

# Thiopental sodium

## 470mg injection (Omegapharm®)

© Department for Health and Wellbeing, Government of South Australia. All rights reserved.

**Note:**

This guideline provides advice of a general nature. This statewide guideline has been prepared to promote and facilitate standardisation and consistency of practice, using a multidisciplinary approach. The guideline is based on a review of published evidence and expert opinion.

Information in this statewide guideline is current at the time of publication.

SA Health does not accept responsibility for the quality or accuracy of material on websites linked from this site and does not sponsor, approve or endorse materials on such links.

Health practitioners in the South Australian public health sector are expected to review specific details of each patient and professionally assess the applicability of the relevant guideline to that clinical situation.

If for good clinical reasons, a decision is made to depart from the guideline, the responsible clinician must document in the patient's medical record, the decision made, by whom, and detailed reasons for the departure from the guideline.

This statewide guideline does not address all the elements of clinical practice and assumes that the individual clinicians are responsible for discussing care with consumers in an environment that is culturally appropriate and which enables respectful confidential discussion. This includes:

- The use of interpreter services where necessary,
- Advising consumers of their choice and ensuring informed consent is obtained,
- Providing care within scope of practice, meeting all legislative requirements and maintaining standards of professional conduct, and
- Documenting all care in accordance with mandatory and local requirements

### This is a High Risk Medication

Thiopental may cause hypotension, decreased cardiac output and respiratory depression. Only to be used when the airway is secure or where immediate respiratory support can be provided

## Synonyms

Thiopentone, Thiopental

## Dose and Indications

*Thiopental is not considered first line for use as an anticonvulsant or for intubation in most neonates. Consider other more appropriate agents.*

### **Treatment resistant seizures/prolonged status epilepticus**

#### **Intravenous**

2.5mg/kg as a bolus injection

#### **Intravenous infusion**

Up to 8mg/kg/hour as a continuous intravenous infusion, adjusted according to response

### **Induction of anaesthesia**

#### **Intravenous**

2.5mg/kg as a bolus injection

Further dose may be given to a maximum of 5mg/kg/course.



# Thiopental sodium

## 470mg injection (Omegapharm®)

### Preparation and Administration

Extravasation can cause severe tissue necrosis

Intra-arterial injection contra-indicated as may cause arterial spasm, severe pain along the artery, thrombosis and potentially gangrene

#### Intravenous bolus

*The following preparation refers to Omegapharm brand and not the Pentothal brand. These products are not equivalent*

Omegapharm® thiopental sodium contains 470mg of thiopental sodium.

There are **TWO STEPS** to this process:

**STEP ONE:** Add 18.8mL of water for injection to the thiopental sodium 470mg vial (Omegapharm®). The resulting solution contains 25mg/mL thiopental sodium.

**STEP TWO:** Further dilute 5mL of the 25mg/mL thiopental sodium solution with 45mL compatible fluid (total volume of 50mL). The resulting solution contains 2.5mg/mL thiopental sodium.

Give as a slow push over 20-30 seconds

<b>Dose</b>	0.5mg	1mg	1.5mg	2mg	2.5mg	3mg	3.5mg	4mg
<b>Volume</b>	0.2mL	0.4mL	0.6mL	0.8mL	1mL	1.2mL	1.4mL	1.6mL

The dilution of thiopental sodium 2.5mg/mL provides a convenient solution for dose calculation. For above dose recommendations 1mL/kg is equivalent to 2.5mg/kg (using thiopental sodium 2.5mg/mL solution)



# Thiopental sodium

## 470mg injection (Omegapharm®)

### Continuous intravenous infusion

*The following preparation refers to Omegapharm brand and not the Pentothal brand. These products are not equivalent*

Omegapharm® Thiopental Sodium contains 470mg of thiopental sodium.

There are **TWO STEPS** to this process:

**STEP ONE:** Add 18.8mL of water for injection to the thiopental sodium 470mg vial (Omegapharm®). The resulting solution contains 25mg/mL thiopental sodium.

