



SAFETY DATA SHEET

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

Revision Date 01/26/2015

Version 1.4

SECTION 1. Identification

Product identifier

| | |
|----------------|---|
| Product number | 109728 |
| Product name | Pyridine for analysis EMSURE® ACS, Reag. Ph Eur |
| CAS-No. | 110-86-1 |

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 | EMD Millipore Corporation 290 Concord Road, Billerica, MA 01821, United States of America General Inquiries: +1-978-715-4321 Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5) |
|---------|--|

| | |
|---------------------|--|
| 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
Acute toxicity, Category 4, Oral, H302
Acute toxicity, Category 4, Inhalation, H332
Acute toxicity, Category 4, Dermal, H312
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.
H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled.

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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.

P270 Do not eat, drink or smoke when using this product.

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

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

P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.

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.

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

P322 Specific measures (see supplemental first aid instructions on this label).

P330 Rinse mouth.

P363 Wash contaminated clothing before reuse.

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

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

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

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Formula C5H5N (Hill)

Molar mass 79.1 g/mol

Hazardous ingredients

Chemical Name (Concentration)

CAS-No.

Pyridine (>= 90 % - <= 100 %)

110-86-1

Exact percentages are being withheld as a trade secret.

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. Consult a physician.

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Eye contact

After eye contact: rinse out with plenty of water.

Ingestion

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

irritant effects, Cough, Shortness of breath, narcosis, Nausea, Vomiting, cardiovascular disorders, collapse, Headache, insomnia, restlessness

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO₂), Foam, 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.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air at ambient temperatures.

Pay attention to flashback.

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

Fire may cause evolution of:

nitrogen oxides

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

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system. Remove container from danger zone and cool with water.

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

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Do not empty into 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 and neutralizing material (e.g. Chemisorb® OH⁻, Art. No. 101596).

Dispose of properly. Clean up affected area.

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

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).

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

| Basis | Value | Threshold limits | Remarks |
|--------------------------|-----------------------------------|-------------------------------|---------|
| <i>Pyridine 110-86-1</i> | | | |
| ACGIH | Time Weighted Average (TWA): | 1 ppm | |
| NIOSH/GUIDE | Recommended exposure limit (REL): | 5 ppm 15 mg/m ³ | |
| OSHA_TRANS | PEL: | 5 ppm 15 mg/m ³ | |
| Z1A | Time Weighted Average (TWA): | 5 ppm 15 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

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

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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.

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 | 0.0001 - 20.1 ppm |
| pH | ca. 8.5 at 16 g/l 68 °F (20 °C) |
| Melting point | -42 °C |
| Boiling point/boiling range | ca. 239 °F (115 °C) at 1,013 hPa |
| Flash point | 63 °F (17 °C) Method: c.c. |
| Evaporation rate | 12.7 |
| Flammability (solid, gas) | No information available. |
| Lower explosion limit | 1.7 %(V) |
| Upper explosion limit | 10.6 %(V) |
| Vapor pressure | 20 hPa at 68 °F (20 °C) |
| Relative vapor density | 2.73 |

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| | |
|--|--|
| Density | 0.982 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: 0.65 (experimental) (Lit.) Bioaccumulation is not expected. |
| Autoignition temperature | No information available. |
| Decomposition temperature | ca.914 °F (490 °C) |
| Viscosity, dynamic | 0.95 mPa.s at 68 °F (20 °C) |
| Explosive properties | Not classified as explosive. |
| Oxidizing properties | none |
| Ignition temperature | 900 °F (482 °C) |

SECTION 10. Stability and reactivity

Reactivity

Vapors may form explosive mixture with air.

Chemical stability

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

Possibility of hazardous reactions

Violent reactions possible with:

Oxidizing agents, Acid anhydrides, acid halides

Exothermic reaction with:

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

Fluorine, halogen-halogen compounds, chlorosulfonic acid, chromium(VI) oxide, fuming sulfuric acid, perchromates, Nitric acid, sulfuric acid, silver salt, perchlorates, nitrogen dioxide

Risk of explosion with:

perchloric acid, nitrogen oxides

Conditions to avoid

Warming.

