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|  | Washington State University Institutional Animal Care and Use Committee | Standard Operating Procedure #4 |
| | Title: Standard Operating Procedures for Preparation of Non-Pharmaceutical Grade Sodium Pentobarbital | |
| Effective Date: 2/13/2023 (Replacing version 11.1.2019) | | Page 1 of 2 |

Standard Operating Procedures for Preparation of Non-Pharmaceutical Grade Sodium Pentobarbital

1.0 Purpose:

1.1 To provide guidance on the preparation of sodium pentobarbital from pentobarbital powder. Note: The use of non-pharmaceutical grade pentobarbital will require strong scientific justification for approval since it is available in pharmaceutical grade. There are also alternative pharmaceutical grade anesthetic options available.” Please view [IACUC Policy 29](#) “Use of Non-Pharmaceutical Grade Substances” for additional guidance.

2.0 Ingredients:

- 2.1** 6 g sodium pentobarbital
- 2.2** 10 mL ethanol (95%)
- 2.3** 40 mL propylene glycol USP
- 2.4** Fill to 100 mL with 0.9% saline (approx. 50 mL saline)


3.0 Preparations:

- 3.1** Dissolve the pentobarbital powder in the ethanol.
- 3.2** Add 25 mL of saline after the pentobarbital is completely dissolved in the ethanol, mix thoroughly.
- 3.3** Add 40 mL propylene glycol, mix.
- 3.4** Bring to final volume (100 mL) with approximately 25 mL of 0.9% saline.

The pentobarbital concentration in the final solution is 60 mg/mL.

4.0 Notes:

- 4.1** Stock solutions must be protected from light and maintained at 4°C no longer than 6 months.
- 4.2** Stock solutions must be passed through a sterile 0.2-micron filter prior to being stored.
- 4.3** Stock solutions must be prepared and stored in sterile vials.
- 4.4** Working solutions can be prepared and maintained similar to stock solutions but can be stored at room temperature for up to 30 days.
- 4.5** Transfer of solutions must utilize sterile supplies and techniques (e.g., sterile needles and syringes).
- 4.6** All containers must be labeled with material name, concentration, date prepared, storage requirements, expiration date, and the initials of the person making the solution.
- 4.7** Use must be recorded similar to other controlled substances.

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5.0 Reference:

5.1 IACUC [Policy #29](https://iacuc.wsu.edu/policies/) “Use of Non-Pharmaceutical Grade Substances”

<https://iacuc.wsu.edu/policies/>

5.2 <https://research.iu.edu/doc/compliance/animal-care/iupui/iupui-iacuc-use-of-non-pharmaceutical-grade-chemicals-compounds.pdf>