**STEP TWO:** Further dilute 5mL of the 25mg/mL thiopental sodium solution with 45mL compatible fluid (total volume of 50mL). The resulting solution contains 2.5mg/mL thiopental sodium.

The standard strength for continuous infusion is:

- > Thiopental sodium 2.5mg/mL

Diluted preparation is stable for 24 hours at room temperature

#### Formulae

**To calculate infusion rate (mL/hr):**

$$\text{Rate (mL/hr)} = \frac{\text{dose (milligram/kg/hour)} \times \text{weight(kg)}}{\text{Strength (milligram/mL)}}$$

**To calculate the dose (milligram/kg/hour):**

$$\text{Dose (milligram/kg/hour)} = \frac{\text{Rate (mL/hr)} \times \text{Strength (milligram/mL)}}{\text{Weight (kg)}}$$

### Compatible Fluids

Glucose 5%, Sodium chloride 0.9%, Sodium Chloride 0.45%

### Adverse Effects

#### Common

Arrhythmia, myocardial and respiratory depression, hypotension

#### Infrequent

Laryngospasm (during light anaesthesia), circulatory collapse, cough, electrolyte imbalance

#### Rare

Anaphylaxis, bronchospasm

#### Injection site reactions

Reconstituted solution is highly alkaline. Extravasation causes tissue necrosis.



# Thiopental sodium

## 470mg injection (Omegapharm®)

---

### Monitoring

- > Blood pressure and respiratory function
- > Therapeutic drug monitoring is not required
- > Serum potassium should be monitored when high doses are used

### Practice Points

- > Use with caution in myotonic dystrophy and undiagnosed myopathies due to risk of respiratory depression and hypotension
- > Thiopental sodium is physically incompatible with many medication and solutions, for example acidic solutions and those containing calcium and magnesium. Seek pharmacy advice
- > Laryngospasm and hypotension may occur if administered too rapidly
- > Laryngeal reflexes are not usually depressed until deep levels of anaesthesia are reached; during light anaesthesia minor stimuli can cause laryngospasm
- > Contraindicated acute porphyria
- > Use with caution in acute circulatory failure (shock), severe cardiovascular disease, hypotension, fixed cardiac output and hypovolaemia
- > Thiopental sodium has a rapid onset and short duration of action
- > Recovery from a single dose is rapid due to redistribution of thiopental; repeated doses have a cumulative effect with delayed recovery. Newborn infants, especially when preterm, may have delayed recovery due to low body fat and muscle content and therefore delayed redistribution. In addition, elimination may be delayed as hepatic metabolic pathways are less well developed
- > Hypotension may be more likely when used in combination with fentanyl and/or midazolam
- > Exercise caution when using in those with renal or hepatic impairment, due to reduced clearance
- > Thiopental sodium does not provide analgesia

### References

- > Westrin P, Jonmarker C, Werner O, Thiopentone Requirements for Induction of Anaesthesia in Neonates and in Infants One to Six Months of Age, *Anesthesiology*, 1989, 71: p344-346



# Thiopental sodium

## 470mg injection (Omegapharm®)

### Document Ownership & History

**Developed by:** SA Maternal, Neonatal & Gynaecology Community of Practice  
**Contact:** [Health.NeoMed@sa.gov.au](mailto:Health.NeoMed@sa.gov.au)  
**Endorsed by:** Commissioning and Performance, SA Health  
**Next review due:** 12/06/2025  
**ISBN number:** 9/7/8-1-76083-240-7  
**PDS reference:** **CG341**  
**Policy history:** Is this a new policy (V1)? **N**  
 Does this policy amend or update an existing policy? **Y**  
 If so, which version? **V1**  
 Does this policy replace another policy with a different title? **N**  
 If so, which policy (title)?

Approval Date	Version	Who approved New/Revised Version	Reason for Change
9/04/21	V1.1	Deputy CE, Commissioning and Performance, SA Department for Health and Wellbeing	Clarification of strength of Omegapharm® brand vs alternate brands
12/6/20	V1.0	Lynne Cowan, Deputy CE, Commissioning and Performance, SA Department for Health and Wellbeing	Original Commissioning and Performance approved version

