

## Safety Data Sheet acc. to OSHA HCS

Date of issue: 10/20/2025

Revision date 10/20/2025

### 1 Identification

- **Product identifier**
- **Trade name: Synthetic Opioid Analytical Standards Panel 1 Plate1**
- **Other means of identification**
- **Application of the substance / the mixture**  
This product is for research use - Not for human or veterinary diagnostic or therapeutic 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**



Acute toxicity - oral 4      H302 Harmful if swallowed.  
Acute toxicity - dermal 4      H312 Harmful in contact with skin.  
Acute toxicity - inhalation 4      H332 Harmful if inhaled.

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



- **Signal word** Warning
- **Hazard statements**  
H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.
- **Precautionary statements**  
P261      Avoid breathing dust/fume/gas/mist/vapors/spray  
P264      Wash thoroughly after handling.

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- P270 Do not eat, drink or smoke when using this product.  
 P271 Use only outdoors or in a well-ventilated area.  
 P280 Wear protective gloves / protective clothing.  
 P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.  
 P302+P352 If on skin: Wash with plenty of water.  
 P304+P340 If inhaled: Remove person to fresh air and keep comfortable for breathing.  
 P321 Specific treatment (see on this label).  
 P330 Rinse mouth.  
 P362+P364 Take off contaminated clothing and wash it before reuse.  
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Information pertaining to particular dangers for man and environment:**
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 0  
 Fire = 0  
 Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



HEALTH 0 Health = 0  
 FIRE 0 Fire = 0  
 REACTIVITY 0 Reactivity = 0

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Classification according to (d)(1)(ii) of § 1910.1200**

The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.

- **Hazards not otherwise classified**

There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

## 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.
- **Dangerous components:** None

- **Other ingredients**

CAS: 437-38-7 RTECS: UE5550000	Fentanyl	0.01%
CAS: 1443-43-2	β-methyl Fentanyl (hydrochloride)	0.01%
CAS: 1443-44-3	α-methyl Fentanyl (hydrochloride)	0.01%
CAS: 1443-52-3	Butyryl fentanyl (hydrochloride)	0.01%
CAS: 1443-53-4	ortho-Methylfentanyl (hydrochloride)	0.01%
CAS: 1465-20-9	Fentanyl Carbamate	0.01%
CAS: 1465-22-1	meta-Methylfentanyl (hydrochloride)	0.01%
CAS: 1609-66-1	Norfentanyl	0.01%

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		(Contd. from page 2)
CAS: 1807-12-1	para-Methylfentanyl (hydrochloride)	0.01%
CAS: 21409-26-7	4-ANPP	0.01%
CAS: 22352-82-5	Acetyl norfentanyl (hydrochloride)	0.01%
CAS: 23609-41-8	para-Methoxyfentanyl (hydrochloride)	0.01%
CAS: 69049-06-5 RTECS: TX1452500	Alfentanil (hydrochloride)	0.01%
CAS: 78995-09-2	(±)-trans-3-methyl Fentanyl (hydrochloride)	0.01%
CAS: 78995-18-3	(±)-cis-3-methyl Fentanyl (hydrochloride)	0.01%
CAS: 79279-02-0	β <sup>1</sup> -Phenyl fentanyl	0.01%
CAS: 88641-20-7	(±)-cis-3-methyl Butyryl fentanyl (hydrochloride)	0.01%
CAS: 101343-50-4	ortho-methoxy Furanyl fentanyl	0.01%
CAS: 101345-75-9	para-chloro Methoxyacetyl fentanyl (hydrochloride)	0.01%
CAS: 101365-54-2	Methoxyacetyl fentanyl (hydrochloride)	0.01%
CAS: 104818-37-3	para-Fluoroacetyl fentanyl (hydrochloride)	0.01%
CAS: 112964-97-3	Ocfentanil (hydrochloride)	0.01%
CAS: 117332-90-8	Isobutyryl fentanyl (hydrochloride)	0.01%
CAS: 117332-91-9	Valeryl fentanyl (hydrochloride)	0.01%
CAS: 117332-92-0	para-Fluorofentanyl (hydrochloride)	0.01%
CAS: 117332-94-2	α-methyl Thiofentanyl (hydrochloride)	0.01%
CAS: 117994-27-1	para-Chlorofentanyl (hydrochloride)	0.01%
CAS: 131690-45-4	(±)-cis-3-methyl Thiofentanyl (hydrochloride)	0.01%
CAS: 760930-59-4	Crotonyl fentanyl	0.01%
CAS: 1071703-95-1	4'-methyl Acetyl fentanyl (hydrochloride)	0.01%
CAS: 1071703-97-3	4'-methyl Fentanyl (hydrochloride)	0.01%
CAS: 2306822-12-6	α-methyl Acetyl fentanyl (hydrochloride)	0.01%
CAS: 2306822-94-4	Tetrahydrofuran fentanyl (hydrochloride)	0.01%
CAS: 2306823-01-6	Benzodioxole fentanyl	0.01%
CAS: 2306823-23-2	para-Fluorobutyryl fentanyl (hydrochloride)	0.01%
CAS: 2306823-27-6	para-fluoro Acrylfentanyl	0.01%
CAS: 2306823-39-0	Thiophene fentanyl (hydrochloride)	0.01%
CAS: 2306823-44-7	ortho-Fluorobutyryl fentanyl (hydrochloride)	0.01%
CAS: 2306823-47-0	Furanyl fentanyl 3-furancarboxamide isomer (hydrochloride)	0.01%
CAS: 2306823-58-3	para-chloro Acrylfentanyl (hydrochloride)	0.01%
CAS: 2306823-76-5	para-fluoro Methoxyacetyl fentanyl (hydrochloride)	0.01%
CAS: 2306824-94-0	Cyclopentyl fentanyl (hydrochloride)	0.01%
CAS: 2306825-44-3	Cyclopropyl fentanyl (hydrochloride)	0.01%
CAS: 2306825-45-4	para-methoxy-Butyryl fentanyl (hydrochloride)	0.01%
CAS: 2306825-53-4	para-fluoro Cyclopropyl fentanyl (hydrochloride)	0.01%
CAS: 2306825-91-0	α-methyl Butyryl fentanyl (hydrochloride)	0.01%
CAS: 2306827-13-2	Tetrahydrofuran fentanyl 3-tetrahydrofurancarboxamide (hydrochloride)	0.01%
CAS: 2306827-52-9	meta-Fluorobutyryl fentanyl (hydrochloride)	0.01%
CAS: 2306827-56-3	Cyclobutyl fentanyl (hydrochloride)	0.01%
CAS: 2306827-85-8	para-Chloroisobutyryl fentanyl (hydrochloride)	0.01%
CAS: 2306827-89-2	meta-Fluoroisobutyryl fentanyl (hydrochloride)	0.01%

