

SAFETY DATA SHEET

according to the Global Harmonized System (and with all of the information required by the HPR)

Revision Date 06/18/2018

Version 2.4

SECTION 1. Identification**Product identifier**

Product number	102781
Product name	2-Propanol hypergrade for LC-MS LiChrosolv®
Synonyms	IPA, iPrOH
CAS-No.	67-63-0

Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Reagent for analysis
-----------------	----------------------

Details of the supplier of the safety data sheet

Company	Millipore (Canada) Ltd 109 Woodbine Downs Blvd. Unit 5 Etobicoke Ontario M9W 6Y1 Canada General Inquiries: +1 800-645-5476 Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5) MilliporeSigma is a business of Merck KGaA, Darmstadt, Germany.
---------	---

Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
----------------------------	--

SECTION 2. Hazards identification**GHS Classification**

Flammable liquid, Category 2, H225
Eye irritation, Category 2A, H319
Specific target organ systemic toxicity - single exposure, Category 3, Central nervous system, H336

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling*Hazard pictograms*

Signal Word
Danger

Hazard Statements

H225 Highly flammable liquid and vapor.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

SAFETY DATA SHEET

according to the Global Harmonized System (and with all of the information required by the HPR)

Product number

102781

Version 2.4

Product name

2-Propanol hypergrade for LC-MS LiChrosolv®

Precautionary Statements

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

P264 Wash skin thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing.

Rinse skin with water/ shower.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P312 Call a POISON CENTER/doctor if you feel unwell.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P403 + P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Formula	$\text{CH}_3\text{CH}(\text{OH})\text{CH}_3$	$\text{C}_3\text{H}_8\text{O}$ (Hill)
Synonyms	IPA, iPrOH	
Molar mass	60.1 g/mol	

Hazardous ingredients

Chemical name (Concentration)

CAS-No.

2-Propanol (>= 90 % - <= 100 %)

67-63-0

SECTION 4. First aid measures

Description of first-aid measures

Inhalation

After inhalation: fresh air. Call in physician.

SAFETY DATA SHEET

according to the Global Harmonized System (and with all of the information required by the HPR)

Product number

102781

Version 2.4

Product name

2-Propanol hypergrade for LC-MS LiChrosolv®

Skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

Eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

Ingestion

After swallowing: caution if victim vomits. Risk of aspiration! Keep airways free. Pulmonary failure possible after aspiration of vomit. Call a physician immediately.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

irritant effects, Headache, somnolence, respiratory paralysis, Drowsiness, Dizziness, inebriation, narcosis, Unconsciousness, Coma

Drying-out effect resulting in rough and chapped skin.

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Foam, Carbon dioxide (CO₂), Dry powder, Water

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture

Combustible.

Pay attention to flashback.

Vapors are heavier than air and may spread along floors.

Development of hazardous combustion gases or vapors possible in the event of fire.

Forms explosive mixtures with air at ambient temperatures.

Advice for firefighters

Special protective equipment for fire-fighters

In the event of fire, wear self-contained breathing apparatus.

Further information

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact.

Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

SAFETY DATA SHEET

according to the Global Harmonized System (and with all of the information required by the HPR)

Product number

102781

Version 2.4

Product name

2-Propanol hypergrade for LC-MS LiChrosolv®

Environmental precautions

Do not let product enter drains. Risk of explosion.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

SECTION 7. Handling and storage

Precautions for safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapors/aerosols.

Observe label precautions.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Conditions for safe storage, including any incompatibilities

Protected from light.

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Store at +5°C to +30°C (+41°F to +86°F).

SAFETY DATA SHEET

according to the Global Harmonized System (and with all of the information required by the HPR)

Product number
Product name

102781
2-Propanol hypergrade for LC-MS LiChrosolv®

Version 2.4

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

Basis	Value	Threshold limits	Remarks
<i>2-Propanol 67-63-0</i>			
CAD AB OEL	Time Weighted Average (TWA):	200 ppm 492 mg/m ³	
	Short Term Exposure Limit (STEL):	400 ppm 984 mg/m ³	
CAD BC OEL	Time Weighted Average (TWA):	200 ppm	
	Short Term Exposure Limit (STEL):	400 ppm	
CAD MB OEL	Time Weighted Average (TWA):	200 ppm	
	Short Term Exposure Limit (STEL):	400 ppm	
CAD ON OEL	Time Weighted Average (TWAEV):	200 ppm	
	Short Term Exposure Limit (STEV):	400 ppm	
OEL (QUE)	Time Weighted Average (TWA):	400 ppm 983 mg/m ³	
	Short Term Exposure Limit (STEL):	500 ppm 1,230 mg/m ³	

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Change contaminated clothing. Wash hands after working with substance.

