspiration hazard | Based on available data, the classification criteria are not met |
| Germ cell mutagenicity | Based on available data, the classification criteria are not met |

Acute toxicity

| | |
|----------------|--------------------------|
| Acute toxicity | No information available |
|----------------|--------------------------|

Carcinogenicity

| Component | List of carcinogens by the IARC Monographs | Report on Carcinogens by NTP |
|-----------|--|------------------------------|
| Estradiol | Not Listed | Category K |

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

| Component | Endocrine disrupting properties |
|-----------|---------------------------------|
| Estradiol | No information available |

11.2.2 Other Information

| | |
|-------------------|------------------|
| Other Information | See Section 11.1 |
|-------------------|------------------|

12 Ecological information**12.1 Toxicity****Acute aquatic toxicity**

| | |
|------------------------|--------------------------|
| Acute aquatic toxicity | No information available |
|------------------------|--------------------------|

Chronic aquatic toxicity

| | |
|--------------------------|--------------------------|
| Chronic aquatic toxicity | No information available |
|--------------------------|--------------------------|

12.2 Persistence and degradability

| Component | Persistence (water/soil) | Persistence (air) |
|-----------|--------------------------|-------------------|
| Estradiol | High | High |

12.3 Bioaccumulative potential

| Component | Bioaccumulative potential | Comments |
|-----------|---------------------------|--------------|
| Estradiol | Medium | Log Kow=4.01 |

12.4 Mobility in soil

| Component | log Koc | Remark |
|-----------|---------|--------------|
| Estradiol | 0.53148 | 25 °C , pH=6 |

12.5 Results of PBT and vPvB assessment

| Component | Results of PBT and vPvB assessment [according to (EC) No 1907/2006] |
|-----------|---|
| Estradiol | Insufficient information, temporarily unable to evaluate |

12.6 Endocrine disrupting properties

| Component | Endocrine disrupting properties |
|-----------|---------------------------------|
| Estradiol | No information available |

12.7 Other adverse effects

| | |
|--|--------------------------|
| | No information available |
|--|--------------------------|

13 Disposal considerations**13.1 Waste treatment methods**

| | |
|--------------------------|--|
| Waste chemicals | Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal. |
| Contaminated packaging | Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible. |
| Disposal recommendations | Refer to section waste chemicals and contaminated packaging. |

14 Transport information

Label and Mark

| | |
|--------------------|----------------|
| Transporting Label | Not applicable |
|--------------------|----------------|

IMDG-CODE

| | |
|-----------|--|
| IMDG-CODE | NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS |
|-----------|--|

IATA-DGR

| | |
|----------|--|
| IATA-DGR | NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS |
|----------|--|

UN-ADR

| | |
|--------|--|
| UN-ADR | NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS |
|--------|--|

Special precautions for user

| | |
|--|---|
| | Transport vehicles should be equipped with the appropriate variety and quantity of fire equipment and emergency equipment leakage during transport. Before transport, should be preceded by checking whether container integrity, sealing. The transport unit must be placarded and marked in accordance with relevant transporting requirements. |
|--|---|

Maritime transport in bulk according to IMO instruments

| | |
|--|---------------|
| ◆ Transport in bulk according to Annex II of MARPOL and the IBC code | Not Available |
| ◆ Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code | Not Available |
| ◆ Transport in bulk in accordance with the IGC Code | Not Available |

15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

International chemical inventory

| Component | A | B | C | D | E | F | G | H | I | J | K | L | M |
|-----------|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Estradiol | √ | √ | × | √ | √ | √ | × | × | √ | × | √ | √ | √ |

- [A] China Inventory of Existing Chemical Substances(IECSC)
- [B] European Inventory of Existing Commercial Chemical Substances(EC inventory)
- [C] United States Toxic Substances Control Act Inventory(TSCA)
- [D] Canadian Domestic Substances List(DSL)
- [E] New Zealand Inventory of Chemicals(NZIoC)
- [F] Philippines Inventory of Chemicals and Chemical Substances(PICCS)
- [G] Korea Existing Chemicals Inventory(KECL)
- [H] Australian. Inventory of Industrial Chemical (AIICS)
- [I] Japan Inventory of Existing & New Chemical Substances(ENCS)
- [J] Thailand Existing Chemicals Inventory(TECI)
- [K] Mexico National Inventory of Chemical Substances (INSQ)
- [L] Russia Inventory of Existing Substances (DRAFT)
- [M] Inventory of Existing Chemical Substances in Taiwan, China (TCSI)

