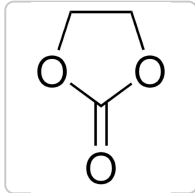




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[Back](#) [Battery Materials](#) > 809950



809950 ▶ **Sigma-Aldrich**

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Ethylene carbonate

★★★★★ (0) [Write a review](#) [Ask a question](#)

battery grade, ≥99%, acid <10 ppm, H2O <10 ppm

Synonym(s): EC, 1,3-Dioxolan-2-one

[All Photos](#) (2)

Documents

[SDS](#)



[COO/COA](#)

[Specification Sheet](#)

[More Documents](#)

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Select a Size

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25 G
\$281.00

500 G
\$1,070.00

809950-
25G ⓘ
\$281.00

Availability

✓ In Stock [Details](#)

- 1 +

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Feedback

About This Item

Empirical Formula (Hill Notation): C₃H₄O₃

CAS Number: [96-49-1](#)

Molecular Weight: 88.06

Beilstein/REAXYS Number: 106249

EC Number: [202-510-0](#)

MDL number: [MFCD00005382](#)

UNSPSC Code: 12352108

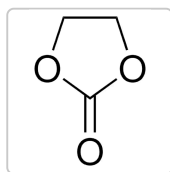
PubChem Substance ID: [329769201](#)

NACRES: NA.23



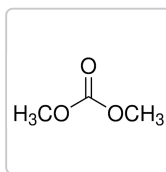
[Ask a Scientist](#)

RECOMMENDED PRODUCTS



Sigma-Aldrich
E26258
Ethylene carbonate

[View Price and Availability](#)



Sigma-Aldrich
517127
Dimethyl carbonate

[View Price and Availability](#)

PROPERTIES

grade battery grade

Quality Level **100**

vapor density 3.04 (vs air)

vapor pressure 0.02 mmHg (36.4 °C)

assay $\geq 99\%$

form solid

impurities ≤ 10 ppm H₂O
 ≤ 10 ppm acid

bp 243-244 °C/740 mmHg (lit.)

mp 35-38 °C (lit.)
36 °C (exp.)

density 1.321 g/mL at 25 °C (lit.)

application(s) battery manufacturing

SMILES string O=C1OCCO1

 Ask a Scientist

Feedback

InChI

1S/C3H4O3/c4-3-5-1-2-6-3/h1-2H2

InChI key

KMTRUDSVKNLOMY-UHFFFAOYSA-N

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Related Categories

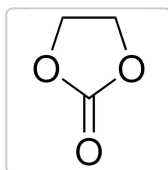
[Battery Materials](#)

[Solvents](#)

COMPARE SIMILAR ITEMS

Show Differences

This Item



809950

Ethylene carbonate

[View Price and Availability](#)

grade

battery grade

form

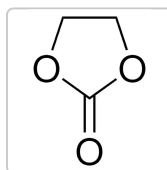
solid

application(s)

battery manufacturing

assay

≥99%



01380

Ethylene carbonate

[View Price and Availability](#)

grade

Standard for quantitative NMR, *TraceCERT*[®]

form

-

application(s)

cleaning products
cosmetics
flavors and fragrances
food and beverages
personal care
pharmaceutical

assay

-

Feedback



Ask a Scientist

This Item**impurities**

≤10 ppm H₂O, ≤10 ppm acid

impurities

-

DESCRIPTION

General description

Anhydrous ethylene carbonate is a cyclic ester and chemically related to ethylene glycol and dimethyl carbonate. It is a highly polar solvent and is a good solvent for many organic and inorganic compounds; however, at room temperature (25 °C) ethylene carbonate is a transparent crystalline solid, practically odorless and colorless, and somewhat soluble in water. In the liquid state (m.p. 35-37 °C) ethylene carbonate is a colorless, odorless liquid with a high boiling point (243 °C). Anhydrous ethylene carbonate is a solvent that is commonly used in the production of batteries, particularly lithium-ion batteries, and as a solvent in the pharmaceutical and chemical industries, in part because of its very high dielectric constant. Because of its high melting point and moderate viscosity, ethylene carbonate is often blended with other carbonates to yield a solution at room temperature with lower viscosity.

