

18 Comments

Therapeutically, isopropyl alcohol has been investigated for the treatment of postoperative nausea or vomiting.⁽¹⁰⁾

Isopropyl alcohol has some antimicrobial activity (see Section 10) and a 70% v/v aqueous solution is used as a topical disinfectant.

A specification for isopropyl alcohol is contained in the *Food Chemicals Codex* (FCC).⁽¹¹⁾

The EINECS number for isopropyl alcohol is 200-661-7. The PubChem Compound ID (CID) for isopropyl alcohol is 3776.

19 Specific References

- 1 Rafiee Tehrani H, Mehramizi A. *In vitro* release studies of piroxicam from oil-in-water creams and hydroalcoholic gel topical formulations. *Drug Dev Ind Pharm* 2000; 26(4): 409–414.
- 2 Ruckmani K, et al. Eudragit matrices for sustained release of ketorolac tromethamine: formulation and kinetics of release. *Boll Chim Form* 2000; 139: 205–208.
- 3 Guengoer S, Bergisadi N. Effect of penetration enhancers on *in vitro* percutaneous penetration of nimesulide through rat skin. *Pharmazie* 2004; 59: 39–41.
- 4 Leeper SC, et al. Topical absorption of isopropyl alcohol induced cardiac neurological deficits in an adult female with intact skin. *Vet Hum Toxicol* 2000; 42: 15–17.
- 5 Schick JB, Milstein JM. Burn hazard of isopropyl alcohol in the neonate. *Pediatrics* 1981; 68: 587–588.

- 6 Weintraub Z, Iancu TC. Isopropyl alcohol burns. *Pediatrics* 1982; 69: 506.
- 7 Monaghan MS, et al. Use of delta osmolality to predict serum isopropanol and acetone concentrations. *Pharmacotherapy* 1993; 13(1): 60–63.
- 8 Lewis RJ, ed. *Sax's Dangerous Properties of Industrial Materials*, 12th edn. New York: Wiley, 2012; 2637–2638.
- 9 Health and Safety Executive. *EH40/2005: Workplace Exposure Limits*. Sudbury: HSE Books, 2011. www.hse.gov.uk/pubns/priced/eh40.pdf (accessed 16 October 2015).
- 10 Merritt BA, et al. Isopropyl alcohol inhalation: alternative treatment of postoperative nausea and vomiting. *Nurs Res* 2002; 51(2): 125–128.
- 11 *Food Chemicals Codex*. [online] Bethesda, MD: United States Pharmacopeia. <http://publications.usp.org> (accessed 31 March 2017).

20 General References

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21 Author

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22 Date of Revision

4 May 2017.

Isopropyl Isostearate

1 Nonproprietary Names

None adopted.

2 Synonyms

Crodamol IPIS; *DUBCARE TRIISO*; isostearic acid, isopropyl ester; 1-methylethyl isooctadecanoate; *Nikkol IPIS*; 2-propyl isooctadecanoate; *Schercemol 318 Ester*; *Wickenol 131*.

3 Chemical Name and CAS Registry Number

Propan-2-yl 16-methylheptadecanoate [68171-33-5]

4 Empirical Formula and Molecular Weight

C₂₁H₄₂O₂ 326.56

5 Structural Formula



6 Functional Category

Emollient.

7 Applications in Pharmaceutical Formulation or Technology

Isopropyl isostearate is used as an emollient in pharmaceutical formulations, such as topical creams and emulsions. It has also been studied for use in nanoparticulate drug delivery systems.⁽¹⁾

8 Description

Isopropyl isostearate occurs as a clear liquid with a bland odor.

9 Pharmacopeial Specifications

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10 Typical Properties

Acid value ≤ 1 for *Schercemol 318 Ester*⁽²⁾*Boiling point* 360.7°C at 760 mmHg⁽²⁾*Contact angle* 19.1 for *Schercemol 318 Ester*⁽²⁾*Density* 0.86 g/cm³⁽³⁾*Flash point* 183.6°C⁽³⁾*Freezing point* -28°C for *Schercemol 318 Ester*⁽²⁾*Interfacial tension* 25.8 mN/m for *Schercemol 318 Ester*⁽²⁾*Iodine value* ≤ 3 for *Schercemol 318 Ester*⁽²⁾*Refractive index* Typically 1.445; 1.443 for *Schercemol 318 Ester*⁽²⁾*Saponification value* 160–180 for *Schercemol 318 Ester*⁽²⁾

Solubility Soluble in acetone, ethanol (95%), ethyl acetate, isopropyl alcohol, and mineral oil. Insoluble in water, glycerol, and propylene glycol.

Surface tension 29.8 dyne/cm⁽³⁾*Vapor pressure* 2.18 × 10⁻⁵ mmHg at 25°C⁽³⁾*Viscosity* 15 mPa s (15 cP)

11 Stability and Storage Conditions

Isopropyl isostearate is resistant to oxidation and hydrolysis, and does not become rancid. It should be stored in a well-closed container in a cool, dry place and protected from light.