1 Identification

- Product identifier
  - Trade name: Flubendiamide
  - Part number: PST-3460, PST-3460-10MG
  - CAS Number: 272451-65-7
  - Application of the substance / the mixture: Reagents and Standards for Analytical Chemical Laboratory Use

- Details of the supplier of the safety data sheet
  - Manufacturer/Supplier: Agilent Technologies, Inc.
    5301 Stevens Creek Blvd.
    Santa Clara, CA  95051  USA
  - Information department:
    - Telephone: 800-227-9770
    - e-mail: pdl-msds_author@agilent.com
  - Emergency telephone number: CHEMTREC®: 1-800-424-9300

2 Hazard identification

- Classification of the substance or mixture
  - The substance is not classified, according to the Globally Harmonized System (GHS).

- Label elements
  - GHS label elements: Void
  - Hazard pictograms: Void
  - Signal word: Void
  - Hazard statements: Void
  - Classification system:
    - NFPA ratings (scale 0 - 4)
      Health = 1
      Fire = 0
      Reactivity = 0
    - HMIS-ratings (scale 0 - 4)
      HEALTH 1  Health = 1
      FIRE 0  Fire = 0
      REACTIVITY 0  Reactivity = 0

3 Composition/Information on ingredients

- Chemical characterization: Substances
  - CAS No. Description
    272451-65-7 flubendiamide

4 First aid measures

- Description of first aid measures
  - General information: No special measures required.

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Trade name: Flubendiamide

- After inhalation: Supply fresh air; consult doctor in case of complaints.
- After skin contact: Generally the product does not irritate the skin.
- After eye contact: Rinse opened eye for several minutes under running water.
- After swallowing: If symptoms persist consult doctor.
- 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 Firefighting measures

- Extinguishing media
  - Suitable extinguishing agents: 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.

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: 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.

7 Handling and storage

- Handling:
  - Precautions for safe handling: No special measures required.
  - Information about protection against explosions and fires: No special measures required.
- Conditions for safe storage, including any incompatibilities
- 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: Not required.
  - Additional information: The lists that were valid during the creation were used as basis.
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**Exposure controls**

- **Personal protective equipment:**
  - **General protective and hygienic measures:**
    The usual precautionary measures for handling chemicals should be followed.
  - **Breathing equipment:**
    When used as intended with Agilent instruments, the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not needed.
    Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved device/equipment with appropriate organic or acid gas cartridge.
  - **Protection of hands:**
    Although not recommended for constant contact with the chemicals or for clean-up, nitrile gloves 11-13 mil thickness are recommended for normal use. The breakthrough time is 1 hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15 mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.

- **Material of gloves**
  For normal use: nitrile rubber, 11-13 mil thickness
  For direct contact with the chemical: butyl rubber, 12-15 mil thickness
  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**
  For normal use: nitrile rubber: 1 hour
  For direct contact with the chemical: butyl rubber: >4 hours

- **Eye protection:** Not required.

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**Physical and chemical properties**

<table>
<thead>
<tr>
<th>Information on basic physical and chemical properties</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Information</strong></td>
</tr>
<tr>
<td><strong>Appearance:</strong></td>
</tr>
<tr>
<td>Form: Solid</td>
</tr>
<tr>
<td>Color: Not determined.</td>
</tr>
<tr>
<td>Odor: Characteristic</td>
</tr>
<tr>
<td>Odor threshold: Not determined.</td>
</tr>
<tr>
<td><strong>pH-value:</strong> Not applicable.</td>
</tr>
<tr>
<td><strong>Change in condition</strong></td>
</tr>
<tr>
<td>Melting point/Melting range: 217-221 °C</td>
</tr>
<tr>
<td>Boiling point/Boiling range: Undetermined.</td>
</tr>
<tr>
<td><strong>Flash point:</strong> Not applicable.</td>
</tr>
<tr>
<td><strong>Flammability (solid, gaseous):</strong> Product is not flammable.</td>
</tr>
<tr>
<td><strong>Decomposition temperature:</strong> Not determined.</td>
</tr>
<tr>
<td><strong>Auto igniting:</strong> Not determined.</td>
</tr>
<tr>
<td><strong>Danger of explosion:</strong> Product does not present an explosion hazard.</td>
</tr>
<tr>
<td><strong>Explosion limits:</strong> Lower: Not determined.</td>
</tr>
</tbody>
</table>