Eye/face protection

Safety glasses

Hand protection

full contact:

Glove material: Nitrile rubber
Glove thickness: 0.40 mm
Break through time: > 480 min

splash contact:

Glove material: polychloroprene
Glove thickness: 0.65 mm
Break through time: > 120 min

SAFETY DATA SHEET

according to the Global Harmonized System (and with all of the information required by the HPR)

Product number

102781

Version 2.4

Product name

2-Propanol hypergrade for LC-MS LiChrosolv®

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 730 Camatril® -Velours (full contact), KCL 720 Camapren® (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment:

Flame retardant antistatic protective clothing.

Respiratory protection

required when vapors/aerosols are generated.

Recommended Filter type: Filter A (acc. to DIN 3181) for vapors of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are performed according to the instructions of the producer. These measures have to be properly documented.

SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	alcohol-like
Odor Threshold	1.0 - 196.1 ppm
pH	at 68 °F (20 °C) neutral
Melting point	-129.1 °F (-89.5 °C)
Boiling point/boiling range	180.3 °F (82.4 °C) at 1,013 hPa
Flash point	54 °F (12 °C) Method: c.c.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	2 %(V)
Upper explosion limit	13.4 %(V)
Vapor pressure	43 hPa at 68 °F (20 °C)

SAFETY DATA SHEET

according to the Global Harmonized System (and with all of the information required by the HPR)

Product number

102781

Version 2.4

Product name

2-Propanol hypergrade for LC-MS LiChrosolv®

Relative vapor density	2.07
Density	0.786 g/cm ³ at 68 °F (20 °C)
Relative density	No information available.
Water solubility	at 68 °F (20 °C) soluble
Partition coefficient: n-octanol/water	log Pow: 0.05 OECD Test Guideline 107 Bioaccumulation is not expected.
Autoignition temperature	No information available.
Decomposition temperature	Distillable in an undecomposed state at normal pressure.
Viscosity, dynamic	2.2 mPa.s at 68 °F (20 °C)
Explosive properties	Not classified as explosive.
Oxidizing properties	none
Ignition temperature	797 °F (425 °C) Method: DIN 51794
Minimum ignition energy	0.65 mJ
Conductivity	< 0.1 µS/cm

SECTION 10. Stability and reactivity

Reactivity

Formation of peroxides possible.
Vapors may form explosive mixture with air.

Chemical stability

Sensitivity to light
Sensitive to air.

Possibility of hazardous reactions

Risk of ignition or formation of inflammable gases or vapors with:

Alkali metals, Alkaline earth metals, chromium(VI) oxide

Exothermic reaction with:

Oxidizing agents, Nitric acid, Aldehydes, Amines, fuming sulfuric acid, Iron, Aluminum, Chlorine, PHOSPHORUS TRICHLORIDE, Strong acids

Risk of explosion with:

chlorates, Phosgene, organic nitro compounds, hydrogen peroxide, nitrogen oxides, perchlorates

SAFETY DATA SHEET

according to the Global Harmonized System (and with all of the information required by the HPR)

Product number

102781

Version 2.4

Product name

2-Propanol hypergrade for LC-MS LiChrosolv®

Conditions to avoid

Warming.

Incompatible materials

rubber, various plastics, oils

Hazardous decomposition products

Peroxides

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Inhalation, Eye contact, Skin contact

Acute oral toxicity

LD50 Rat: 5,045 mg/kg (RTECS)

Symptoms: Risk of aspiration upon vomiting., Aspiration may cause pulmonary edema and pneumonitis.

