

**SAFETY DATA SHEET**

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 09/14/2018

Version 2.2

**SECTION 1. Identification****Product identifier**

Product number	109634
Product name	2-Propanol for analysis EMSURE® ACS,ISO,Reag. Ph Eur
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, Chemical production
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**Details of the supplier of the safety data sheet**

Company	EMD Millipore Corporation   400 Summit Drive   Burlington   Massachusetts 01803   United States of America   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.
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<b>Emergency telephone</b>	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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**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.

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H336 May cause drowsiness or dizziness.

### *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.

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## **SECTION 3. Composition/information on ingredients**

Formula	CH <sub>3</sub> CH(OH)CH <sub>3</sub>	C <sub>3</sub> H <sub>8</sub> 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

Exact percentages are being withheld as a trade secret.

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## **SECTION 4. First aid measures**

### **Description of first-aid measures**

*Inhalation*

After inhalation: fresh air. Call in physician.

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### *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.

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## **SECTION 5. Fire-fighting measures**

### **Extinguishing media**

#### *Suitable extinguishing media*

Foam, Carbon dioxide (CO<sub>2</sub>), Dry powder

#### *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.

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## **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.

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## 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.

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## SECTION 7. Handling and storage

### Precautions for safe handling

Observe label precautions.

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

### *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).

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## SECTION 8. Exposure controls/personal protection

### Exposure limit(s)

#### *Ingredients*

Basis	Value	Threshold limits	Remarks
<i>2-Propanol 67-63-0</i>			
ACGIH	Time Weighted Average (TWA):	200 ppm	
	Short Term Exposure Limit (STEL):	400 ppm	
NIOSH/GUIDE	Recommended exposure limit (REL):	400 ppm 980 mg/m <sup>3</sup>	
	Short Term Exposure Limit (STEL):	500 ppm 1,225 mg/m <sup>3</sup>	
OSHA_TRANS	PEL:	400 ppm 980 mg/m <sup>3</sup>	
Z1A	Short Term Exposure Limit (STEL):	500 ppm 1,225 mg/m <sup>3</sup>	
	Time Weighted Average (TWA):	400 ppm 980 mg/m <sup>3</sup>	

### Engineering measures

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

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## 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

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](http://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.

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## 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

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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)
Relative vapor density	2.07
Density	0.786 g/cm <sup>3</sup> 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

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## 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 explosion with:

chlorates, Phosgene, organic nitro compounds, hydrogen peroxide, perchlorates, strong oxidizing agents, Nitric acid, nitrogen dioxide

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

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

Exothermic reaction with:

Aldehydes, Amines, fuming sulfuric acid, Iron, Aluminum, Chlorine, PHOSPHORUS TRICHLORIDE, Strong acids, halogen compounds, potassium tert-butanolate

### Conditions to avoid

Warming.

### Incompatible materials

rubber, various plastics, oils

### Hazardous decomposition products

Peroxides

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## SECTION 11. Toxicological information

### Information on toxicological effects

#### *Likely route of exposure*

Inhalation, Eye contact, Skin contact

#### *Target Organs*

Eyes

Skin

Respiratory system

#### *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

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## *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

## *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.



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## *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:

Headache, Dizziness, inebriation, Unconsciousness, narcosis

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.

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## **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.)

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*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.

**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

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EmS

F-E S-D

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**SECTION 15. Regulatory information**

**United States of America**

**SARA 313**

The following components are subject to reporting levels established by SARA Title III, Section 313:

*Ingredients*

2-Propanol	67-63-0	100 %
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**SARA 302**

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**Clean Water Act**

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

**DEA List I**

Not listed

**DEA List II**

Not listed

**US State Regulations**

**Massachusetts Right To Know**

*Ingredients*

2-Propanol

**Pennsylvania Right To Know**

*Ingredients*

2-Propanol

**New Jersey Right To Know**

*Ingredients*

2-Propanol

**California Prop 65 Components**

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

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## 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.

### 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.

### Full text of H-Statements referred to under sections 2 and 3.

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

### 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](http://www.wikipedia.org).

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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.

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