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CAS: 2309383-05-7	meta-Fluorofentanyl (hydrochloride)	0.01%
CAS: 2309383-07-9	ortho-methyl Furanyl fentanyl	0.01%
CAS: 2309383-10-4	ortho-fluoro Acrylfentanyl (hydrochloride)	0.01%
CAS: 2309383-16-0	Phenyl fentanyl (hydrochloride)	0.01%
CAS: 2320475-89-4	$\beta$ -Hydroxythiofentanyl (hydrochloride)	0.01%
CAS: 2361296-62-8	Methacrylfentanyl	0.01%
CAS: 2583550-98-3	Isovaleryl fentanyl (hydrochloride)	0.01%
CAS: 2701720-35-4	Butyryl norfentanyl (hydrochloride)	0.01%
CAS: 2703474-67-1	N-methyl Cyclopropyl norfentanyl (hydrochloride)	0.01%
CAS: 2748290-00-6	para-chloro Cyclobutyl fentanyl (hydrochloride)	0.01%
CAS: 2748409-42-7	Pivaloyl fentanyl (hydrochloride)	0.01%
CAS: 2748409-55-2	para-methyl Acrylfentanyl (hydrochloride)	0.01%
CAS: 2748409-58-5	ortho-methyl Acetyl fentanyl (hydrochloride)	0.01%
CAS: 2748485-23-4	ortho-methyl Methoxyacetyl fentanyl (hydrochloride)	0.01%
CAS: 2748496-88-8	para-methyl Acetyl fentanyl (hydrochloride)	0.01%
CAS: 2748591-21-9	ortho-Fluoroisobutyryl fentanyl (hydrochloride)	0.01%
CAS: 2748591-35-5	$\alpha'$ -methyl Butyryl fentanyl (hydrochloride)	0.01%
CAS: 2748591-61-7	para-chloro Cyclopropyl fentanyl (hydrochloride)	0.01%
CAS: 2748623-68-7	para-methyl Isobutyryl fentanyl (hydrochloride)	0.01%
CAS: 2749299-21-4	ortho-methyl Acrylfentanyl (hydrochloride)	0.01%
CAS: 2749433-11-0	para-fluoro Furanyl fentanyl 3-furancarboxamide (hydrochloride)	0.01%
CAS: 2749433-21-2	para-methyl Tetrahydrofuran fentanyl (hydrochloride)	0.01%
CAS: 2749504-78-5	Benzyl Carfentanil (hydrochloride)	0.01%
CAS: 2749618-58-2	Phenylacetyl fentanyl (hydrochloride)	0.01%
CAS: 2749619-19-8	ortho-fluoro Furanyl fentanyl (hydrochloride)	0.01%
CAS: 2749910-43-6	para-methyl Cyclopropyl fentanyl (hydrochloride)	0.01%
CAS: 2749910-65-2	ortho-methyl Cyclopropyl fentanyl (hydrochloride)	0.01%
CAS: 2749910-75-4	$\beta$ -methyl Acetyl fentanyl (hydrochloride)	0.01%
	para-fluoro Crotonyl fentanyl	0.01%

## 4 First-aid measures

- **Description of first aid measures**

- **General information:**

Immediately remove any clothing soiled by the product.

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. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

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

- **After skin contact:** Immediately rinse with water.

- **After eye contact:** Rinse opened eye for several minutes under running water.

- **After swallowing:** Immediately call a doctor.

- **Most important symptoms and effects, both acute and delayed**

No further relevant information available.

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- **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:** Mouth respiratory protective device.

### \* 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 section 13.  
Ensure adequate ventilation.
- **Protective Action Criteria for Chemicals**

· **PAC-1:**

None of the ingredients is listed.

· **PAC-2:**

None of the ingredients is listed.

· **PAC-3:**

None of the ingredients is listed.

- **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

- **Precautions for safe handling**  
Thorough dedusting.  
Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:** Store in accordance with information listed on the product insert.
- **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:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

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## 8 Exposure controls/personal protection

- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Appropriate engineering controls** No further data; see section 7.
- **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.  
Avoid contact with the eyes and skin.
- **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 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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- **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**
- **Physical state** Solid
- **Color:** According to product specification
- **Odor:** Characteristic
- **Storage Buffer**
- **Odor threshold:** Not determined.
- **Formulation**
- **Melting point/Melting range:** Undetermined.
- **Boiling point/Boiling range:** Undetermined.
- **Flammability:** Not determined.

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· <b>Explosion limits:</b>	
· <b>Lower:</b>	Not determined.
· <b>Upper:</b>	Not determined.
· <b>Flash point:</b>	Not applicable.
· <b>Decomposition temperature:</b>	Not determined.
· <b>pH-value:</b>	Not applicable.
· <b>Viscosity:</b>	
· <b>Kinematic:</b>	Not applicable.
· <b>SOLUBILITY</b>	
· <b>Dynamic:</b>	Not applicable.
· <b>Solubility in / Miscibility with</b>	
· <b>Water:</b>	Insoluble.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Vapor pressure:</b>	Not applicable.
· <b>Vapor pressure:</b>	
· <b>Density:</b>	Not determined.
· <b>Relative density</b>	Not determined.
· <b>Vapor density</b>	Not applicable.
· <b>Particle characteristics</b>	Not determined.

· <b>Other information</b>	
· <b>Appearance:</b>	
· <b>Form:</b>	Solid
· <b>Important information on protection of health and environment, and on safety.</b>	
· <b>Ignition temperature:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
· <b>Solvent content:</b>	
· <b>VOC content:</b>	0.00 %
· <b>Solids content:</b>	100.0 %
· <b>Change in condition</b>	
· <b>Evaporation rate</b>	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:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.

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- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:** Harmful
- **Interactive effects** No interactive effects between components are known.
- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

- **Alternative sources for toxicological information**

No non-standard sources for toxicological information where used.