Application

Alkyl carbonates find applications as solvents for lithium ion battery electrolytes and the use of high quality battery grade electrolytes having extremely low water (<10 ppm) and acid (<10 ppm) contents are critical for achieving high electrochemical performance.

Caution

These additives have low water content (less than 100 ppm). Please handle under inert and moisture free environment (glove box). Keep containers tightly closed. Keep away from heat and ignition sources. Store in a cool and dry place. Avoid storing together with oxidizers.

Legal Information

Product of MU Ionic Solutions Corp

RELATED PRODUCTS

 Ask a Scientist

Related Product

450227

Lithium hexafluorophosphate, battery grade, $\geq 99.99\%$ trace metals basis

[View Pricing](#)

757136

Lithium bis(oxalato)borate

[View Pricing](#)

774138

Lithium difluoro(oxalato)borate

[View Pricing](#)

809942

Dimethyl carbonate, battery grade, $\geq 99.9\%$, acid < 10 ppm, H₂O < 10 ppm

[View Pricing](#)

809969

Propylene carbonate, battery grade, $\geq 99\%$, acid < 10 ppm, H₂O < 10 ppm

[View Pricing](#)

809977

Vinylene carbonate, battery grade, 99.5%, acid < 200 ppm, H₂O < 100 ppm

[View Pricing](#)

809934

Ethyl methyl carbonate, battery grade, 99.9%, acid < 10 ppm, H₂O < 10ppm

[View Pricing](#)

900018

 [Ask a Scientist](#)

Diethyl carbonate, battery grade, ≥99%, acid <10 ppm, H₂O <10 ppm

[View Pricing](#)

901593

Ethylene carbonate solution, 1 M in THF

[View Pricing](#)

901612

Ethylene carbonate solution, 1 M in DMF

[View Pricing](#)

901686

Fluoroethylene carbonate, battery grade, ≥99%, acid <200 ppm, anhydrous

[View Pricing](#)

Feedback

919977

Lithium bis(trifluoromethanesulfonyl)imide, anhydrous, 99.99% trace metals basis

[View Pricing](#)

SAFETY INFORMATION

pictograms



GHS08,GHS07

signalword

Warning

hcodes

H302,H319,H373

pcodes

P260 - P264 - P280
- P301 + P312 -
P305 + P351 + P338
- P314

Hazard

Classifications

Acute Tox. 4 Oral -
Eye Irrit. 2 - STOT RE
2 Oral

target_organ

Kidney

wgk_germany

WGK 1

flash_point_f

289.4 °F

Ask a Scientist

flash_point_c

143 °C

DOCUMENTATION



SDS



Specification Sheet

[Certificate Of Analysis](#) [Certificate Of Origin](#) [More Documents](#)

Certificates of Analysis (COA)

Search for Certificates of Analysis (COA) by entering the products Lot/Batch Number. Lot and Batch Numbers can be found on a product's label following the words 'Lot' or 'Batch'.

Lot/Batch Number

e.g. 023J5431

Search

Feedback

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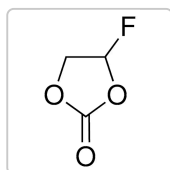
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Sigma-Aldrich
901686
Fluoroethylene
carbonate

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Sigma-Aldrich
450227
Lithium
hexafluorophosphate

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Feedback

PROTOCOLS AND ARTICLES

Articles

[High-Energy Lithium-Ion Batteries](#)

Experts discuss challenges and production processes of nickel-rich layered oxide cathode materials in energy storage systems.

[Nanostructured Olivine-based Cathode Materials for Lithium-ion Batteries](#)

Due to the adverse impact of the continued use of fossil fuels on the earth's environment and climate, researchers have been asked to develop new approaches for producing power using renewable sources like...

[Ionic Liquids for Rechargeable Batteries](#)

Ionic liquid electrolytes explored for rechargeable batteries' advancement; future IL development discussed.

