



# SAFETY DATA SHEET

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

Revision Date 04/04/2014

Version 1. 2

## SECTION 1. Identification

### Product identifier

Product number	100979
Product name	Isoamyl alcohol for analysis EMSURE® ACS, Reag. Ph Eur
CAS-No.	123-51-3

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

Identified uses	Reagent for analysis
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### Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation   290 Concord Road, Billerica, MA 01821, United States of America   General Inquiries: +1-978-751-4321   Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
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Emergency telephone	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 3, H226  
Acute toxicity, Category 4, Inhalation, H332  
Specific target organ systemic toxicity - single exposure, Category 3, Respiratory system, H335  
For the full text of the H-Statements mentioned in this Section, see Section 16.

### GHS-Labeling

#### Hazard pictograms



Signal Word  
Warning

#### Hazard Statements

H226 Flammable liquid and vapor.  
H332 Harmful if inhaled.  
H335 May cause respiratory irritation.

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## *Precautionary Statements*

P210 Keep away from heat.

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

## OSHA Hazards

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS and may deviate from the GHS information.

## Other hazards

None known.

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## SECTION 3. Composition/information on ingredients

Formula	$(\text{CH}_3)_2\text{CHCH}_2\text{CH}_2\text{OH}$	$\text{C}_5\text{H}_{12}\text{O}$ (Hill)
Molar mass	88.15 g/mol	

## Hazardous ingredients

*Chemical Name (Concentration)*

CAS-No.

*Isoamyl alcohol (>= 90 % - <= 100 % )*

123-51-3

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. If breathing stops: mouth-to-mouth breathing or artificial respiration.

Oxygen if necessary. Immediately call in physician.

#### *Skin contact*

After skin contact: wash off with plenty of water. Remove contaminated clothing.

#### *Eye contact*

After eye contact: rinse out with plenty of water with the eyelid held wide open. Call in ophthalmologist if necessary.

#### *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, Cough, Shortness of breath, Dermatitis, Dizziness, Unconsciousness, Diarrhea, Nausea, Vomiting, Headache, muscular weakness, drowsiness, confusion, Coma

Repeated exposure may cause skin dryness or cracking.

## 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*

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

Vapors are heavier than air and may spread along floors.

Pay attention to flashback.

Forms explosive mixtures with air at elevated temperatures.

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

### Advice for firefighters

*Special protective equipment for fire-fighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

*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.

### 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

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

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

Storage temperature: no restrictions.

## SECTION 8. Exposure controls/personal protection

### Exposure limit(s)

#### Ingredients

Basis	Value	Threshold limits	Remarks
<i>Isoamyl alcohol 123-51-3</i>			
ACGIH	Time Weighted Average (TWA):	100 ppm	
	Short Term Exposure Limit (STEL):	125 ppm	
NIOSH/GUIDE	Recommended exposure limit (REL):	100 ppm	
		360 mg/m <sup>3</sup>	
	Short Term Exposure Limit (STEL):	125 ppm	
		450 mg/m <sup>3</sup>	
OSHA_TRANS	PEL:	100 ppm	
		360 mg/m <sup>3</sup>	
Z1A	Short Term Exposure Limit (STEL):	125 ppm	
		450 mg/m <sup>3</sup>	
	Time Weighted Average (TWA):	100 ppm	
		360 mg/m <sup>3</sup>	

### 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

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

### Eye/face protection

Safety glasses

### Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

### Other protective equipment:

Flame retardant antistatic protective clothing

### Respiratory protection

required when vapors/aerosols are generated.

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Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	characteristic
Odor Threshold	No information available.
pH	7 at 25 g/l 68 °F (20 °C)
Melting point	-117 °C
Boiling point/boiling range	268 °F (131 °C) at 1,013 hPa
Flash point	113 °F (45 °C) Method: c.c.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	1.2 %(V)
Upper explosion limit	8 %(V)
Vapor pressure	3 hPa at 68 °F (20 °C)
Relative vapor density	3.04
Density	0.81 g/cm <sup>3</sup> at 68 °F (20 °C)
Relative density	No information available.
Water solubility	25 g/l at 68 °F (20 °C)
Partition coefficient: n-octanol/water	log Pow: 1.42 (experimental) (Lit.) Bioaccumulation is not expected.

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Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	none
Ignition temperature	635 °F (335 °C)
Saturated vapor concentration	11 g/m <sup>3</sup> at 68 °F (20 °C)

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### SECTION 10. Stability and reactivity

#### Reactivity

Vapor/air-mixtures are explosive at intense warming.

#### Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

#### Possibility of hazardous reactions

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

Fluorine, Strong oxidizing agents, Oxygen, Alkali metals, Alkaline earth metals

#### Conditions to avoid

Heating.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

#### Incompatible materials

rubber, various plastics

#### Hazardous decomposition products

no information available

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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

Central nervous system

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### *Acute oral toxicity*

LD50 rat: > 5,000 mg/kg (External MSDS)

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

### *Acute inhalation toxicity*

absorption

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract, Inhalation may lead to the formation of oedemas in the respiratory tract.

Irritating to respiratory system.

Acute toxicity estimate: 11.1 mg/l

Expert judgment

### *Acute dermal toxicity*

LD50 rabbit: > 3,000 mg/kg  
(External MSDS)

### *Skin irritation*

rabbit

Result: slight irritation  
(RTECS)

Repeated exposure may cause skin dryness or cracking.

Dermatitis

### *Eye irritation*

rabbit

Result: slight irritation  
(RTECS)

### *Genotoxicity in vitro*

Ames test

Result: negative  
(Lit.)

### *Specific target organ systemic toxicity - single exposure*

May cause respiratory irritation.

### *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 ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

No ingredient of this product present at levels greater than or

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ACGIH

equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

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

If swallowed

Absorption via:

Gastrointestinal tract

After absorption of large quantities:

Headache, drowsiness, lack of appetite, Nausea, Vomiting, Diarrhea, Dizziness, muscular weakness, confusion, Unconsciousness, Coma

Possible damages:

Damage to:

Liver, Kidney

Effect potentiated by: ethanol

Handle in accordance with good industrial hygiene and safety practice.

## SECTION 12. Ecological information

### Ecotoxicity

*Toxicity to fish*

LC50 Oncorhynchus mykiss (rainbow trout): 700 mg/l; 96 h (IUCLID)

*Toxicity to daphnia and other aquatic invertebrates*

EC50 Daphnia: 260 mg/l; 48 h (IUCLID)

EC50 Tetrahymen pyriformis: 1,184 mg/l; 48 h (IUCLID)

*Toxicity to algae*

IC50 Desmodesmus subspicatus (green algae): 493 mg/l; 72 h (IUCLID)

*Toxicity to bacteria*

EC50 Pseudomonas putida: 2,500 mg/l; 17 h (IUCLID)

### Persistence and degradability

*Biodegradability*

84 %; 27 d

OECD Test Guideline 301C

Readily biodegradable.

*Theoretical oxygen demand (ThOD)*

2,740 mg/g

(Lit.)

*Ratio BOD/COD*

63 %

(IUCLID)

*Ratio BOD/ThBOD*

BOD5 55 %

(Lit.)

*Ratio COD/ThBOD*



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77 %

(Lit.)

## Bioaccumulative potential

*Partition coefficient: n-octanol/water*

log Pow: 1.42

(experimental)

(Lit.) 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 1105
Proper shipping name	PENTANOLS
Class	3
Packing group	III
Environmentally hazardous	--

### Air transport (IATA)

UN number	UN 1105
Proper shipping name	PENTANOLS
Class	3
Packing group	III
Environmentally hazardous	--
Special precautions for user	no

### Sea transport (IMDG)

UN number	UN 1105
Proper shipping name	PENTANOLS
Class	3
Packing group	III
Environmentally hazardous	--
Special precautions for user	yes
EmS	F-E S-D

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### SECTION 15. Regulatory information

#### United States of America

##### OSHA Hazards

Combustible Liquid

Respiratory irritant

Target organ effects

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

##### SARA 311/312 Hazards

Fire Hazard

Acute Health Hazard

Chronic Health Hazard

##### SARA 313

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

##### SARA 302

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.

##### DEA List I

Not listed

##### DEA List II

Not listed

#### US State Regulations

##### Massachusetts Right To Know

*Ingredients*

Isoamyl alcohol

##### Pennsylvania Right To Know

*Ingredients*

Isoamyl alcohol

##### New Jersey Right To Know

*Ingredients*

Isoamyl alcohol

##### 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.

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## SECTION 16. Other information

### Training advice

Provide adequate information, instruction and training for operators.

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

H226 Flammable liquid and vapor.  
H332 Harmful if inhaled.  
H335 May cause respiratory irritation.

### 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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