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects**
- **Additional ecological information:**
- **General notes:**  
Water hazard class 3 (Self-assessment): extremely hazardous for water  
Do not allow product to reach ground water, water course or sewage system, even in small quantities.  
Danger to drinking water if even extremely small quantities leak into the ground.

## 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

- |                                  |               |
|----------------------------------|---------------|
| · <b>UN-Number</b>               |               |
| · <b>DOT, IMDG, IATA</b>         | not regulated |
| · <b>UN proper shipping name</b> |               |
| · <b>DOT, IMDG, IATA</b>         | not regulated |

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- |  |                 |
|--|-----------------|
| <b>· Transport hazard class(es)</b>  |                 |
| <b>· DOT, ADN, IMDG, IATA</b>  |                 |
| <b>· Class</b>   | not regulated   |
| <b>· Packing group</b>   |                 |
| <b>· DOT, IMDG, IATA</b>   | not regulated   |
| <b>· Environmental hazards:</b>  | Not applicable. |
| <b>· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable. |
| <b>· Special precautions for user</b>  | Not applicable. |
| <b>· UN "Model Regulation":</b>  | not regulated   |

## 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**  
No further relevant information available.
- **Sara**

<b>· Section 355 (extremely hazardous substances):</b>
--

None of the ingredients is listed.
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<b>· Section 313 (Specific toxic chemical listings):</b>
--

None of the ingredients is listed.
------------------------------------

<b>· TSCA (Toxic Substances Control Act):</b>
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None of the ingredients is listed.
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<b>· Hazardous Air Pollutants</b>
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None of the ingredients is listed.
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<b>· Chemicals known to cause cancer:</b>
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None of the ingredients is listed.
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<b>· Chemicals known to cause reproductive toxicity for females:</b>
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None of the ingredients is listed.
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<b>· Chemicals known to cause reproductive toxicity for males:</b>
--

None of the ingredients is listed.
------------------------------------

<b>· Chemicals known to cause developmental toxicity:</b>
---

None of the ingredients is listed.
------------------------------------

- **Carcinogenic categories**

<b>· EPA (Environmental Protection Agency)</b>
--

None of the ingredients is listed.
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<b>· TLV (Threshold Limit Value)</b>
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None of the ingredients is listed.
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<b>· NIOSH-Ca (National Institute for Occupational Safety and Health)</b>
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None of the ingredients is listed.
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- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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## 16 Other information

All chemicals may pose unknown hazards and should be used with caution. This SDS applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. Cayman Chemical Company assumes no responsibility for incidental or consequential damages, including lost profits, arising from the use of these data. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Cayman Chemical Company assumes no responsibility for the completeness or accuracy of the information contained herein.

- **Department issuing SDS:** Environment protection department.
- **Contact:** -
- **Date of previous version** 10/20/2025
- **Date of preparation** 10/20/2025
- **Abbreviations and acronyms:**
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified 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)
  - 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 toxicity - oral 4: Acute toxicity – Category 4
- **\* Data compared to the previous version altered.**

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### 1 Identification

- **Product identifier**
- **Trade name: Synthetic Opioid Analytical Standards Panel 1 Plate 2**
- **Other means of identification**
- **Application of the substance / the mixture**  
This product is for research use - Not for human or veterinary diagnostic or therapeutic 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**



Acute toxicity - oral 4      H302 Harmful if swallowed.  
Acute toxicity - dermal 4      H312 Harmful in contact with skin.  
Acute toxicity - inhalation 4      H332 Harmful if inhaled.

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



- **Signal word** Warning
- **Hazard statements**  
H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.
- **Precautionary statements**  
P261      Avoid breathing dust/fume/gas/mist/vapors/spray  
P264      Wash thoroughly after handling.

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### Trade name: Synthetic Opioid Analytical Standards Panel 1 Plate 2

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- P270 Do not eat, drink or smoke when using this product.  
 P271 Use only outdoors or in a well-ventilated area.  
 P280 Wear protective gloves / protective clothing.  
 P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.  
 P302+P352 If on skin: Wash with plenty of water.  
 P304+P340 If inhaled: Remove person to fresh air and keep comfortable for breathing.  
 P321 Specific treatment (see on this label).  
 P330 Rinse mouth.  
 P362+P364 Take off contaminated clothing and wash it before reuse.  
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Information pertaining to particular dangers for man and environment:**
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**



- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Classification according to (d)(1)(ii) of § 1910.1200**  
 The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.
- **Hazards not otherwise classified**  
 There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

### 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.
- **Dangerous components:** None

- **Other ingredients**

CAS: 1443-49-8	Furanylethyl fentanyl (hydrochloride)	0.01%
CAS: 1443-50-1	N,N-Dimethylamido-despropionyl fentanyl	0.01%
CAS: 1473-95-6	β-hydroxy Fentanyl (hydrochloride)	0.01%
CAS: 5156-58-1	Benzyl fentanyl (hydrochloride)	0.01%
CAS: 55154-30-8 RTECS: CV3459800	AH 7921	0.01%
CAS: 56030-54-7 RTECS: TX1474020	Sufentanil	0.01%
CAS: 57314-55-3 RTECS: TL3486500	MT-45 (hydrochloride)	0.01%

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### Trade name: Synthetic Opioid Analytical Standards Panel 1 Plate 2