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- Upper: Not determined.
- Vapor pressure: Not applicable.
- Density: Not determined.
- Relative density: Not determined.
- Vapor density: Not applicable.
- Evaporation rate: Not applicable.
- Solubility in / Miscibility with Water: Insoluble.
- Partition coefficient (n-octanol/water): Not determined.
- Viscosity:
  - Dynamic: Not applicable.
  - Kinematic: Not applicable.
- Solids content: 100.0 %
- Other information: No further relevant information available.

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: 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 | Dermal |
      |-------------------------------|------|--------|
      | LD50                          | >2,000 mg/kg (rat) | >2,000 mg/kg (rat) |
- 272451-65-7 flubendiamide
  - Oral | LD50 | >2,000 mg/kg (rat) |
  - Dermal | LD50 | >2,000 mg/kg (rat) |
- Primary irritant effect:
  - on the skin: No irritant effect.
  - on the eye: No irritating effect.
- Sensitization: No sensitizing effects known.
- Additional toxicological information:
  When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
Trade name: Flubendiamide

The substance is not subject to classification.

- 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 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.
- 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: Smaller quantities can be disposed of with household waste.
- Uncleaned packagings:
  - Recommendation: Disposal must be made according to official regulations.

14 Transport information

- UN-Number
- DOT: not regulated
- TDG, IMDG, IATA: UN3077
- UN proper shipping name
- DOT: not regulated
  - TDG: 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (flubendiamide)
  - IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (flubendiamide), MARINE POLLUTANT
  - IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (flubendiamide)
**Trade name:** Flubendiamide

### Transport hazard class(es)
- DOT
- Class: not regulated

### TDG, IMDG, IATA
- **Class:** 9
- **Label:** Miscellaneous dangerous substances and articles

### Packing group
- DOT
- Class: not regulated

### Environmental hazards:
- Product contains environmentally hazardous substances: flubendiamide
- **Marine pollutant:** Symbol (fish and tree)
- **Special marking (TDG):** Symbol (fish and tree)
- **Special marking (IATA):** Symbol (fish and tree)

### Special precautions for user
- **Warning:** Miscellaneous dangerous substances and articles
- **Danger code (Kemler):** 90
- **EMS Number:** F-A,S-F
- **Stowage Category:** A
- **Stowage Code:** SW23 When transported in BK3 bulk container, see 7.6.2.12 and 7.7.3.9.

### Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
- Not applicable.

### Transport/Additional information:

#### TDG
- **Excepted quantities (EQ):** Code: E1
  - Maximum net quantity per inner packaging: 30 g
  - Maximum net quantity per outer packaging: 1000 g

#### IMDG
- **Limited quantities (LQ):** 5 kg
- **Excepted quantities (EQ):** Code: E1
  - Maximum net quantity per inner packaging: 30 g
  - Maximum net quantity per outer packaging: 1000 g

### UN "Model Regulation"
- **UN 3077 ENVIROMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (FLUBENDIAMIDE), 9, III**
# Safety Data Sheet
according to HPR, Schedule 1

Printing date 03/26/2019  
Reviewed on 03/26/2019

**Trade name:** Flubendiamide

## 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 not listed.
- Canadian substance listings:
  - **Canadian Domestic Substances List (DSL)** Substance is not listed.
  - **Canadian Ingredient Disclosure list (limit 0.1%)** Substance is not listed.
  - **Canadian Ingredient Disclosure list (limit 1%)** Substance is not listed.
- Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

## 16 Other information

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

- **Date of the latest revision of the safety data sheet** 03/26/2019
- **Abbreviations and acronyms:**
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - 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