



>>Entry Name: Alendronic acid, BAN, INN

Synonym(s): (4-Amino-1-hydroxybutylidene)bisphosphonic acid, 9CI. 4-Amino-1-hydroxybutylidene-1,1-bisphosphonate. Adronat. Alendros. Dronal. Fosamax. G 704560. L 670452. MK 0217

CAS Registry Number: 66376-36-1

$\text{H}_2\text{NCH}_2\text{CH}_2\text{CH}_2\text{C}(\text{OH})[\text{P}(\text{O})(\text{OH})_2]_2$

Molecular Formula: $\text{C}_4\text{H}_{13}\text{NO}_7\text{P}_2$

Molecular Weight: 249.097

Accurate Mass: 249.016728

Percentage Composition: C 19.29%; H 5.26%; N 5.62%; O 44.96%; P 24.87%

Biological Use/Importance: Ca regulator; bone resorption inhibitor. Used for treatment of osteoporosis and Paget disease

Development Status: Marketed drug. Launched 1993 (Italy). As Fosamax, worldwide 30th best selling prescription drug (\$1.28 bn) (Merck) (2000, Pharma Business)

Melting Point: Mp 233-235 dec.°

Hazard & Toxicity: Exp. reprod. effects

>>Derivative: Na salt

Synonym(s): Alendronate sodium, USAN

CAS Registry Number: 121268-17-5

Physical Description: Trihydrate

Hazard & Toxicity: Exp. reprod. effects

References:

- Kabachnik, M.I. *et al.*, *Izv. Akad. Nauk SSSR, Ser. Khim.*, 1978, 433; *Bull. Acad. Sci. USSR, Div. Chem. Sci. (Engl. Transl.)*, 1978, 374, (synth)
- Sietsema, W.K. *et al.*, *Drugs Exp. Clin. Res.*, 1989, **15**, 389, (pharmacol)
- Lin, J.H. *et al.*, *Drug Metab. Dispos.*, 1991, **19**, 926, (metab)
- Kline, W.F. *et al.*, *J. Chromatogr.*, 1992, **583**, 183, (hplc)
- Osteoporosis, Suppl. 3*, 1993, **3**, (rev)
- Minsker, D.H. *et al.*, *Toxicol. Appl. Pharmacol.*, 1993, **121**, 217, (tox)
- Azuma, Y. *et al.*, *Bone*, 1995, **16**, 235, (pharmacol)
- Shinkai, I. *et al.*, *Bioorg. Med. Chem.*, 1996, **4**, 3, (rev)
- Jeal, W. *et al.*, *Drugs*, 1997, **53**, 415-434, (pharmacol, rev)
- Martindale, *The Extra Pharmacopoeia*, 32nd edn., Pharmaceutical Press, 1999, 733