		(Contd. from page 2)
CAS: 58399-46-5	N-(3-ethylindole) Norfentanyl	0.01%
CAS: 61085-87-8	Norcarfentanil (hydrochloride)	0.01%
CAS: 61086-18-8	Norsufentanil	0.01%
CAS: 67579-76-4	U-49900	0.01%
CAS: 79278-88-9	Thiofentanyl (hydrochloride)	0.01%
CAS: 79279-03-1	Acrylfentanyl (hydrochloride)	0.01%
CAS: 82657-23-6	U-47700	0.01%
CAS: 101365-55-3	Ethoxyacetyl fentanyl (hydrochloride)	0.01%
CAS: 101365-56-4	Furanyl fentanyl (hydrochloride)	0.01%
CAS: 101365-58-6	$\alpha'$ -methoxy Fentanyl (hydrochloride)	0.01%
CAS: 117332-89-5	Acetyl fentanyl (hydrochloride)	0.01%
CAS: 117332-93-1	Thienyl fentanyl (hydrochloride)	0.01%
CAS: 132539-07-2 RTECS: TN2413670	Remifentanil (hydrochloride)	0.01%
CAS: 2306823-72-1	para-Chlorobutyryl fentanyl (hydrochloride)	0.01%
CAS: 2306823-77-6	Benzyl Acrylfentanyl (hydrochloride)	0.01%
CAS: 2306825-26-1	ortho-Fluorofentanyl (hydrochloride)	0.01%
CAS: 2306825-32-9	meta-fluoro Methoxyacetyl fentanyl (hydrochloride)	0.01%
CAS: 2306827-94-9	para-methyl Furanyl fentanyl (hydrochloride)	0.01%
CAS: 2309383-06-8	FIBF (hydrochloride)	0.01%
CAS: 2309383-12-6	2,2,3,3-tetramethyl-Cyclopropyl fentanyl (hydrochloride)	0.01%
CAS: 2309383-14-8	Cyclohexyl fentanyl (hydrochloride)	0.01%
CAS: 2583550-67-6	Hexanoyl fentanyl (hydrochloride)	0.01%
CAS: 2630378-28-6	Seneciroyl fentanyl	0.01%
CAS: 2711605-09-1	N-benzyl Furanyl norfentanyl (hydrochloride)	0.01%
CAS: 2748289-90-7	para-methoxy Methoxyacetyl fentanyl (hydrochloride)	0.01%
CAS: 2748301-34-8	4-Phenyl fentanyl (hydrochloride)	0.01%
CAS: 2748301-54-2	meta-methyl Cyclopropyl fentanyl (hydrochloride)	0.01%
CAS: 2748304-70-1	meta-methyl Methoxyacetyl fentanyl (hydrochloride)	0.01%
CAS: 2748319-16-4	Isopropyl U-47700	0.01%
CAS: 2748343-79-3	Furanyl norfentanyl (hydrochloride)	0.01%
CAS: 2748343-88-4	2'-fluoro ortho-Fluorofentanyl (hydrochloride)	0.01%
CAS: 2748409-27-8	para-methyl Methoxyacetyl fentanyl (hydrochloride)	0.01%
CAS: 2748409-34-7	meta-methyl Furanyl fentanyl (hydrochloride)	0.01%
CAS: 2748409-46-1	para-methoxy Acrylfentanyl (hydrochloride)	0.01%
CAS: 2748409-68-7	para-methyl Cyclopentyl fentanyl (hydrochloride)	0.01%
CAS: 2748485-19-8	para-fluoro Tetrahydrofuran fentanyl (hydrochloride)	0.01%
CAS: 2748485-30-3	para-chloro Cyclopentyl fentanyl (hydrochloride)	0.01%
CAS: 2748485-33-6	$\beta$ -Hydroxythioacetylfentanyl	0.01%
CAS: 2748496-77-5	para-chloro Furanyl fentanyl	0.01%
CAS: 2748591-41-3	para-methoxy Furanyl fentanyl (hydrochloride)	0.01%
CAS: 2748591-50-4	ortho-isopropyl Furanyl fentanyl	0.01%
CAS: 2748592-46-1	2,3-seco-Fentanyl (hydrochloride)	0.01%
CAS: 2748592-60-9	2-fluoro MT-45 (hydrochloride)	0.01%

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CAS: 2748623-32-5	para-fluoro Furanyl fentanyl (hydrochloride)	0.01%
CAS: 2748623-40-5	(±)-trans-3-methyl Thiofentanyl (hydrochloride)	0.01%
CAS: 2748623-59-6	N-methyl Norcarfentanil (hydrochloride)	0.01%
CAS: 2749298-67-5	U-48800 (hydrochloride)	0.01%
CAS: 2749298-75-5	Cyclopentenyl fentanyl (hydrochloride)	0.01%
CAS: 2749299-63-4	Phenoxyacetyl fentanyl (hydrochloride)	0.01%
CAS: 2749326-85-8	Heptanoyl fentanyl (hydrochloride)	0.01%
CAS: 2749394-67-8	para-methoxy Acetyl fentanyl (hydrochloride)	0.01%
CAS: 2749394-71-4	para-fluoro Cyclopentyl fentanyl (hydrochloride)	0.01%
CAS: 2749433-35-8	ortho-methoxy Butyryl fentanyl (hydrochloride)	0.01%
CAS: 2749618-68-4	para-fluoro Valeryl fentanyl (hydrochloride)	0.01%
	para-methyl Butyryl fentanyl (hydrochloride)	0.01%
	para-chloro Valeryl fentanyl (hydrochloride)	0.01%
	para-methoxy Valeryl fentanyl (hydrochloride)	0.01%
	para-methoxy Tetrahydrofuran fentanyl (hydrochloride)	0.01%
	ortho-methyl Phenyl fentanyl (hydrochloride)	0.01%
	4'-fluoro, para-fluoro (±)-trans-3-methyl Fentanyl (hydrochloride)	0.01%
	4'-Fluorofentanyl (hydrochloride)	0.01%
	Fentanyl Methyl Carbamate	0.01%
	Tetrahydrothiophene fentanyl	0.01%

### 4 First-aid measures

- **Description of first aid measures**

- **General information:**

Immediately remove any clothing soiled by the product.

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. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

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

- **After skin contact:** Immediately rinse with water.

- **After eye contact:** Rinse opened eye for several minutes under running water.

- **After swallowing:** Immediately call a 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:**

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.

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- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

### 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 section 13.  
Ensure adequate ventilation.
- **Protective Action Criteria for Chemicals**

- **PAC-1:**

None of the ingredients is listed.

- **PAC-2:**

None of the ingredients is listed.

- **PAC-3:**

None of the ingredients is listed.

- **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

- **Precautions for safe handling**  
Thorough dedusting.  
Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:** Store in accordance with information listed on the product insert.
- **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:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

### 8 Exposure controls/personal protection

- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Appropriate engineering controls** No further data; see section 7.
- **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.

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Avoid contact with the eyes and skin.

- **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 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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **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**

- **Physical state**

Solid

- **Color:**

According to product specification

- **Odor:**

Characteristic

- **Storage Buffer**

- **Odor threshold:**

Not determined.

- **Formulation**

- **Melting point/Melting range:**

Undetermined.

- **Boiling point/Boiling range:**

Undetermined.

- **Flammability:**

Not determined.

- **Explosion limits:**

- **Lower:**

Not determined.

- **Upper:**

Not determined.

- **Flash point:**

Not applicable.

- **Decomposition temperature:**

Not determined.

- **pH-value:**

Not applicable.

- **Viscosity:**

- **Kinematic:**

Not applicable.