Questions

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Reviews



Be the first to write a review

TECHNICAL SERVICE

Our team of scientists has experience in all areas of research including Life Science, Material Science, Chemical Synthesis, Chromatography, Analytical and many others.


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Feedback

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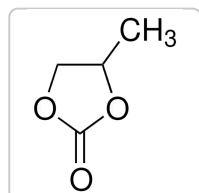
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[Back](#) [Battery Materials](#) > 809969



809969 ▶ **Sigma-Aldrich**

[Share](#)

Propylene carbonate

★★★★★ (0) [Write a review](#) [Ask a question](#)

battery grade, ≥99%, acid <10 ppm, H₂O <10 ppm

Synonym(s): PC, 1,2-Propanediol cyclic carbonate, 4-Methyl-1,3-dioxolan-2-one

[All Photos](#) (2)

Documents

[SDS](#)

[COO/COA](#)

[Specification Sheet](#)

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Select a Size

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25 G \$252.90	500 G \$1,070.00
-------------------------	----------------------------

809969-

25G ⓘ

\$252.90

List

Price \$281.00 **Save 10%**

Availability

In [Details](#)
Stock

- 1 +

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About This Item

Empirical Formula (Hill Notation): C₄H₆O₃

CAS Number: [108-32-7](#)

Molecular Weight: 102.09

Beilstein/REAXYS Number: 107913

EC Number: [203-572-1](#)

MDL number: [MFCD00005385](#)

UNSPSC Code: 12352005

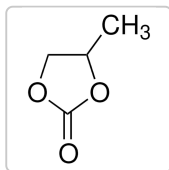
PubChem Substance ID: [329769202](#)

NACRES: NA.23

Feedback

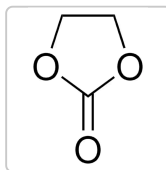
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RECOMMENDED PRODUCTS



Sigma-Aldrich
310328
Propylene carbonate

[View Price and Availability](#)



Sigma-Aldrich
809950
Ethylene carbonate

[View Price and Availability](#)

PROPERTIES

grade battery grade

Quality Level **100**

vapor pressure 0.13 mmHg (20 °C)
0.98 mmHg (50 °C)

assay $\geq 99\%$

form liquid

autoignition temp. 851 °F

expl. lim. 14.3 %

impurities ≤ 10 ppm H₂O
 ≤ 10 ppm acid

refractive index $n_{20/D}$ 1.421 (lit.)

pH 7 (20 °C, 200 g/L)

bp 240 °C (lit.)

mp -55 °C (lit.)

 Ask a Scientist

density 1.204 g/mL at 25 °C (lit.)
1.2 g/cm³

application(s) battery manufacturing

SMILES string CC1COC(=O)O1

InChI 1S/C4H6O3/c1-3-2-6-4(5)7-3/h3H,2H2,1H3

InChI key RUOJZAUFBMNUDX-UHFFFAOYSA-N

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Related Categories

[Battery Materials](#)

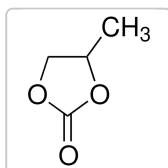
[Solvents](#)

Feedback

COMPARE SIMILAR ITEMS

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This Item



809969

Propylene carbonate

[View Price and Availability](#)

grade

battery grade

application(s)

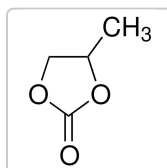
battery manufacturing

form

liquid

impurities

≤10 ppm H₂O, ≤10 ppm acid



P52652

Propylene carbonate

[View Price and Availability](#)

grade

-

application(s)

-

form

liquid

impurities

-



Ask a Scientist

This Itemassay
≥99%assay
99%

DESCRIPTION

Application

Alkyl carbonates find applications as solvents for lithium ion battery electrolytes and the use of high quality battery grade electrolytes having extremely low water (<10 ppm) and acid (<10 ppm) contents are critical for achieving high electrochemical performance.

Preparation Note

These additives have low water content (less than 100 ppm). Please handle under inert and moisture free environment (glove box). Keep containers tightly closed. Keep away from heat and ignition sources. Store in a cool and dry place. Avoid storing together with oxidizers.

