

# Certificate of Analysis

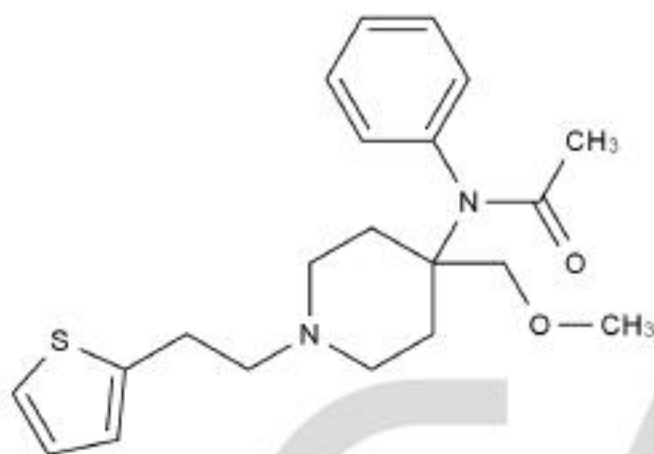
## Reference Material & Standard

|                           |                                                                                  |                          |                                           |
|---------------------------|----------------------------------------------------------------------------------|--------------------------|-------------------------------------------|
| <b>Product Name:</b>      | N-(4-(methoxymethyl)-1-(2-(thiophen-2-yl)ethyl)piperidin-4-yl)-N-phenylacetamide | <b>Catalogue Number:</b> | C4X-18634                                 |
| <b>Synonyms:</b>          | Sufentanil EP Impurity D; Sufentanil Citrate EP Impurity D                       | <b>Lot Number:</b>       | 1106-SA-7051                              |
| <b>CAS Number:</b>        | N/A                                                                              | <b>Expiry Date:</b>      | Nov 05, 28                                |
| <b>Molecular Formula:</b> | C <sub>21</sub> H <sub>28</sub> N <sub>2</sub> O <sub>2</sub> S                  | <b>Storage:</b>          | 2°C ~ 8°C Protected from light and Sealed |
| <b>Molecular Weight:</b>  | 372.52                                                                           |                          |                                           |

Warning:



Chemical Structure:



| Test Items      | Method            | Results   |
|-----------------|-------------------|-----------|
| Appearance      | Visual inspection | Solid     |
| Identification: | LC&HNMR           | Confirmed |
| Purity:         | HPLC              | 98.863%   |

CATO Research Chemicals Inc.

Signature:

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*David*

Date: Nov 06, 24

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## Directions:

- 1. Intended use: This product is suitable for identification and quantification of the analyte(s), instrument calibration, method development and quality control in analytical and R&D applications. It is not intended for administration to humans or animals, and shall not be used to diagnose, treat or cure any diseases.*
- 2. Minimum sample size: 1mg is recommended as the minimum sample size.*
- 3. Metrological traceability: This product meets the requirements of ISO 17034 and is traceable to NMI through an unbroken chain of comparisons.*
- 4. Instructions for handling and correct use: Handling in a well-ventilated place.*

## Document Version:

| Revision No. | Date       | Reason for Revision |
|--------------|------------|---------------------|
| 01           | Nov 06, 24 | First release.      |