- **SOLUBILITY**

- **Dynamic:**

Not applicable.

- **Solubility in / Miscibility with**

- **Water:**

Insoluble.

- **Partition coefficient (n-octanol/water):**

Not determined.

- **Vapor pressure:**

Not applicable.

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- |  |   |
|--|---|
| · <b>Vapor pressure:</b>   |   |
| · <b>Density:</b>  | Not determined.                               |
| · <b>Relative density</b>  | Not determined.                               |
| · <b>Vapor density</b>   | Not applicable.                               |
| · <b>Particle characteristics</b>  | Not determined.                               |
|  |   |
| · <b>Other information</b>   |   |
| · <b>Appearance:</b>   |   |
| · <b>Form:</b>   | Solid   |
| · <b>Important information on protection of health and environment, and on safety.</b> |   |
| · <b>Ignition temperature:</b>   | Product is not selfigniting.                  |
| · <b>Danger of explosion:</b>  | Product does not present an explosion hazard. |
| · <b>Solvent content:</b>  |   |
| · <b>VOC content:</b>  | 0.00 %  |
| · <b>Solids content:</b>   | 100.0 %                                       |
| · <b>Change in condition</b>   |   |
| · <b>Evaporation rate</b>  | 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:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:** Harmful
- **Interactive effects** No interactive effects between components are known.
- **Carcinogenic categories**

· <b>IARC (International Agency for Research on Cancer)</b>
---

None of the ingredients is listed.
------------------------------------

· <b>NTP (National Toxicology Program)</b>
--

None of the ingredients is listed.
------------------------------------

· <b>OSHA-Ca (Occupational Safety &amp; Health Administration)</b>
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None of the ingredients is listed.
------------------------------------

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- **Alternative sources for toxicological information**  
No non-standard sources for toxicological information where used.

### 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects**
- **Additional ecological information:**
- **General notes:**  
Water hazard class 3 (Self-assessment): extremely hazardous for water  
Do not allow product to reach ground water, water course or sewage system, even in small quantities.  
Danger to drinking water if even extremely small quantities leak into the ground.

### 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

- |  |                 |
|--|-----------------|
| · <b>UN-Number</b>   |                 |
| · <b>DOT, IMDG, IATA</b>   | not regulated   |
| · <b>UN proper shipping name</b>   |                 |
| · <b>DOT, IMDG, IATA</b>   | not regulated   |
| · <b>Transport hazard class(es)</b>  |                 |
| · <b>DOT, ADN, IMDG, IATA</b>  |                 |
| · <b>Class</b>   | not regulated   |
| · <b>Packing group</b>   |                 |
| · <b>DOT, IMDG, IATA</b>   | not regulated   |
| · <b>Environmental hazards:</b>  | Not applicable. |
| · <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable. |
| · <b>Special precautions for user</b>  | Not applicable. |

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· **UN "Model Regulation":** 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):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**

None of the ingredients is listed.

· **Hazardous Air Pollutants**

None of the ingredients is listed.

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value)**

None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

All chemicals may pose unknown hazards and should be used with caution. This SDS applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. Cayman Chemical Company assumes no responsibility for incidental or consequential damages, including lost profits, arising from the use of these data. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Cayman Chemical Company assumes no responsibility for the completeness or accuracy of the information contained herein.

· **Department issuing SDS:** Environment protection department.

· **Contact:** -

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**Trade name: Synthetic Opioid Analytical Standards Panel 1 Plate 2**

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**· Date of preparation** 10/20/2025**· Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified 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)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety &amp; Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Acute toxicity - oral 4: Acute toxicity – Category 4

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## Safety Data Sheet acc. to OSHA HCS

Date of issue: 10/20/2025

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### 1 Identification

- **Product identifier**
- **Trade name: Synthetic Opioid Analytical Standards Panel 1 Plate 3**
- **Other means of identification**
- **Application of the substance / the mixture**  
This product is for research use - Not for human or veterinary diagnostic or therapeutic 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**



Acute toxicity - oral 4      H302 Harmful if swallowed.  
Acute toxicity - dermal 4      H312 Harmful in contact with skin.  
Acute toxicity - inhalation 4      H332 Harmful if inhaled.

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



- **Signal word** Warning
- **Hazard statements**  
H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.
- **Precautionary statements**  
P261      Avoid breathing dust/fume/gas/mist/vapors/spray  
P264      Wash thoroughly after handling.

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**Trade name: Synthetic Opioid Analytical Standards Panel 1 Plate 3**

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- P270 Do not eat, drink or smoke when using this product.  
 P271 Use only outdoors or in a well-ventilated area.  
 P280 Wear protective gloves / protective clothing.  
 P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.  
 P302+P352 If on skin: Wash with plenty of water.  
 P304+P340 If inhaled: Remove person to fresh air and keep comfortable for breathing.  
 P321 Specific treatment (see on this label).  
 P330 Rinse mouth.  
 P362+P364 Take off contaminated clothing and wash it before reuse.  
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Information pertaining to particular dangers for man and environment:**
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 0  
 Fire = 0  
 Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



HEALTH 0 Health = 0  
 FIRE 0 Fire = 0  
 REACTIVITY 0 Reactivity = 0

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Classification according to (d)(1)(ii) of § 1910.1200**

The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.

- **Hazards not otherwise classified**

There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

### 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.
- **Dangerous components:** None

- **Other ingredients**

CAS: 911-65-9 RTECS: DD8067000	Etonitazene	0.01%
CAS: 1155-56-2	4-Anilino-1-benzylpiperidine	0.01%
CAS: 1443-51-2	meta-methyl Acetyl fentanyl (hydrochloride)	0.01%
CAS: 3612-20-2	N-Benzyl-4-piperidone	0.01%
CAS: 14188-81-9 RTECS: DD8796100	Isotonitazene	0.01%
CAS: 17730-82-4 RTECS: TL0620000	AP-237 (hydrochloride)	0.01%
CAS: 24775-71-1	N-methyl Norfentanyl (hydrochloride)	0.01%

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### Trade name: Synthetic Opioid Analytical Standards Panel 1 Plate 3

