1 Identification

· Product identifier
· Trade name: (S)-Pramipexole (hydrochloride)
· Synonym
  (6S)-4,5,6,7-tetrahydro-N6-propyl-2,6-benzothiazolediamine, dihydrochloride
  (–)-Pramipexole
· Article number: 11981
· CAS Number: 104632-25-9
· EC number: 629-842-2
· Application of the substance / the mixture For research use only, not for human or veterinary use.
· Details of the supplier of the safety data sheet
  Manufacturer/Supplier:
  Cayman Chemical Co.
  1180 E. Ellsworth Rd.
  Ann Arbor, MI 48108
  USA
· Information department: Product safety department
· Emergency telephone number:
  During normal opening times: +1 (734) 971-3335
  US/CANADA: 800-424-9300
  Outside US/CANADA: 703-741-5970

2 Hazard(s) identification

· Classification of the substance or mixture

GHS07

Acute Tox. 4 H302 Harmful if swallowed.
Skin Sens. 1 H317 May cause an allergic skin reaction.

Aquatic Acute 3 H402 Harmful to aquatic life.
Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

· Label elements
· GHS label elements
  The substance is classified and labeled according to the Globally Harmonized System (GHS).
· Hazard pictograms

GHS07

· Signal word Warning

(Contd. on page 2)
Trade name: (S)-Pramipexole (hydrochloride)

- **Hazard statements**
  - H302 Harmful if swallowed.
  - H317 May cause an allergic skin reaction.
  - H402 Harmful to aquatic life.
  - H412 Harmful to aquatic life with long lasting effects.

- **Precautionary statements**
  - Avoid breathing dust/fume/gas/mist/vapors/spray
  - Wash thoroughly after handling.
  - Do not eat, drink or smoke when using this product.
  - Contaminated work clothing must not be allowed out of the workplace.
  - Avoid release to the environment.
  - Wear protective gloves.
  - If swallowed: Call a poison center/doctor if you feel unwell.
  - Rinse mouth.
  - If on skin: Wash with plenty of water.
  - If skin irritation or rash occurs: Get medical advice/attention.
  - Specific treatment (see on this label).
  - Wash contaminated clothing before reuse.
  - Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Classification system:**
  - **NFPA ratings (scale 0 - 4)**
    - Health = 2
    - Fire = 0
    - Reactivity = 0
  - **HMIS-ratings (scale 0 - 4)**
    - HEALTH 2
    - FIRE 0
    - REACTIVITY 0

- **Other hazards**
  - **Results of PBT and vPvB assessment**
    - PBT: Not applicable.
    - vPvB: Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**
  - 104632-25-9 (S)-Pramipexole (hydrochloride)
- **Identification number(s)**
- **EC number:** 629-842-2

### 4 First-aid measures

- **Description of first aid measures**
  - **General information:**
    - Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
  - **After inhalation:**
    - Supply fresh air and to be sure call for a doctor.
Trade name: (S)-Pramipexole (hydrochloride)

In case of unconsciousness place patient stably in side position for transportation.

- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** Immediately call a doctor.
- **Information for doctor:**
  - **Most important symptoms and effects, both acute and delayed**
    May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects.
    No further relevant information available.
  - **Indication of any immediate medical attention and special treatment needed**
    No further relevant information available.

### 5 Fire-fighting measures

- **Extinguishing media**
  - **Suitable extinguishing agents:**
    Use fire fighting measures that suit the environment.
    A solid water stream may be inefficient.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
  - **Protective equipment:** No special measures required.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:**
  - Inform respective authorities in case of seepage into water course or sewage system.
  - Do not allow to enter sewers/surface or ground water.
- **Methods and material for containment and cleaning up:** Pick up mechanically.
- **Reference to other sections**
  - See Section 7 for information on safe handling.
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**
  - **PAC-1:** Substance is not listed.
  - **PAC-2:** Substance is not listed.
  - **PAC-3:** Substance is not listed.

### 7 Handling and storage

- **Handling:**
  - **Precautions for safe handling**
    No special precautions are necessary if used correctly.
    Avoid breathing dust/fume/gas/mist/vapours/spray.
    Avoid prolonged or repeated exposure.
    Keep away from sources of ignition.
    Take precautionary measures against static discharge.
  - **Information about protection against explosions and fires:** No special measures required.
  - **Conditions for safe storage, including any incompatibilities**
    Keep container tightly closed.
    Store in accordance with information listed on the product insert.
8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.
- Control parameters
  - Components with limit values that require monitoring at the workplace: Not required.
  - Additional information: The lists that were valid during the creation were used as basis.
- Exposure controls
  - Personal protective equipment:
  - General protective and hygienic measures: Immediately remove all soiled and contaminated clothing.
    Wash hands before breaks and at the end of work.
  - Breathing equipment: Not required.
  - Protection of hands:

![Protective gloves](image)

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- Material of gloves
  - The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- Penetration time of glove material
  - The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- Eye protection: Not required.