Legal Information

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Feedback

RELATED PRODUCTS

Related Product

450227

Lithium hexafluorophosphate, battery grade, ≥99.99% trace metals basis

[View Pricing](#)**757136**

Lithium bis(oxalato)borate

[View Pricing](#)[Ask a Scientist](#)

774138

Lithium difluoro(oxalato)borate

[View Pricing](#)

809942

Dimethyl carbonate, battery grade, $\geq 99.9\%$, acid < 10 ppm, H₂O < 10 ppm

[View Pricing](#)

809950

Ethylene carbonate, battery grade, $\geq 99\%$, acid < 10 ppm, H₂O < 10 ppm

[View Pricing](#)

809977

Vinylene carbonate, battery grade, 99.5%, acid < 200 ppm, H₂O < 100 ppm

[View Pricing](#)

Feedback

809934

Ethyl methyl carbonate, battery grade, 99.9%, acid < 10 ppm, H₂O < 10 ppm

[View Pricing](#)

900018

Diethyl carbonate, battery grade, $\geq 99\%$, acid < 10 ppm, H₂O < 10 ppm

[View Pricing](#)

901686

Fluoroethylene carbonate, battery grade, $\geq 99\%$, acid < 200 ppm, anhydrous

[View Pricing](#)

919977

Lithium bis(trifluoromethanesulfonyl)imide, anhydrous, 99.99% trace metals basis

 Ask a Scientist

SAFETY INFORMATION

pictograms**GHS07****signalword**

Warning

hcodes**H319****pcodes****P264 - P280 - P305
+ P351 + P338 -
P337 + P313****Hazard****Classifications**

Eye Irrit. 2

wgk_germany

WGK 1

flash_point_f

275.0 °F

flash_point_c

135 °C

DOCUMENTATION

Feedback

[SDS](#)[Specification Sheet](#)[Certificate Of Analysis](#) [Certificate Of Origin](#) [More Documents](#)

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Lot/Batch Number

e.g. 023J5431

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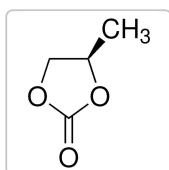
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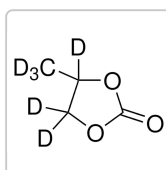
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CUSTOMERS ALSO VIEWED



Sigma-Aldrich
540013
(R)-(+)-Propylene carbonate

[View Price and Availability](#)



Sigma-Aldrich
703230
1,2-Propylene-d₆ carbonate

[View Price and Availability](#)



Feedback

PEER REVIEWED PAPERS

Shi C, et al.
Electrochimica Acta, 174 (2015)

Gor YG, et al.
Journal of Power Sources, 294 (2015)

PROTOCOLS AND ARTICLES

Articles

 [Ask a Scientist](#)

High-Energy Lithium-Ion Batteries

Experts discuss challenges and production processes of nickel-rich layered oxide cathode materials in energy storage systems.

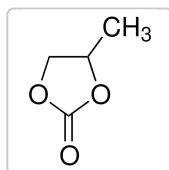
Nanostructured Olivine-based Cathode Materials for Lithium-ion Batteries

Due to the adverse impact of the continued use of fossil fuels on the earth's environment and climate, researchers have been asked to develop new approaches for producing power using renewable sources like...

Ionic Liquids for Rechargeable Batteries

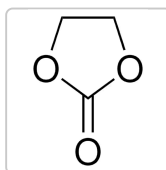
Ionic liquid electrolytes explored for rechargeable batteries' advancement; future IL development discussed.

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Sigma-Aldrich
P52652
Propylene carbonate

[View Price and Availability](#)



Sigma-Aldrich
809950
Ethylene carbonate

[View Price and Availability](#)

Feedback

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Reviews

★★★★★

[Be the first to write a review](#)

 Ask a Scientist

TECHNICAL SERVICE

Our team of scientists has experience in all areas of research including Life Science, Material Science, Chemical Synthesis, Chromatography, Analytical and many others.

