

Material Safety Data Sheet

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Version 1.3

According to 91/155/EEC

Classified as Hazardous according to the criteria of EU Annex 1 and NOHSC.

1 - Product and Company Information

Product Name	PROTAGLANDIN E(1)
Product Number	82474
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2 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I Index Number
ALPROSTADIL	745-65-3	212-017-2	None

Formula	C ₂₀ H ₃₄ O ₅
Molecular Weight	354.49 AMU
Synonyms	Alprostadil * 3-Hydroxy-2-(3-hydroxy-1-octenyl)-5-oxocyclopentaneheptanoic acid * 1-3-Hydroxy-2-(3-hydroxy-1-octenyl)-5-oxocyclopentaneheptanoic acid * PGE-1 * 1-PGE1 * Prostaglandin E1 * (-)-Protaglandin E1 * 1-Protaglandin E1 * Prost-13-en-1-oic acid, 11,15-dihydroxy-9-oxo-, (11-alpha,13E,15S)-(9CI) * 3-Hydroxy-2-(3-hydroxy-1-octenyl)-5-oxocyclopentaneheptanoic acid * Prostaglandin E1, (-)-Protaglandin E1, Alprostadil, 1-PGE1, 1-Protaglandin E1, PGE-1 * 1-3-Hydroxy-2-(3-hydroxy-1-octenyl)-5-oxocyclopentaneheptanoic acid * Prost-13-en-1-oic acid, 11,15-dihydroxy-9-oxo-, (11-alpha,13E,15S)-(9CI)

3 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT
Harmful if swallowed.

4 - First Aid Measures

AFTER INHALATION

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

AFTER SKIN CONTACT

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

AFTER EYE CONTACT

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

AFTER INGESTION

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

5 - Fire Fighting Measures

EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

SPECIAL RISKS

Specific Hazard(s): Emits toxic fumes under fire conditions.
Explosion Hazards: May form explosive mixtures with air

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

6 - Accidental Release Measures

PERSONAL PRECAUTION PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL
Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

7 - Handling and Storage

HANDLING

Directions for Safe Handling: Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE

Conditions of Storage: Keep tightly closed.
Store at -20°C

8 - Exposure Controls / Personal Protection

ENGINEERING CONTROLS

Safety shower and eye bath. Use only in a chemical fume hood.

GENERAL HYGIENE MEASURES

Wash thoroughly after handling.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator.
Hand Protection: Compatible chemical-resistant gloves.
Eye Protection: Chemical safety goggles.

9 - Physical and Chemical Properties

pH	N/A
BP/BP Range	N/A
MP/MP Range	113 - 116 °C
Flash Point	N/A
Flammability	N/A
Autoignition Temp	N/A
Oxidizing Properties	N/A
Explosive Properties	N/A
Explosion Limits	N/A
Vapor Pressure	N/A
SG/Density	N/A
Partition Coefficient	N/A
Viscosity	N/A
Vapor Density	N/A
Saturated Vapor Conc.	N/A
Evaporation Rate	N/A
Bulk Density	N/A
Decomposition Temp.	N/A
Solvent Content	N/A
Water Content	N/A
Surface Tension	N/A
Conductivity	N/A
Miscellaneous Data	N/A
Solubility	Solvent: 10 mg/ml acetone clear, colorless

10 - Stability and Reactivity

STABILITY

Stable: Stable.

Conditions to Avoid: Light. Heat. Moisture.

Materials to Avoid: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

11 - Toxicological Information

RTECS NUMBER: GY4569800

ACUTE TOXICITY

LD50

Oral

Rat

228 mg/kg

LD50

Intraperitoneal

Rat

24900 UG/KG

LD50

Subcutaneous

Rat
18600 UG/KG

LD50
Intravenous
Rat
19200 UG/KG

LD50
Intraarterial
Rat
21 MG/KG
Remarks: Behavioral:Altered sleep time (including change in
righting reflex). Lungs, Thorax, or Respiration:Dyspnea.
Gastrointestinal:Hypermotility, diarrhea.

LD50
Oral
Mouse
186 mg/kg

LD50
Intraperitoneal
Mouse
19800 UG/KG

LD50
Subcutaneous
Mouse
26400 UG/KG

LD50
Intravenous
Mouse
21 MG/KG

SIGNS AND SYMPTOMS OF EXPOSURE

To the best of our knowledge, the chemical, physical, and
toxicological properties have not been thoroughly investigated.

ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.
Skin Absorption: May be harmful if absorbed through the skin.
Eye Contact: May cause eye irritation.
Inhalation: May be harmful if inhaled. Material may be
irritating to mucous membranes and upper respiratory tract.
Ingestion: Harmful if swallowed.

TARGET ORGAN INFORMATION

Smooth muscle. Heart.

CHRONIC EXPOSURE - MUTAGEN

Rat
200 UG/KG
Subcutaneous
Other mutation test systems

Mouse
1 UMOL/L
Cell Type: Other cell types
DNA inhibition

Mouse
100 NMOL/L
Cell Type: Other cell types
Other mutation test systems

Mouse
19 MG/L
Cell Type: Other cell types
Cytogenetic analysis

CHRONIC EXPOSURE - TERATOGEN

Species: Rat
Dose: 20 MG/KG
Route of Application: Subcutaneous
Exposure Time: (6-15D PREG)
Result: Specific Developmental Abnormalities: Central nervous system. Specific Developmental Abnormalities: Eye, ear. Specific Developmental Abnormalities: Homeostasis

Species: Mouse
Dose: 5 MG/KG
Route of Application: Subcutaneous
Exposure Time: (16D PREG)
Result: Effects on Embryo or Fetus: Fetal death.

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Woman
Dose: 64 UG/KG
Route of Application: Intravenous
Exposure Time: (20W PREG)
Result: Effects on Fertility: Abortion.

Species: Woman
Dose: 360 NG/KG
Route of Application: Intravenous
Exposure Time: (20W PREG)
Result: Maternal Effects: Uterus, cervix, vagina.

Species: Rat
Dose: 500 UG/KG
Route of Application: Intraperitoneal
Exposure Time: (7D POST)
Result: Maternal Effects: Postpartum.

Species: Rat
Dose: 2 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (2D PREG)
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea).

Species: Rat
Dose: 10 MG/KG
Route of Application: Subcutaneous
Exposure Time: (6-15D PREG)
Result: Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific

Developmental Abnormalities: Musculoskeletal system.

Species: Rat
Dose: 5 MG/KG
Route of Application: Subcutaneous
Exposure Time: (13D PREG)
Result: Maternal Effects: Ovaries, fallopian tubes. Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Fertility: Other measures of fertility

Species: Rat
Dose: 15 MG/KG
Route of Application: Subcutaneous
Exposure Time: (30D MALE)
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count). Paternal Effects: Testes, epididymis, sperm duct. Paternal Effects: Prostate, seminal vessicle, Cowper's gland, accessory glands.

Species: Rat
Dose: 15 MG/KG
Route of Application: Subcutaneous
Exposure Time: (21D PREG)
Result: Effects on Newborn: Biochemical and metabolic.

Species: Rat
Dose: 9 MG/KG
Route of Application: Intravenous
Exposure Time: (90D MALE)
Result: Paternal Effects: Testes, epididymis, sperm duct. Paternal Effects: Prostate, seminal vessicle, Cowper's gland, accessory glands.

Species: Mouse
Dose: 1 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (19D PREG)
Result: Maternal Effects: Parturition.

Species: Mouse
Dose: 45 MG/KG
Route of Application: Subcutaneous
Exposure Time: (15D MALE)
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count).

Species: Mouse
Dose: 30 MG/KG
Route of Application: Subcutaneous
Exposure Time: (15D MALE)
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count). Paternal Effects: Prostate, seminal vessicle, Cowper's gland, accessory glands.

Species: Mouse
Dose: 10 MG/KG
Route of Application: Subcutaneous
Exposure Time: (16D PREG)
Result: Effects on Fertility: Abortion.

Species: Rabbit
Dose: 2500 UG/KG
Route of Application: Subcutaneous
Exposure Time: (1D PRE)
Result: Effects on Fertility: Other measures of fertility

Species: Rabbit
Dose: 2 MG/KG
Route of Application: Subcutaneous
Exposure Time: (2D PREG)
Result: Effects on Fertility: Other measures of fertility

Species: Guinea pig
Dose: 1200 UG/KG
Route of Application: Subcutaneous
Exposure Time: (23-24D PREG)
Result: Effects on Fertility: Abortion.

12 - Ecological Information

No data available.

13 - Disposal Considerations

SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

14 - Transport Information

RID/ADR

Non-hazardous for road transport.

IMDG

Non-hazardous for sea transport.

IATA

Non-hazardous for air transport.

15 - Regulatory Information

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

INDICATION OF DANGER: Xn

Harmful.

R-PHRASES: 22

Harmful if swallowed.

S-PHRASES: 36

Wear suitable protective clothing.

16 - Other Information

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or

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