1 Identification

· Product identifier
· Trade name: Donepezil
· Synonym
  2,3-dihydro-5,6-dimethoxy-2\{1-(phenylmethyl)-4-piperidinyl\}methyl\}-1H-inden-1-one
  Aricept®
· Article number: 13245
· Application of the substance For research use only - not for human or veterinary use.
· CAS Number:
  120014-06-4
· EC number:
  601-651-9
· 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
  
  GHS06 Skull and crossbones
  Acute Tox. 2  H300  Fatal if swallowed.

· Label elements
  · GHS label elements
    The substance is classified and labeled according to the Globally Harmonized System (GHS).
  · Hazard pictograms
    
    GHS06

· Signal word Danger
· Hazard statements
  Fatal if swallowed.
· Precautionary statements
  Wash thoroughly after handling.
  Do not eat, drink or smoke when using this product.
  If swallowed: Immediately call a poison center/doctor.

(Contd. on page 2)
Specific treatment (see on this label).
Rinse mouth.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Classification system:**
- **NFPA ratings (scale 0 - 4)**
  - Health = 4
  - Fire = 0
  - Reactivity = 0
- **HMIS-ratings (scale 0 - 4)**
  - HEALTH Health = 3
  - FIRE Fire = 0
  - REACTIVITY 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**
  - 120014-06-4 Donepezil
- **Identification number(s)**
  - EC number: 601-651-9

### 4 First-aid measures

- **Description of first aid measures**
- **General information:**
  - Immediately remove any clothing soiled by the product.
  - In case of irregular breathing or respiratory arrest provide artificial respiration.
- **After inhalation:** 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. Then consult a doctor.
- **After swallowing:** Do not induce vomiting; immediately call for medical help.
- **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:** Do not allow to enter sewers/surface or ground water.
- **Methods and material for containment and cleaning up:**
  Dispose contaminated material as waste according to item 13.
- **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** Thorough dedusting.
  - **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.
- **Storage:**
  - **Requirements to be met by storerooms and receptacles:** No special requirements.
  - **Information about storage in one common storage facility:** Not required.
  - **Further information about storage conditions:** None.
  - **Specific end use(s)** No further relevant information available.

### 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:**
    The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
    The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.
    At this time, the remaining constituent has no known exposure limits.
    At this time, the other constituents have no known exposure limits.
9 Physical and chemical properties

· Information on basic physical and chemical properties
  · General Information
    · Appearance: Crystalline
    · Color: Not determined.
    · Odor: Characteristic
    · Structural Formula: C24H29NO3
    · Molecular Weight: 379.5 g/mol
    · Odor threshold: Not determined.
  · pH-value: Not applicable.

· Change in condition
  · Melting point/Melting range: Undetermined.
  · Boiling point/Boiling range: Undetermined.

· Flash point: Not applicable.

· Flammability (solid, gaseous): Product is not flammable.

· Decomposition temperature: Not determined.

· Auto igniting: Not determined.

· Danger of explosion: Product does not present an explosion hazard.

· Explosion limits:
  · Lower: Not determined.
  · Upper: Not determined.

· Vapor pressure: Not applicable.
Trade name: Donepezil

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Solubility in / Miscibility with Water</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Dynamic: Not applicable. Kinematic: Not applicable.</td>
</tr>
<tr>
<td>SOLUBILITY</td>
<td>~50 mg/ml in chloroform; ~25 mg/ml in acetone</td>
</tr>
<tr>
<td>Other information</td>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>

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

120014-06-4 Donepezil carbon oxides, nitrogen oxides

11 Toxicological information

- RTECS Number: NK8927884
- Information on toxicological effects
- Acute toxicity:

- LD/LC50 values that are relevant for classification:

<table>
<thead>
<tr>
<th>Route of Exposure</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral TDLO</td>
<td>1 ml/kg (wmn)</td>
</tr>
<tr>
<td>TDLO</td>
<td>5 mg/kg (mouse)</td>
</tr>
<tr>
<td>Subcutaneous TDLO</td>
<td>0.984 mg/kg (mouse)</td>
</tr>
<tr>
<td>Intraperitoneal TDLO</td>
<td>3 mg/kg (mouse)</td>
</tr>
<tr>
<td></td>
<td>0.3 mg/kg (rat)</td>
</tr>
</tbody>
</table>

- Primary irritant effect:
- on the skin: No irritant effect.
- on the eye: No irritating effect.
- Sensitization: No sensitizing effects known.
- Additional toxicological information:

- Carcinogenic categories
- IARC (International Agency for Research on Cancer) Substance is not listed.
- NTP (National Toxicology Program) 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.
- Additional ecological information:
  - General notes:
    - Water hazard class 1 (Self-assessment): slightly hazardous for water
    - Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
  - 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: UN2811
- UN proper shipping name
  - DOT: Toxic solids, organic, n.o.s. (Donepezil)
  - IMDG: TOXIC SOLID, ORGANIC, N.O.S. (Donepezil)
  - IATA: Toxic solid, organic, n.o.s. (Donepezil)
- Transport hazard class(es)
  - DOT
  - Class: 6.1 Toxic substances
### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - **Sara**: Substance is not listed.
  - **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.

### GHS label elements

- The substance is classified and labeled according to the Globally Harmonized System (GHS).

### Hazard pictograms

- ![GHS06](image)

### Signal word

**Danger**

### Hazard statements

Fatal if swallowed.

### Precautionary statements

- Wash thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- If swallowed: Immediately call a poison center/doctor.
- Specific treatment (see on this label).
- Rinse mouth.
- Store locked up.
- Dispose of contents/container in accordance with local/regional/national/international regulations.

### Chemical safety assessment:

A Chemical Safety Assessment has not been carried out.

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**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**: 07/01/2020 / -

**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
- 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. 2: Acute toxicity – Category 2