List of Chemical Substances under International Conventions

| Component | A | B | C |
|-----------|---|---|---|
|-----------|---|---|---|

| | | | |
|------------------|---|---|---|
| Estradiol | x | x | x |
|------------------|---|---|---|

- [A] The Montreal Protocol on Substances that Deplete the Ozone Layer
 [B] Stockholm Convention on Persistent Organic Pollutants (POPs)
 [C] Rotterdam Convention on the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade

European chemical inventory

| Component | A | B | C | D | E | F | G | H | I |
|------------------|---|---|---|---|---|---|---|---|---|
| Estradiol | x | x | x | √ | √ | x | x | x | x |

- [A] Candidate list of Substances of Very High Concern for authorization under EU REACH regulation
 [B] Substances requiring authorisation under EU REACH regulation
 [C] Substances restricted under EU REACH
 [D] Pre-registered substances under EU REACH
 [E] Registered substances under EU REACH
 [F] Substance Evaluation – CoRAP under EU REACH
 [G] List of priority substances under EU water policy (Directive 2455/2001/EC)
 [H] Substances subject to POPs Regulation
 [I] Substances proposed as POPs

Note:

“√” Indicates that the substance included in the regulations.

“x” No data or not included in the regulations.

German water hazard class(WGK)

| | |
|--|--------------------------|
| | No information available |
|--|--------------------------|

German technical instructions on air quality control(TA LUFT)

| | |
|--|--------------------------|
| | No information available |
|--|--------------------------|

German technical rules for hazardous substances(TRGS)

| | |
|--|--------------------------|
| | No information available |
|--|--------------------------|

15.2 Chemical safety assessment

| | |
|--|--|
| | No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier. |
|--|--|

16 Other information

Information on revision

| | |
|----------------------------|------------|
| Creation Date | 2026/01/12 |
| Revision Date | - |
| Reason for revision | - |

Reference

- [1] IPCS: The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>.
- [2] IARC, website: <http://www.iarc.fr/>.
- [3] OECD: The Global Portal to Information on Chemical Substances, website: <https://www.echemportal.org/echemportal/>.
- [4] CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>.
- [5] NLM: ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>.
- [6] EPA: Integrated Risk Information System, website: <http://cfpub.epa.gov/iris/>.
- [7] U.S. Department of Transportation: ERG, website: <http://www.phmsa.dot.gov/hazmat/library/erg>.
- [8] Germany GESTIS-database on hazard substance, website: <http://gestis-en.itrust.de/>.

Abbreviations and acronyms

CAS Chemical Abstracts Service UN The United Nations

| | | | |
|------------------|--------------------------------------|-----------|---|
| PC-STEL | Short term exposure limit | OECD | Organization for Economic Co-operation and Development |
| PC-TWA | Time Weighted Average | IMDG-CODE | International Maritime Dangerous Goods CODE |
| MAC | Maximum Allowable Concentration | IARC | International Agency for Research on Cancer |
| DNEL | Derived No Effect Level | ICAO | International Civil Aviation Organization |
| PNEC | Predicted No Effect Concentration | IATA | International Air Transportation Association |
| NOEC | No Observed Effect Concentration | ACGIH | American Conference of Governmental Industrial Hygienists |
| LC ₅₀ | Lethal Concentration 50% | NFPA | National Fire Protection Association |
| LD ₅₀ | Lethal Dose 50% | NTP | National Toxicology Program |
| EC ₅₀ | Effective Concentration 50% | PBT | Persistent, Bioaccumulative, Toxic |
| EC _x | Effective Concentration X% | vPvB | very Persistent, very Bioaccumulative |
| P _{OW} | Partition coefficient Octanol: Water | CMR | Carcinogens, mutagens or substances toxic to reproduction |
| BCF | Bioconcentration factor | RPE | Respiratory Protective Equipment |
| ED | Endocrine disruptor | | |

Disclaimer

This Safety Data Sheet (SDS) was prepared according to REACH Regulation. The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.