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P.O. # 4500622139

S.O. # 4500622139

## Certificate of Analysis Ibuprofen, 70 Grade

Lot Number: 7050-4900

Container: 50 Kg Drums

| USP Requirements<br>(current edition) | Units | Minimum | Maximum | Results |
|---------------------------------------|-------|---------|---------|---------|
| Identification                        |       |         |         |         |
| Infrared Spectral Match               |       | Pass    |         | Pass    |
| Ultraviolet Absorption                |       | Pass    |         | Pass    |
| Assay Retention Time Match            |       | Pass    |         | Pass    |
| Water                                 | wt%   |         | 1.0     | 0.0     |
| Residue on Ignition                   | wt%   |         | 0.5     | 0.0     |
| Chromatographic Purity                |       |         |         |         |
| Total Impurities                      | wt%   |         | 1.0     | 0.1     |
| Largest Single Impurity               | wt%   |         | 0.3     | 0.0     |
| Other Impurities                      | wt%   |         |         | 0.0     |
| Total Impurities: USP + All Others    | wt%   |         | 1.0     | 0.1     |
| Assay (Chromatographic)               | wt%   | 97.0    | 103.0   | 99.8    |
| Ibuprofen Related Compound C          | wt%   |         | 0.1     | 0.0     |
| Residual Solvent (Hexanes)            | ppm   |         | 290     | 70      |

| Ph.Eur Requirements<br>(current edition) | Units     | Minimum | Maximum | Results |
|------------------------------------------|-----------|---------|---------|---------|
| Identification                           |           |         |         |         |
| A) Melting Point                         | ° Celsius | 75      | 78      | 77      |
| C) Infrared Spectral Match               |           | Pass    |         | Pass    |
| Appearance of Solution                   |           |         |         |         |
| Clarity                                  |           | Pass    |         | Pass    |
| Color                                    |           | Pass    |         | Pass    |
| Optical Rotation                         | Degrees   | -0.0500 | 0.0500  | 0.0000  |
| Related Substances                       |           |         |         |         |
| Impurity A                               | wt%       |         | 0.15    | 0.05    |
| Impurity J                               | wt%       |         | 0.15    | 0.00    |
| Impurity N                               | wt%       |         | 0.15    | 0.00    |
| Unspecified impurities                   | wt%       |         | 0.05    | 0.00    |
| Total                                    | wt%       |         | 0.2     | 0.1     |
| Impurity F                               | wt%       |         | 0.1     | 0.0     |
| Loss on Drying                           | wt%       |         | 0.5     | 0.0     |
| Sulfated Ash                             | wt%       |         | 0.1     | 0.0     |
| Assay (Titration)                        | wt%       | 98.5    | 101.0   | 100.1   |
| CEP Requirements                         | Units     | Minimum | Maximum | Results |
| Residual Solvent: Hexane                 | ppm       |         | 100     | 70      |

| Other Requirements          | Units   | Minimum     | Maximum | Results |
|-----------------------------|---------|-------------|---------|---------|
| Bulk Density, Before pack   | g./ml.  | 0.35        | 0.60    | 0.46    |
| Bulk Density, After pack    | g./ml.  | 0.55        | 0.85    | 0.66    |
| Particle Size, median       | microns | 55          | 85      | 70      |
| 85 <sup>th</sup> percentile | microns | Report Only |         | 34      |
| 15 <sup>th</sup> percentile | microns | Report Only |         | 133     |

Date of Manufacture: December 27, 2021 Retest Date: Four Years from Date of Manufacture SIG-2019  
Date of Release: January 14, 2022

Quality Assurance:

COA Issue Date: February 3, 2022

CERTIFIED TRUE AND CORRECT  
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8-17-5-2022