1 Identification

· Product identifier
· Trade name: Benzodihydropyrene natural
· Product number: 1410
· CAS Number: 119-84-6
· EC number: 204-354-9
· Application of the substance / the mixture: Food flavorings

2 Hazard(s) identification

· GHS07

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

· Label elements: Harmful in contact with skin or if inhaled.
· GHS label elements
  Pictograms on label shall be in the shape of a square set at a point and shall include a black hazard symbol on a white background with a red frame sufficiently wide to be clearly visible. The substance is classified and labeled according to the Globally Harmonized System (GHS).
· Hazard pictograms

GHS07

(Continued on page 2)
Trade name: Benzodihydropyrene natural

- **Signal word** Warning
- **Hazard-determining components of labeling:**
  Dihydrocoumarin
- **Hazard statements**
  H302 Harmful if swallowed.
  H317 May cause an allergic skin reaction.
- **Precautionary statements**
  P261 Avoid breathing dust/fume/gas/mist/vapors/spray
  P280 Wear protective gloves.
  P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.
  P330 Rinse mouth.
  P363 Wash contaminated clothing before reuse.
  P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Classification system:**
  - **NFPA ratings (scale 0 - 4)**
    - Health = 1
    - Fire = 1
    - Reactivity = 0
  - **HMIS-ratings (scale 0 - 4)**
    - HEALTH 1 Health = 1
    - FIRE 1 Fire = 1
    - REACTIVITY 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**
  119-84-6 Dihydrocoumarin
- **Identification number(s)**
  - EC number: 204-354-9

### 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 be sure to call for a doctor.
    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.

(Continued on page 3)
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- Information for doctor:
  - Most important symptoms and effects, both acute and delayed
    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:
  - CO2, powder or alcoholresistant foam.
  - CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
  - Use fire fighting measures that suit the environment.
- Special hazards arising from the substance or mixture
  No further relevant information available.
- Advice for firefighters
  - Protective equipment: No special measures required.
- Additional information
  - Cool endangered receptacles with water spray.
  - Collect contaminated fire fighting water separately. It must not enter the sewage system.

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:
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  - Dispose contaminated material as waste according to item 13.
  - Ensure adequate ventilation.
- 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
    - Ensure good ventilation/exhaustion at the workplace.
    - Prevent formation of aerosols.
  - Information about protection against explosions and fires
    No special measures required.
Trade name: Benzodihydropyrene natural

- Conditions for safe storage, including any incompatibilities
- Storage:
- Requirements to be met by storerooms and receptacles:
  - No special requirements.
  - Please refer to product specification for product storage 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: Not required.
- Additional information: The lists that were valid during the creation were used as a basis.
- Exposure controls
- Personal protective equipment:
- General protective and hygienic measures:
  - Keep away from foodstuffs, beverages and feed.
  - Immediately remove all soiled and contaminated clothing.
  - Wash hands before breaks and at the end of work.
- Breathing equipment:
  - In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
- Protection of hands:

Protective gloves

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 should be based 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 determined by the manufacturer of the protective gloves and has to be observed.
- Eye protection: Goggles recommended during refilling.

9 Physical and chemical properties

- Information on basic physical and chemical properties
- General Information
  - Appearance:
    - Form: Liquid
### 48.1.23 Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Color</strong></td>
<td>According to product specification</td>
</tr>
<tr>
<td><strong>Odor</strong></td>
<td>According to product specification</td>
</tr>
<tr>
<td><strong>Odor threshold</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>pH-value</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Change in condition</strong></td>
<td></td>
</tr>
<tr>
<td>Melting point/Melting range</td>
<td>25 °C (77 °F)</td>
</tr>
<tr>
<td>Boiling point/Boiling range</td>
<td>269-271 °C (516.2-519.8 °F)</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>110 °C (230 °F)</td>
</tr>
<tr>
<td><strong>Flammability (solid, gaseous)</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Decomposition temperature</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Auto igniting</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Danger of explosion</strong></td>
<td>Product does not present an explosion hazard.</td>
</tr>
<tr>
<td><strong>Explosion limits</strong></td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Upper</td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Vapor pressure</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Density at 20 °C (68 °F):</strong></td>
<td>1.19 g/cm³ (9.93055 lbs/gal)</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Vapor density</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Solubility in / Miscibility with Water</strong></td>
<td>Not miscible or difficult to mix.</td>
</tr>
<tr>
<td><strong>Partition coefficient (n-octanol/water):</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td></td>
</tr>
<tr>
<td>Dynamic</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Kinematic</td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>VOC content</strong></td>
<td></td>
</tr>
<tr>
<td>Upper</td>
<td>0.00 %</td>
</tr>
<tr>
<td>Lower</td>
<td>0.0 g/l / 0.00 lb/gal</td>
</tr>
<tr>
<td><strong>Other information</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>