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CAS: 30123-17-2	Tianeptine (sodium salt)	0.01%
CAS: 33794-42-2	(±)-cis-3-methyl Norfentanyl	0.01%
CAS: 39742-60-4 RTECS: TN8990300	NPP	0.01%
CAS: 40064-34-4	4-Piperidone (hydrochloride hydrate)	0.01%
CAS: 63880-43-3	2-fluoro Viminol	0.01%
CAS: 64037-51-0 RTECS: TN1263000	Piperidylthiambutene (hydrochloride)	0.01%
CAS: 67197-94-8	4-phenyl U-51754 (hydrochloride)	0.01%
CAS: 67197-96-0	U-50488 (hydrochloride)	0.01%
CAS: 67450-45-7 RTECS: TX1428000	U-48753E (maleate)	0.01%
CAS: 67579-11-7	U-48520	0.01%
CAS: 67579-24-2	U-47931E	0.01%
CAS: 67579-73-1	N-desmethyl U-47700	0.01%
CAS: 75570-38-6	N-methyl U-47931E	0.01%
CAS: 79278-68-5	(±)-cis-Isofentanyl (hydrochloride)	0.01%
CAS: 98608-59-4	2-methyl AP-237 (hydrochloride)	0.01%
CAS: 99918-43-1	4-Anilinopiperidine (hydrochloride)	0.01%
CAS: 99918-45-3	Despropionyl meta-Methylfentanyl	0.01%
CAS: 117994-23-7	para-Bromofentanyl	0.01%
CAS: 122861-41-0	Despropionyl para-Fluorofentanyl	0.01%
CAS: 125541-22-2	4-Anilino-1-Boc-piperidine	0.01%
CAS: 131587-27-4	para-fluoro 4-ANBP	0.01%
CAS: 132875-69-5	Remifentanil Acid (trifluoroacetate salt)	0.01%
CAS: 185453-02-5	O-Desmethyl-cis-tramadol (hydrochloride)	0.01%
CAS: 864422-91-3	Despropionyl ortho-Fluorofentanyl	0.01%
CAS: 1071703-90-6	2'-methyl Acetyl fentanyl (hydrochloride)	0.01%
CAS: 1071704-02-3	3'-methyl Acetyl fentanyl (hydrochloride)	0.01%
CAS: 1082721-49-0	3'-methyl Fentanyl (hydrochloride)	0.01%
CAS: 2707204-49-5	Brorphine (hydrochloride)	0.01%
CAS: 2708579-41-1	N,N-didesmethyl U-47700 (trifluoroacetate salt)	0.01%
CAS: 2731038-58-5	para-hydroxy Butyryl fentanyl	0.01%
CAS: 2748592-16-5	N-Benzyl phenyl norfentanyl (hydrochloride)	0.01%
CAS: 2748592-37-0	meta-fluoro Acrylfentanyl	0.01%
CAS: 2748595-55-1	U-51754 (hydrochloride)	0.01%
CAS: 2748623-92-7	3,4-Ethylenedioxy U-51754 (hydrochloride)	0.01%
CAS: 2748624-06-6	ortho-fluoro Valeryl fentanyl (hydrochloride)	0.01%
CAS: 2748624-34-0	N-benzyl para-fluoro Norfentanyl (hydrochloride)	0.01%
CAS: 2748624-69-1	Thiophene fentanyl 3-thiophenecarboxamide (hydrochloride)	0.01%
CAS: 2748624-79-3	3'-fluoro ortho-Fluorofentanyl (hydrochloride)	0.01%
CAS: 2749171-05-7	AP-238 (hydrochloride)	0.01%
CAS: 2749327-14-6	2'-Fluorofentanyl (hydrochloride)	0.01%
CAS: 2749433-61-0	2'-methyl Fentanyl (hydrochloride)	0.01%

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CAS: 2749433-76-7	Propyl U-47700	0.01%
CAS: 2749434-50-0	3'-Fluorofentanyl (hydrochloride)	0.01%
CAS: 2749434-68-0	meta-methoxy Furanyl fentanyl	0.01%
CAS: 2749618-77-5	para-chloro Furanyl fentanyl 3-furancarboxamide	0.01%
CAS: 2749619-09-6	3,4-Ethylenedioxy U-47700 (hydrochloride)	0.01%
	3,4-Methylenedioxy U-47700 (hydrochloride)	0.01%
	Despropionyl 2'-fluoro ortho-Fluorofentanyl	0.01%
	N-benzyl para-fluoro Cyclopropyl norfentanyl (hydrochloride)	0.01%
	2,3-Benzodioxole fentanyl	0.01%
	Tigloyl fentanyl	0.01%
	meta-fluoro Furanyl fentanyl (hydrochloride)	0.01%
	meta-fluoro Valeryl fentanyl (hydrochloride)	0.01%
	para-Chloroacetyl fentanyl (hydrochloride)	0.01%
	para-Toluoyl fentanyl (hydrochloride)	0.01%
	3',5'-dimethoxy Fentanyl (hydrochloride)	0.01%
	2',3'-dimethoxy Fentanyl (hydrochloride)	0.01%
	Cyclopropaneacetyl fentanyl (hydrochloride)	0.01%
	3',4'-dimethoxy Fentanyl (hydrochloride)	0.01%
	4-methyl Fentanyl (hydrochloride)	0.01%
	2',4'-dimethoxy Fentanyl (hydrochloride)	0.01%
	2',6'-dimethoxy Fentanyl (hydrochloride)	0.01%
	Metonitazene (citrate)	0.01%

## 4 First-aid measures

- **Description of first aid measures**

- **General information:**

Immediately remove any clothing soiled by the product.

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. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

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

- **After skin contact:** Immediately rinse with water.

- **After eye contact:** Rinse opened eye for several minutes under running water.

- **After swallowing:** Immediately call a 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.

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## 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:** Mouth respiratory protective device.

## 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 section 13.  
Ensure adequate ventilation.
- **Protective Action Criteria for Chemicals**

- **PAC-1:**

None of the ingredients is listed.

- **PAC-2:**

None of the ingredients is listed.

- **PAC-3:**

None of the ingredients is listed.

- **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

- **Precautions for safe handling**  
Thorough dedusting.  
Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:** Store in accordance with information listed on the product insert.
- **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:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

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- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Appropriate engineering controls** No further data; see section 7.
- **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.  
Avoid contact with the eyes and skin.
- **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 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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- **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**
- **Physical state** Solid
- **Color:** According to product specification
- **Odor:** Characteristic
- **Storage Buffer**
- **Odor threshold:** Not determined.
- **Formulation**
- **Melting point/Melting range:** Undetermined.
- **Boiling point/Boiling range:** Undetermined.
- **Flammability:** Not determined.
- **Explosion limits:**
- **Lower:** Not determined.
- **Upper:** Not determined.
- **Flash point:** Not applicable.
- **Decomposition temperature:** Not determined.
- **pH-value:** Not applicable.