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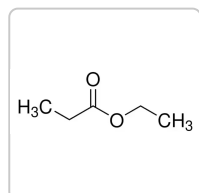
Feedback

 [Ask a Scientist](#)

Type in Product Names, Product Numbers, or CAS Numbers to see suggestions.



[Back](#) [Organic Building Blocks](#) > 112305



112305 ▶ Sigma-Aldrich

[Share](#)

Ethyl propionate

★★★★★ 5.0 (1)

[Write a review](#) [Ask a question](#)

All Photos (3)

99%

Documents

Synonym(s): Ethyl propanoate, Propionic acid ethyl ester

[SDS](#)



[COO/COA](#)

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[Specification Sheet](#)

Select a Size

Change View



[More Documents](#) >>

25 ML

\$19.90

500 ML

\$51.60

1 L

\$83.50

112305-

25ML i

\$19.90

Availability

✓ In Stock [Details](#)

- 1 +

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Feedback

About This Item

Linear Formula: CH₃CH₂COOC₂H₅

CAS Number: [105-37-3](#)

Molecular Weight: 102.13

Beilstein/REAXYS Number: 506287

EC Number: [203-291-4](#)

MDL number: [MFCD00009308](#)

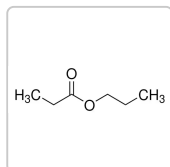
UNSPSC Code: 12352100

eCl@ss: 39022258

PubChem Substance ID: [24847086](#)

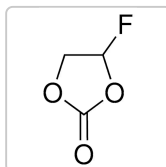
[Ask a Scientist](#)

RECOMMENDED PRODUCTS



Sigma-Aldrich
112267
 Propyl propionate

[View Price and Availability](#)



Sigma-Aldrich
757349
 Fluoroethylene carbonate

[View Price and Availability](#)

PROPERTIES

vapor density	3.52 (vs air)
Quality Level	100
vapor pressure	40 mmHg (27.2 °C)
assay	99%
form	liquid
autoignition temp.	887 °F
expl. lim.	11 %
refractive index	<i>n</i> _{20/D} 1.384 (lit.)
bp	99 °C (lit.)
mp	-73 °C (lit.)
density	0.888 g/mL at 25 °C (lit.)
SMILES string	CCOC(=O)CC



Ask a Scientist

InChI 1S/C5H10O2/c1-3-5(6)7-4-2/h3-4H2,1-2H3

InChI key FKRCODPIKNYEAC-UHFFFAOYSA-N

Looking for similar products? Visit [Product Comparison Guide](#)

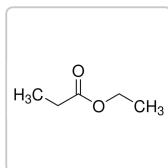
Related Categories

[Organic Building Blocks](#)

COMPARE SIMILAR ITEMS

Show Differences

This Item



112305
Ethyl propionate

[View Price and Availability](#)

Quality Level

100

density

0.888 g/mL at 25 °C (lit.)

bp

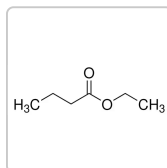
99 °C (lit.)

refractive index

$n_{20/D}$ 1.384 (lit.)

form

liquid



75563
Ethyl butyrate

[View Price and Availability](#)

Quality Level

200

density

0.875 g/mL at 25 °C (lit.)

bp

120 °C (lit.)

refractive index

$n_{20/D}$ 1.392 (lit.), $n_{20/D}$ 1.393

form

-

DESCRIPTION

General description

 Ask a Scientist

Ethyl propionate is a model for studying the fatty acid ethyl esters which are used as first-generation biodiesel^[1].

Application

Ethyl propionate was used to study the effect of its gavage administration on gastric toxicity in male F344 rats^[2].

Ethyl propionate, when used for contact dissolution of cholesterol gallstones, shows reduced side effects (attributable to increased blood levels) in piglets when compared to methyl tert-butyl ether^[3].