9 Physical and chemical properties

- Information on basic physical and chemical properties
  - General Information
    - Appearance:
      - Form: Crystalline
      - Color: Not determined.
      - Odor: Characteristic
    - Structural Formula: C10H17N3S • 2HCl
    - Molecular Weight: 284.2 g/mol
    - Odor threshold: Not determined.
  - pH-value: Not applicable.
### 10 Stability and reactivity

- **Reactivity**: No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided**: No decomposition if used according to specifications.
- **Possibility of hazardous reactions**: No dangerous reactions known.
- **Conditions to avoid**: No further relevant information available.
- **Incompatible materials**: strong oxidizing agents
- **Hazardous decomposition products**: carbon oxides, hydrogen chloride, nitrogen oxides, sulfur oxides

### 11 Toxicological information

- **RTECS Number**: DL3367000
- **Information on toxicological effects**
- **Acute toxicity**:
  - **LD/LC50 values that are relevant for classification**:
    | Oral         | TDLO       |
    |--------------|------------|
    | TDLO         | 0.0071 mg/kg (man) |
    |              | 0.02 mg/kg (mouse)  |
Trade name: (S)-Pramipexole (hydrochloride)

Subcutaneous TDLO 0.1 mg/kg (mouse)

- Primary irritant effect:
  - on the skin: No irritant effect.
  - on the eye: No irritating effect.
  - Sensitization: Sensitization possible through skin contact.
- Additional toxicological information:
  - Carcinogenic categories
    - IARC (International Agency for Research on Cancer) Substance is not listed.
    - NTP (National Toxicology Program) Substance is not listed.
    - OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed.

**12 Ecological information**

- Toxicity
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability No further relevant information available.
  - Behavior in environmental systems:
    - Bioaccumulative potential No further relevant information available.
    - Mobility in soil No further relevant information available.
- Ecotoxicological effects:
  - Remark: Harmful to fish
- Additional ecological information:
  - General notes:
    - Water hazard class 2 (Self-assessment): hazardous for water
    - Do not allow product to reach ground water, water course or sewage system.
    - Danger to drinking water if even small quantities leak into the ground.
    - Harmful to aquatic organisms
  - Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.
  - Other adverse effects No further relevant information available.

**13 Disposal considerations**

- Waste treatment methods
  - Recommendation:
    - Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
  - Uncleaned packagings:
    - Recommendation: Disposal must be made according to official regulations.

**14 Transport information**

- UN-Number
  - DOT, IMDG, IATA: not regulated
- UN proper shipping name
  - DOT, IMDG, IATA: not regulated
15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  No further relevant information available.
- Sara
- Section 355 (extremely hazardous substances): Substance is not listed.
- Section 313 (Specific toxic chemical listings): Substance is not listed.
- TSCA (Toxic Substances Control Act): Substance is not listed.
- Hazardous Air Pollutants: Substance is not listed.
- Proposition 65
- Chemicals known to cause cancer: Substance is not listed.
- Chemicals known to cause reproductive toxicity for females: Substance is not listed.
- Chemicals known to cause reproductive toxicity for males: Substance is not listed.
- Chemicals known to cause developmental toxicity: Substance is not listed.
- Carcinogenic categories
- EPA (Environmental Protection Agency): Substance is not listed.
- TLV (Threshold Limit Value established by ACGIH): Substance is not listed.
- NIOSH-Ca (National Institute for Occupational Safety and Health): Substance is not listed.
- Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Department issuing SDS: Environment protection department.
- Contact: -
- Date of preparation / last revision: 12/02/2020 / -
- Abbreviations and acronyms:
  IMDG: International Maritime Code for Dangerous Goods
  DOT: US Department of Transportation
  IATA: International Air Transport Association
  ACGIH: American Conference of Governmental Industrial Hygienists
  EINECS: European Inventory of Existing Commercial Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  NFPA: National Fire Protection Association (USA)
  HMIS: Hazardous Materials Identification System (USA)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent
Trade name: (S)-Pramipexole (hydrochloride)

- **PBT**: Persistent, Bioaccumulative and Toxic
- **vPvB**: very Persistent and very Bioaccumulative
- **NIOSH**: National Institute for Occupational Safety
- **OSHA**: Occupational Safety & Health
- **TLV**: Threshold Limit Value
- **PEL**: Permissible Exposure Limit
- **REL**: Recommended Exposure Limit
- **Acute Tox. 4**: Acute toxicity – Category 4
- **Skin Sens. 1**: Skin sensitisation – Category 1
- **Aquatic Acute 3**: Hazardous to the aquatic environment - acute aquatic hazard – Category 3
- **Aquatic Chronic 3**: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3