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- |   |                 |
|---|-----------------|
| · <b>Viscosity:</b>                               |                 |
| · <b>Kinematic:</b>                               | Not applicable. |
| · <b>SOLUBILITY</b>                               |                 |
| · <b>Dynamic:</b>                                 | Not applicable. |
| · <b>Solubility in / Miscibility with</b>         |                 |
| · <b>Water:</b>                                   | Insoluble.      |
| · <b>Partition coefficient (n-octanol/water):</b> | Not determined. |
| · <b>Vapor pressure:</b>                          | Not applicable. |
| · <b>Vapor pressure:</b>                          |                 |
| · <b>Density:</b>                                 | Not determined. |
| · <b>Relative density</b>                         | Not determined. |
| · <b>Vapor density</b>                            | Not applicable. |
| · <b>Particle characteristics</b>                 | Not determined. |
- 
- |  |   |
|--|---|
| · <b>Other information</b>   |   |
| · <b>Appearance:</b>   |   |
| · <b>Form:</b>   | Solid   |
| · <b>Important information on protection of health and environment, and on safety.</b> |   |
| · <b>Ignition temperature:</b>   | Product is not selfigniting.                  |
| · <b>Danger of explosion:</b>  | Product does not present an explosion hazard. |
| · <b>Solvent content:</b>  |   |
| · <b>Organic solvents:</b>   | 0.0 %   |
| · <b>VOC content:</b>  | 0.00 %  |
| · <b>Solids content:</b>   | 100.0 %                                       |
| · <b>Change in condition</b>   |   |
| · <b>Evaporation rate</b>  | 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:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

### 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:** Harmful
- **Interactive effects** No interactive effects between components are known.

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- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

- **Alternative sources for toxicological information**

No non-standard sources for toxicological information where used.

## 12 Ecological information

- **Toxicity**

- **Aquatic toxicity:** No further relevant information available.

- **Persistence and degradability** No further relevant information available.

- **Bioaccumulative potential** No further relevant information available.

- **Mobility in soil** No further relevant information available.

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **Other adverse effects**

- **Additional ecological information:**

- **General notes:**

Water hazard class 3 (Self-assessment): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

## 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

- **Transport hazard class(es)**

- **DOT, ADN, IMDG, IATA**

- **Class** not regulated

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- |  |                 |
|--|-----------------|
| · <b>Packing group</b>   |                 |
| · <b>DOT, IMDG, IATA</b>   | not regulated   |
| · <b>Environmental hazards:</b>  | Not applicable. |
| · <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable. |
| · <b>Special precautions for user</b>  | Not applicable. |
| · <b>UN "Model Regulation":</b>  | 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):**

None of the ingredients is listed.

- **Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed.

- **TSCA (Toxic Substances Control Act):**

None of the ingredients is listed.

- **Hazardous Air Pollutants**

None of the ingredients is listed.

- **Chemicals known to cause cancer:**

None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

- **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

- **Carcinogenic categories**

- **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

- **TLV (Threshold Limit Value)**

None of the ingredients is listed.

- **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

All chemicals may pose unknown hazards and should be used with caution. This SDS applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. Cayman Chemical Company assumes no responsibility for incidental or consequential damages, including lost profits, arising from the use of

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these data. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Cayman Chemical Company assumes no responsibility for the completeness or accuracy of the information contained herein.

- **Department issuing SDS:** Environment protection department.

- **Contact:** -

- **Date of previous version** 10/20/2025

- **Date of preparation** 10/20/2025

- **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified 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)

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 toxicity - oral 4: Acute toxicity – Category 4

- **\* Data compared to the previous version altered.**

US

## Safety Data Sheet acc. to OSHA HCS

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### 1 Identification

- **Product identifier**
- **Trade name: Synthetic Opioid Analytical Standards Panel 1 Plate 4**
- **Other means of identification**
- **Application of the substance / the mixture**  
This product is for research use - Not for human or veterinary diagnostic or therapeutic 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**



Acute toxicity - oral 4      H302 Harmful if swallowed.  
Acute toxicity - dermal 4      H312 Harmful in contact with skin.  
Acute toxicity - inhalation 4      H332 Harmful if inhaled.

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



- **Signal word** Warning
- **Hazard statements**  
H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.
- **Precautionary statements**  
P261      Avoid breathing dust/fume/gas/mist/vapors/spray  
P264      Wash thoroughly after handling.

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- P270 Do not eat, drink or smoke when using this product.  
 P271 Use only outdoors or in a well-ventilated area.  
 P280 Wear protective gloves / protective clothing.  
 P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.  
 P302+P352 If on skin: Wash with plenty of water.  
 P304+P340 If inhaled: Remove person to fresh air and keep comfortable for breathing.  
 P321 Specific treatment (see on this label).  
 P330 Rinse mouth.  
 P362+P364 Take off contaminated clothing and wash it before reuse.  
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Information pertaining to particular dangers for man and environment:**
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 0  
 Fire = 0  
 Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



HEALTH 0 Health = 0  
 FIRE 0 Fire = 0  
 REACTIVITY 0 Reactivity = 0

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Classification according to (d)(1)(ii) of § 1910.1200**

The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.

- **Hazards not otherwise classified**

There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

## 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.
- **Dangerous components:** None

- **Other ingredients**

2',5'-dimethoxy Fentanyl (hydrochloride)	0.01%
N-(DOM) Fentanyl (hydrochloride)	0.01%
N-(2C-I) Fentanyl (hydrochloride)	0.01%
N-(2C-P) Fentanyl (hydrochloride)	0.01%
N-(2C-E) Fentanyl (hydrochloride)	0.01%
N-(2C-B) Fentanyl (hydrochloride)	0.01%
N-(2C-N) Fentanyl (hydrochloride)	0.01%
N-(DOBU) Fentanyl (hydrochloride)	0.01%
N-(2C-C) Fentanyl (hydrochloride)	0.01%