SAFETY INFORMATION

pictograms



GHS02,GHS07

signalword

Danger

hcodes

H225,H315,H319,H335

pcodes

P210 - P233 - P240
- P241 - P303 +
P361 + P353 - P305
+ P351 + P338

Hazard

Classifications

Eye Irrit. 2 - Flam.
Liq. 2 - Skin Irrit. 2 -
STOT SE 3

target_organ

Respiratory system

wgk_germany

WGK 1

flash_point_f

53.6 °F

flash_point_c

12 °C

ppe

Eyeshields,
Faceshields, Gloves,
type ABEK
(EN14387)
respirator filter

Feedback

DOCUMENTATION



Specification Sheet

Ask a Scientist

Certificates of Analysis (COA)

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Lot/Batch Number

e.g. 023J5431

Search

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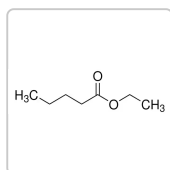
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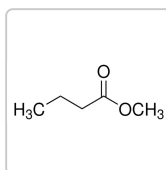
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Feedback


CUSTOMERS ALSO VIEWED



Sigma-Aldrich
290866
Ethyl valerate



Sigma-Aldrich
W269301
Methyl butyrate

 [Ask a Scientist](#)

[View Price and Availability](#)

[View Price and Availability](#)

PEER REVIEWED PAPERS

Ethyl acrylate-induced gastric toxicity. II. Structure-toxicity relationships and mechanism.

B I Ghanayem et al.

Toxicology and applied pharmacology, 80(2), 336-344 (1985-09-15)

Earlier studies conducted in this laboratory demonstrated that gavage administration of ethyl acrylate caused pronounced gastric toxicity in rats given single or repeated doses. The current studies were undertaken to investigate the structural, metabolic, and physical basis of this chemically

Atmospheric chemistry of ethyl propionate.

Vibeke F Andersen et al.

The journal of physical chemistry. A, 116(21), 5164-5179 (2012-04-25)

Ethyl propionate is a model for fatty acid ethyl esters used as first-generation biodiesel. The atmospheric chemistry of ethyl propionate was investigated at 980 mbar total pressure. Relative rate measurements in 980 mbar N(2) at 293 ± 0.5 K were

Increased blood levels of methyl tert-butyl ether but not of ethyl propionate during instillation with contact gallstone dissolution agents in the pig.

O Esch et al.

Hepatology (Baltimore, Md.), 18(2), 373-379 (1993-08-01)

We performed experiments in anesthetized piglets with two cholesterol gallstone solvents, methyl tert-butyl ether and ethyl propionate, to determine whether blood levels of either solvent would increase during gallbladder instillation of these solvents under conditions simulating gallstone dissolution. The solvent

Toxic effects of cholelitholytic solvents on gallbladder and liver. A piglet model study.

C Y Chen et al.

Digestive diseases and sciences, 40(2), 419-426 (1995-02-01)

We evaluated the toxic effects of four currently used chemolytic solvents--dimethyl sulfoxide (DMSO, 99%), ethyl propionate (EP, 99%), tetrasodium ethyl-dimethyl tetraacetate (4Na-EDTA, 2%, pH 11), and methyl tert-butyl ether (MTBE, purity = 99.5%) in an animal model. Each solvent was

Acute effects of topical methyl tert-butyl ether or ethyl propionate on gallbladder histology in animals: a comparison of two solvents for contact dissolution of cholesterol gallstones.

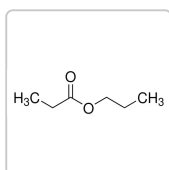
O Esch et al.

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Experiments were performed in anesthetized rabbits and piglets to assess gallbladder mucosal injury during irrigation with methyl tert-butyl ether, a C5 ether, or ethyl propionate, a C5 ester--two organic solvents used in the contact dissolution of cholesterol gallstones. In 44

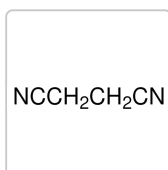
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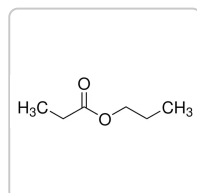
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99%

Synonym(s): Propyl propanoate

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100 ML
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1 L
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✓ Estimated December to ship on 12, 2024