Acute inhalation toxicity

LC50 Rat: 37.5 mg/l; 4 h ; vapor

OECD Test Guideline 403

Symptoms: Possible damages:, mucosal irritations

Acute dermal toxicity

LD50 Rabbit: 12,800 mg/kg

(RTECS)

Skin irritation

Rabbit

Result: No skin irritation

OECD Test Guideline 404

Drying-out effect resulting in rough and chapped skin.

Eye irritation

Rabbit

Result: Eye irritation

OECD Test Guideline 405

Causes serious eye irritation.

Sensitization

Buehler Test Guinea pig

Result: negative

Method: OECD Test Guideline 406

SAFETY DATA SHEET

according to the Global Harmonized System (and with all of the information required by the HPR)

Product number

102781

Version 2.4

Product name

2-Propanol hypergrade for LC-MS LiChrosolv®

Genotoxicity in vivo

In vivo micronucleus test

Mouse

Result: negative

Method: OECD Test Guideline 474

Genotoxicity in vitro

Ames test

Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

In vitro mammalian cell gene mutation test

Result: negative

Method: OECD Test Guideline 476

Carcinogenicity

Method: OECD Test Guideline 451

Did not show carcinogenic effects in animal experiments.

Reproductive toxicity

No impairment of reproductive performance in animal experiments. (IUCLID)

Teratogenicity

Did not show teratogenic effects in animal experiments. (IUCLID)

Specific target organ systemic toxicity - single exposure

May cause drowsiness or dizziness.

Target Organs: Central nervous system

Specific target organ systemic toxicity - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard

Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

ACGIH

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information

After absorption:

SAFETY DATA SHEET

according to the Global Harmonized System (and with all of the information required by the HPR)

Product number

102781

Version 2.4

Product name

2-Propanol hypergrade for LC-MS LiChrosolv®

Headache, Dizziness, inebriation, Unconsciousness, narcosis

Systemic effects:

After uptake of large quantities:

respiratory paralysis, Coma

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish

flow-through test LC50 Pimephales promelas (fathead minnow): 9,640 mg/l; 96 h

US-EPA

Toxicity to daphnia and other aquatic invertebrates

EC50 Daphnia magna (Water flea): 13,299 mg/l; 48 h (IUCLID)

Toxicity to algae

IC50 Desmodesmus subspicatus (green algae): > 1,000 mg/l; 72 h (IUCLID)

Toxicity to bacteria

EC5 Pseudomonas putida: 1,050 mg/l; 16 h (Lit.)

Persistence and degradability

Biodegradability

95 %; 21 d; aerobic

OECD Test Guideline 301E

Readily biodegradable.

Theoretical oxygen demand (ThOD)

2,400 mg/g

(Lit.)

Ratio BOD/ThBOD

BOD5 49 %

(IUCLID)

Ratio COD/ThBOD

96 %

(Lit.)

Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: 0.05

OECD Test Guideline 107

Bioaccumulation is not expected.

Mobility in soil

No information available.

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SAFETY DATA SHEET

according to the Global Harmonized System (and with all of the information required by the HPR)

Product number

102781

Version 2.4

Product name

2-Propanol hypergrade for LC-MS LiChrosolv®

SECTION 14. Transport information

Land transport (DOT)

UN number UN 1219
Proper shipping name ISOPROPANOL
Class 3
Packing group II
Environmentally hazardous --

Air transport (IATA)

UN number UN 1219
Proper shipping name ISOPROPANOL
Class 3
Packing group II
Environmentally hazardous --
Special precautions for user no

Sea transport (IMDG)

UN number UN 1219
Proper shipping name ISOPROPANOL
Class 3
Packing group II
Environmentally hazardous --
Special precautions for user yes
EmS F-E S-D

SECTION 15. Regulatory information

United States of America

Canada

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

SAFETY DATA SHEET

according to the Global Harmonized System (and with all of the information required by the HPR)

Product number

102781

Version 2.4

Product name

2-Propanol hypergrade for LC-MS LiChrosolv®

Labeling

Hazard pictograms



Signal Word

Danger

Hazard Statements

H225 Highly flammable liquid and vapor.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

Precautionary Statements

Prevention

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P240 Ground/bond container and receiving equipment.

Response

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Revision Date 06/18/2018

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

All rights reserved. Millipore and the "M" Mark are registered trademarks of Merck KGaA, Darmstadt, Germany.