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N-(2C-iP) Fentanyl (hydrochloride)	0.01%
N-(DOET) Fentanyl (hydrochloride)	0.01%
N-(DOI) Fentanyl (hydrochloride)	0.01%
N-(3,4,5-TMA) Fentanyl (hydrochloride)	0.01%
N-(2-APB) Fentanyl	0.01%
N-(6-APB) Fentanyl	0.01%
N-(2C-D) Fentanyl (hydrochloride)	0.01%
N-(2C-G) Fentanyl (hydrochloride)	0.01%
N-(2C-T) Fentanyl	0.01%
N-(2C-T-2) Fentanyl (hydrochloride)	0.01%
N-(2C-TFM) Fentanyl (hydrochloride)	0.01%
N-(3C-B-FLY) Fentanyl (hydrochloride)	0.01%
N-(DOB) Fentanyl (hydrochloride)	0.01%
N-(DOC) Fentanyl (hydrochloride)	0.01%
N-(2,5-DMA) Fentanyl (hydrochloride)	0.01%
N-(MDA) Fentanyl (hydrochloride)	0.01%
N-(Phentermine) Fentanyl (hydrochloride)	0.01%
N-(6-APDB) Fentanyl	0.01%
N-(2C-T-4) Fentanyl (hydrochloride)	0.01%
N-(2C-T-7) Fentanyl (hydrochloride)	0.01%
N-(2C-B-fly) Fentanyl (hydrochloride)	0.01%

### 4 First-aid measures

- **Description of first aid measures**

- **General information:**

Immediately remove any clothing soiled by the product.

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. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

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

- **After skin contact:** Immediately rinse with water.

- **After eye contact:** Rinse opened eye for several minutes under running water.

- **After swallowing:** Immediately call a 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:**

Use fire fighting measures that suit the environment.

A solid water stream may be inefficient.

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- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

### 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 section 13.  
Ensure adequate ventilation.
- **Protective Action Criteria for Chemicals**

- **PAC-1:**

None of the ingredients is listed.

- **PAC-2:**

None of the ingredients is listed.

- **PAC-3:**

None of the ingredients is listed.

- **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

- **Precautions for safe handling**  
Thorough dedusting.  
Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:** Store in accordance with information listed on the product insert.
- **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:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

### 8 Exposure controls/personal protection

- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Appropriate engineering controls** No further data; see section 7.
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from foodstuffs, beverages and feed.

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### Trade name: Synthetic Opioid Analytical Standards Panel 1 Plate 4

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Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

· **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 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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **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**

· **Physical state**

Solid

· **Color:**

According to product specification

· **Odor:**

Characteristic

· **Storage Buffer**

· **Odor threshold:**

Not determined.

· **Formulation**

· **Melting point/Melting range:**

Undetermined.

· **Boiling point/Boiling range:**

Undetermined.

· **Flammability:**

Not determined.

· **Explosion limits:**

· **Lower:**

Not determined.

· **Upper:**

Not determined.

· **Flash point:**

Not applicable.

· **Decomposition temperature:**

Not determined.

· **pH-value:**

Not applicable.

· **Viscosity:**

· **Kinematic:**

Not applicable.

· **SOLUBILITY**

· **Dynamic:**

Not applicable.

· **Solubility in / Miscibility with**

· **Water:**

Insoluble.

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- |   |                 |
|---|-----------------|
| · <b>Partition coefficient (n-octanol/water):</b> | Not determined. |
| · <b>Vapor pressure:</b>                          | Not applicable. |
| · <b>Vapor pressure:</b>                          |                 |
| · <b>Density:</b>                                 | Not determined. |
| · <b>Relative density</b>                         | Not determined. |
| · <b>Vapor density</b>                            | Not applicable. |
| · <b>Particle characteristics</b>                 | Not determined. |
- 
- |  |   |
|--|---|
| · <b>Other information</b>   |   |
| · <b>Appearance:</b>   |   |
| · <b>Form:</b>   | Solid   |
| · <b>Important information on protection of health and environment, and on safety.</b> |   |
| · <b>Ignition temperature:</b>   | Product is not selfigniting.                  |
| · <b>Danger of explosion:</b>  | Product does not present an explosion hazard. |
| · <b>Solvent content:</b>  |   |
| · <b>VOC content:</b>  | 0.00 %  |
| · <b>Solids content:</b>   | 100.0 %                                       |
| · <b>Change in condition</b>   |   |
| · <b>Evaporation rate</b>  | 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:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:** Harmful
- **Interactive effects** No interactive effects between components are known.
- **Carcinogenic categories**

· <b>IARC (International Agency for Research on Cancer)</b>
---

None of the ingredients is listed.
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· <b>NTP (National Toxicology Program)</b>
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None of the ingredients is listed.
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· <b>OSHA-Ca (Occupational Safety &amp; Health Administration)</b>
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None of the ingredients is listed.
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- **Alternative sources for toxicological information**  
No non-standard sources for toxicological information where used.

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects**
- **Additional ecological information:**
- **General notes:**  
Water hazard class 3 (Self-assessment): extremely hazardous for water  
Do not allow product to reach ground water, water course or sewage system, even in small quantities.  
Danger to drinking water if even extremely small quantities leak into the ground.

## 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

- |  |                 |
|--|-----------------|
| · <b>UN-Number</b>   |                 |
| · <b>DOT, IMDG, IATA</b>   | not regulated   |
| · <b>UN proper shipping name</b>   |                 |
| · <b>DOT, IMDG, IATA</b>   | not regulated   |
| · <b>Transport hazard class(es)</b>  |                 |
| · <b>DOT, ADN, IMDG, IATA</b>  |                 |
| · <b>Class</b>   | not regulated   |
| · <b>Packing group</b>   |                 |
| · <b>DOT, IMDG, IATA</b>   | not regulated   |
| · <b>Environmental hazards:</b>  | Not applicable. |
| · <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable. |
| · <b>Special precautions for user</b>  | Not applicable. |

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· **UN "Model Regulation":** 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):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**

None of the ingredients is listed.

· **Hazardous Air Pollutants**

None of the ingredients is listed.

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value)**

None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

All chemicals may pose unknown hazards and should be used with caution. This SDS applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. Cayman Chemical Company assumes no responsibility for incidental or consequential damages, including lost profits, arising from the use of these data. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Cayman Chemical Company assumes no responsibility for the completeness or accuracy of the information contained herein.

· **Department issuing SDS:** Environment protection department.

· **Contact:** -

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**· Date of preparation** 10/20/2025**· Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified 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)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety &amp; Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Acute toxicity - oral 4: Acute toxicity – Category 4

US