- 1 +

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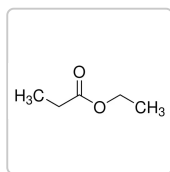
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Linear Formula:	CH ₃ CH ₂ COOCH ₂ CH ₂ CH ₃
CAS Number:	106-36-5
Molecular Weight:	116.16
Beilstein/REAXYS Number:	1699993
EC Number:	203-389-7
MDL number:	MFCD00009373
UNSPSC Code:	12352100
eCl@ss:	39022259
PubChem Substance ID:	24847079
NACRES:	NA.22

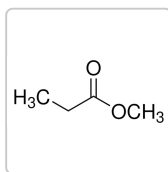
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PROPERTIES

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vapor density	4 (vs air)
Quality Level	100
assay	99%
refractive index	<i>n</i> ₂₀ /D 1.393 (lit.)
bp	122-124 °C (lit.)
mp	-76 °C (lit.)
density	0.881 g/mL at 25 °C (lit.)
SMILES string	CCCOC(=O)CC
InChI	1S/C6H12O2/c1-3-5-8-6(7)4-2/h3-5H2,1-2H3
InChI key	MCSINKKTEDDPNK-UHFFFAOYSA-N

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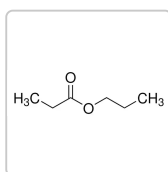
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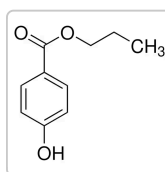
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Quality Level
100



P53357
Propyl 4-hydroxybenzoate

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Quality Level
200

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This Item

density

0.881 g/mL at 25 °C (lit.)

refractive indexn_{20/D} 1.393 (lit.)**mp**

-76 °C (lit.)

bp

122-124 °C (lit.)

density

-

refractive index

-

mp

95-98 °C (lit.)

bp

-

DESCRIPTION

General description

Propyl propionate and water mixtures can be separated by pervaporation using PEBA membranes. The diffusivity of pure propyl propionate in the PEBA membrane is about 28 times higher than pure water diffusivity^[1].

Application

Propyl propionate is a general reagent which can be used in various transesterification reactions.^{[2][3]}

SAFETY INFORMATION

pictograms**GHS02,GHS07****signalword**

Warning

hcodes**H226,H332****pcodes****P210 - P233 - P240
- P241 - P242 -
P304 + P340 + P312****Hazard****Classifications**Acute Tox. 4
Inhalation - Flam.
Liq. 3**wgk_germany**

WGK 1

flash_point_f

75.2 °F

flash_point_c

24 °C



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ppe

Eyeshields,
Faceshields, Gloves,
type ABEK
(EN14387)
respirator filter

DOCUMENTATION



SDS



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Lot/Batch Number

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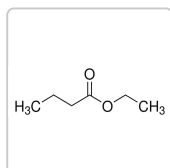
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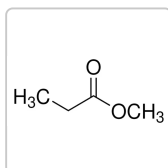
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Permselectivity, solubility and diffusivity of propyl propionate/water mixtures in poly (ether block amide) membranes.

Mujiburohman M and Feng X.

Journal of Membrane Science, 300(1), 95-103 (2007)

Propyl Propionate Methanolysis Kinetics: Experiment and Modeling.

Povarov V G and Keresten A A

The Journal of Physical Chemistry, 117(38), 9115-9119 (2013)

Lipase-catalyzed synthesis of aliphatic poly (carbonate-co-esters).

Jiang Z, et al.

Macromolecules, 41(13), 4671-4680 (2008)

Evaluation of the non-aldehyde volatile compounds formed during deep-fat frying process.

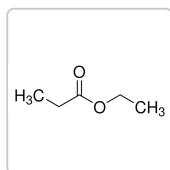
Qing Zhang et al.

Food chemistry, 243, 151-161 (2017-11-18)

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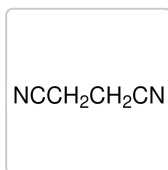
To investigate the non-aldehyde volatile profile resulting from deep-fat frying, volatile compounds formed during the processes of heating soybean oil (SO), frying wheat dough (WD), and frying chicken breast meat (CBM) were comparatively studied. By using gas chromatography-mass spectrometry and

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