EXPLANATORY MONOGRAPH

Title

Chemical Abstracts Registry Number

Chemical Abstracts Name

Monograph number

1565. *n*-Butyl Cyanoacrylate. [6606-65-1] 2-Cyano-2-propenoic acid butyl ester; enbucrilate; NBCA; *n*-butyl 2-cyanoacrylate; Histoacryl; Indermil; Liquiband; Tisuacryl; Vetbond.

Alternate names and/or trademarks (capitalized) of title compound

Molecular formula

$C_8H_{11}NO_2$; mol wt 153.18.

Molecular weight

Percentage composition

C 62.73%, H 7.24%, N 9.14%, O 20.89%.

Monomer rapidly polymerizes upon contact with fluid or tissue to form a strong, biodegradable adhesive. Preparative methods: A. E. Ardis, **US 2467927** (1949 to B. F. Goodrich); C. H. McKeever, **US 2912454** (1959 to Rohm & Haas). Prepn, polymerization and degradation: F. Leonard *et al., J. Appl. Polym. Sci.* **10**, 259 (1966). Mechanism of polymerization and nanoparticle formation: N. Behan *et al., Biomaterials* **22**, 1335 (2001). Characterization of polymer nanoparticles by particle size analysis: A. Bootz *et al., Eur. J. Pharm. Biopharm.* **57**, 369 (2004); by MS: *idem et al., ibid.* **60**, 391 (2005). Clinical experience in ophthalmic applications: A. B. Leahey *et al., Ophthalmology* **100**, 173 (1993); in closure of surgical incisions: G. E. Amiel *et al., J. Am. Coll. Surg.* **189**, 21 (1999). Clinical evaluation in augmentation rhinoplasty: M. E. Sachs, *Arch. Otolaryngol.* **111**, 389 (1985); in management of bleeding gastric varices: B. D. Greenwald *et al., Am. J. Gastroenterol.* **98**, 1982 (2003). Review of biomedical applications: C. Vauthier *et al., Adv. Drug Delivery Rev.* **55**, 519-548 (2003).

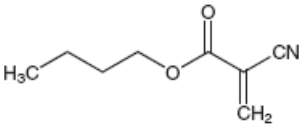
Chemical information

Biological and pharmacological information

Reviews

Literature references

Structure



Derivative Compound Chemical Abstracts Registry Number

Colorless liquid. $bp_{1.8}$ 68°. d^{20} 0.989. n_D^{20} 1.4424. n_D^{25} 1.4410. Insol in water. Flash pt, closed cup: >176°F (>80°C). Vapor pressure (25°): <0.5 mmHg. Surface tension: 31.11 dynes/cm. *Highly reactive with water and weak bases.*

Physical data for title compound

Derivative of title compound

Polymer. [25154-80-7] Poly(butyl 2-cyanoacrylate).

Alternate names and/or trademarks of the derivative compound

Non-medical use

USE: Adhesive. Polymer nanoparticles as pharmaceutic aid for controlled release drug delivery.

Therapeutic category (in humans)

THERAP CAT: Tissue adhesive.

THERAP CAT (VET): Tissue adhesive.

Therapeutic category (veterinary)

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