Incompatible materials

rubber, various plastics, various metals

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Hazardous decomposition products

in the event of fire: See section 5.

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Inhalation, Eye contact, Skin contact

Target Organs

Eyes

Skin

Central nervous system

Liver

Kidneys

gastrointestinal tract

Acute oral toxicity

LD50 Rat: 891 mg/kg (RTECS)

absorption

Symptoms: Vomiting, Nausea

Acute inhalation toxicity

LC50 Rat: 17.75 mg/l; 4 h

US-EPA

absorption

Symptoms: mucosal irritations, Cough, Shortness of breath

Acute dermal toxicity

LD50 Rabbit: 1,121 mg/kg

(RTECS)

absorption

Skin irritation

Rabbit

Result: slight irritation

(RTECS)

Eye irritation

Rabbit

Result: Severe irritations

(Lit.)

Sensitization

Sensitization test: Guinea pig

Result: negative

(Lit.)

Genotoxicity in vivo

Micronucleus test

Result: negative

(National Toxicology Program)

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Chromosome aberration test

Result: negative

(National Toxicology Program)

Genotoxicity in vitro

Ames test

Result: negative

(Lit.)

Teratogenicity

Did not show teratogenic effects in animal experiments. (External MSDS)

Specific target organ systemic toxicity - single exposure

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

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

ACGIH

Confirmed animal carcinogen with unknown relevance to humans.

Pyridine

110-86-1

Further information

Systemic effects:

After uptake:

Headache, restlessness, insomnia

In high doses:

narcosis, cardiovascular disorders, Circulatory collapse

Chronic uptake results in damage of:

Liver, Kidney

Good warning effect due to low odor threshold.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish

LC50 *Oncorhynchus mykiss* (rainbow trout): 4.6 mg/l; 96 h (ECOTOX Database)

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Toxicity to daphnia and other aquatic invertebrates

EC5 E.sulcatum: 3.5 mg/l; 72 h (Lit.) (maximum permissible toxic concentration)

EC50 Daphnia magna (Water flea): 240 mg/l; 24 h (ECOTOX Database)

Toxicity to algae

IC5 Scenedesmus quadricauda (Green algae): 120 mg/l; 7 d (Lit.) (maximum permissible toxic concentration)

Toxicity to bacteria

EC5 Pseudomonas putida: 340 mg/l; 16 h (Lit.) (maximum permissible toxic concentration)

Persistence and degradability

No information available.

Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: 0.65

(experimental)

(Lit.) Bioaccumulation is not expected.

Mobility in soil

No information available.

Additional ecological information

Forms toxic mixtures in water, dilution measures notwithstanding.

Discharge into the environment must be avoided.

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 1282 |
| Proper shipping name | PYRIDINE |
| Class | 3 |
| Packing group | II |
| Environmentally hazardous | -- |

Air transport (IATA)

| | |
|------------------------------|----------|
| UN number | UN 1282 |
| Proper shipping name | PYRIDINE |
| Class | 3 |
| Packing group | II |
| Environmentally hazardous | -- |
| Special precautions for user | no |

Sea transport (IMDG)

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| | |
|-------------------------------------|----------|
| UN number | UN 1282 |
| Proper shipping name | PYRIDINE |
| 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

SARA 313

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

Ingredients

| | | |
|----------|----------|-------|
| Pyridine | 110-86-1 | 100 % |
|----------|----------|-------|

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

Pyridine

Pennsylvania Right To Know

Ingredients

Pyridine

New Jersey Right To Know

Ingredients

Pyridine

California Prop 65 Components

WARNING: this product contains a chemical known in the State of California to cause cancer.

Ingredients

Pyridine

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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.

H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled.

Precautionary Statements

Prevention

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

P240 Ground/bond container and receiving equipment.

Response

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

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.

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H332 Harmful if inhaled.

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.

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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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