



THOMSON REUTERS™

PENTETATE ZINC TRISODIUM

MICROMEDEX® DRUGPOINTS SUMMARY

DrugPoints Summaries provide information on dosage, pharmacokinetics, cautions, interactions, clinical applications, adverse effects, comparative efficacy, and drug of choice information.

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Information valid as of March 17, 2011.

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Pentetate Zinc Trisodium

DrugPoint® Summary

DOSING & INDICATIONS

Adult Dosing

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- Radiation injury, Internal contamination with plutonium, americium, or curium (known or suspected): initial (if Ca-DTPA is not available), 1 gm IV as single dose
- Radiation injury, Internal contamination with plutonium, americium, or curium (known or suspected): maintenance, 1 gm IV once daily

Pediatric Dosing

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- Radiation injury, Internal contamination with plutonium, americium, or curium (known or suspected): less than 12 years, initial (if Ca-DTPA is not available), 14 mg/kg IV as a single dose; MAXIMUM dose of 1 gm
- Radiation injury, Internal contamination with plutonium, americium, or curium (known or suspected): less than 12 years, maintenance, 14 mg/kg IV once daily; MAXIMUM dose of 1 gm/day

FDA-Labeled Indications

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- Radiation injury, Internal contamination with plutonium, americium, or curium (known or suspected)

CONTRAINDICATIONS/WARNINGS

Contraindications

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- Specific contraindications have not been determined [\[2\]](#)

Precautions

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- Associated with depletion of endogenous trace metals such as magnesium and manganese when used for treatment periods lasting several months [2]
- Asthma (may cause exacerbation when administered by nebulized inhalation) [2]
- Safety precautions required to minimize contamination of others [2]
- Do not use for internal contamination with uranium or neptunium [2]

Pregnancy Category

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- [B\[4\]](#)(FDA)

Breast Feeding

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- [Thomson: Infant risk cannot be ruled out.](#)

ADVERSE EFFECTS

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Common

- **Musculoskeletal:** Pain in pelvis
- **Neurologic:** Headache, Lightheadedness

Serious

- **Endocrine metabolic:** Trace element deficiency, depletion of endogenous trace metals (eg, magnesium, manganese) (prolonged treatment)

IV COMPATIBILITY (SINGLE)

Solution

Common Solutions

Common Solutions

D5W (D5W-Dextrose 5%)








Not Tested

D10W (Dextrose 10%)



Not Tested

D5LR (Dextrose 5% in lactated Ringers)		Not Tested
D5NS (Dextrose 5% in sodium chloride 0.9%)		Not Tested
D5W - 1/2 NS (Dextrose 5% in sodium chloride 0.45%)		Not Tested
NS (Normal saline- Sodium chloride 0.9%)		Not Tested
1/2 NS (Sodium chloride 0.45%)		Not Tested

Other Solutions

No other drug-solution combinations have been tested.

Y-Site

"Not Tested"

Admixture

"Not Tested"

Syringe

"Not Tested"

TPN/TNA

TPN (2-in-1)

There are no TPN Results.

TNA (3-in-1)

There are no TNA Results.

Definitions



Compatible IV compatibility is compatible.



Incompatible IV compatibility is incompatible.



Caution: Variable Caution: IV compatibility is variable.



Uncertain IV compatibility is uncertain.



Not Tested IV compatibility is not tested.

NAME INFO

Class

[View Detailed information in DRUGDEX](#)

- Heavy Metal Chelator

Regulatory Status

- RX

Generic Availability

- No

MECHANISM OF ACTION/PHARMACOKINETICS

Mechanism of Action

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- Pentatate zinc trisodium, also known as trisodium zinc diethylenetriaminepentaacetate (Zn-DTPA), is a chelating agent that forms stable chelates with metal ions then facilitates excretion. It exchanges zinc for a metal of greater binding capacity thus the rate of elimination of plutonium, americium or curium is increased in contaminated individuals [3].

Pharmacokinetics

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Absorption

- Inhalational: poorly absorbed [3]

Distribution

- Vd: rapidly distributed [3]
- Protein binding: little or no binding [3]

Metabolism

- minimal [3]

Excretion

- Fecal: less than 3% [3]
- Renal: more than 99%, by glomerular filtration [3]

Elimination Half Life

- 94.4 min [3]

ADMINISTRATION/MONITORING

Administration

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General Information

- should drink plenty of fluids and frequently void to promote elimination of the radiocontaminants [1]
- IV route recommended if route of contamination is not known or if multiple routes of contamination are likely [1]

Inhalation

- dilute to a 1 to 1 ratio with sterile water or saline for nebulization [1]
- avoid swallowing any expectorant after nebulization [1]

Intravenous

- (infusion) dilute in 100 to 250 mL D5W, LR or NS [1]
- either give by slow intravenous push over 3 to 4 min or infuse intravenously over 30 min [1]

Monitoring

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- symptomatic improvement
- a quantitative baseline estimate of total internalized transuranium elements and measures of elimination of radioactivity by whole-body counting, by bioassay, or fecal/urine sample [\[1\]](#)
- weekly measure of the radioactivity in blood, urine, and fecal samples during treatment [\[1\]](#)
- baseline blood and urine samples (CBC with differential, BUN, serum chemistries and electrolytes, urinalysis, and blood and urine radioassays) [\[1\]](#)
- periodic CBC, serum electrolytes and essential metals (eg; magnesium, manganese) [\[1\]](#)

HOW SUPPLIED

Pentetate Zinc Trisodium

- Intravenous Solution: 200 MG/ML

CLINICAL TEACHING

- Instruct patient in proper radioactive safety precautions including handling/disposal of body fluids, in order to minimize contamination of others.
- This drug may cause light-headedness, pelvic pain, or headache.
- Inhaled form of drug may cause exacerbation of asthma.
- Patient should drink plenty of fluids (as prescribed by healthcare professional) and frequently void to promote the elimination of the radio-contaminants.

[Pentetate Zinc Trisodium \(Intravenous route, Solution\)](#)

[Pentetate Zinc Trisodium \(Inhalation, oral/nebulization route, Solution\)](#)

REFERENCES

1. Product Information: pentetate zinc trisodium IV injection, inhalation solution, pentetate zinc trisodium IV injection, inhalation solution. Akorn, Inc, Buffalo Grove, IL, 2005.
2. Product Information: Pentetate zinc trisodium injection. Hameln Pharmaceuticals GMBH, Hameln, Germany, 2004.
3. Product Information: pentetate zinc trisodium intravenous solution , pentetate zinc trisodium intravenous solution . AKORN, Inc, Buffalo Grove, IL, 2004.
4. Product Information: Pentetate Zinc Trisodium Injection, Pentetate zinc trisodium injection. Hameln Pharmaceuticals, Hameln, Germany, 2004.