### 10 Stability and reactivity

- **Reactivity**: No further relevant information available.
- **Chemical stability**: 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**: No further relevant information available.
- **Hazardous decomposition products**: No dangerous decomposition products known.
### 11 Toxicological information

- **Information on toxicological effects**
  - **Acute toxicity:**
  - **LD/LC50 values that are relevant for classification:**
    - **ATE (Acute Toxicity Estimate)**
      - Oral LD50 1,460 mg/kg (rat)
    - **CAS: 119-84-6 Dihydrocoumarin**
      - Oral LD50 1,460 mg/kg (rat)
      - Dermal LD50 >5,000 mg/kg (rabbit)
  - **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.
  - **Additional ecological information:**
    - **General notes:**
      - Water hazard class 1 (Assessment by list): 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**

<table>
<thead>
<tr>
<th>Item</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN-Number</td>
<td>Not Regulated</td>
</tr>
<tr>
<td>DOT, ADR, ADN, IMDG, IATA</td>
<td></td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>Not Regulated</td>
</tr>
<tr>
<td>DOT, ADR, ADN, IMDG, IATA</td>
<td></td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>Not Regulated</td>
</tr>
<tr>
<td>DOT, ADR, ADN, IMDG, IATA</td>
<td></td>
</tr>
<tr>
<td>Class</td>
<td>Not Regulated</td>
</tr>
<tr>
<td>Packing group</td>
<td>Not Regulated</td>
</tr>
<tr>
<td>DOT, ADR, IMDG, IATA</td>
<td></td>
</tr>
<tr>
<td>Environmental hazards:</td>
<td></td>
</tr>
<tr>
<td>Marine pollutant:</td>
<td>No</td>
</tr>
<tr>
<td>Special precautions for user</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Transport/Additional information:</td>
<td>Not dangerous according to the above specifications.</td>
</tr>
<tr>
<td>UN &quot;Model Regulation&quot;:</td>
<td>Not Regulated</td>
</tr>
</tbody>
</table>

**15 Regulatory information**

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **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 listed.

  - **Proposition 65**

  - **Chemicals known to cause cancer:** Substance is not listed.
Trade name: Benzodihydropyrene natural

- **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**
Pictograms on label shall be in the shape of a square set at a point and shall include a black hazard symbol on a white background with a red frame sufficiently wide to be clearly visible.
The substance is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**

  ![GHS07]

- **Signal word** Warning

- **Hazard-determining components of labeling:**
  Dihydrocoumarin

- **Hazard statements**
  H302 Harmful if swallowed.
  H317 May cause an allergic skin reaction.

- **Precautionary statements**
  P261 Avoid breathing dust/fume/gas/mist/vapors/spray
  P280 Wear protective gloves.
  P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.
  P330 Rinse mouth.
  P363 Wash contaminated clothing before reuse.
  P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **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:** Product Safety Department
Trade name: Benzodihydropyrrone natural

- Contact:
  Product Safety Department
  productsafety@adv-bio.com

- Date of preparation / last revision 02/11/2019 / -

- Abbreviations and acronyms:
  ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  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)
  VOC: Volatile Organic Compounds (USA, EU)
  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. 4: Acute toxicity – Category 4
  Skin Sens. 1: Skin sensitisation – Category 1