

SAFETY DATA SHEET

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

Revision Date 04/08/2019

Version 1.4

SECTION 1. Identification

Product identifier

Product number	PX2020
Product name	Pyridine GR ACS
CAS-No.	110-86-1

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 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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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 2, H225
Acute toxicity, Category 4, Oral, H302
Acute toxicity, Category 4, Inhalation, H332
Acute toxicity, Category 4, Dermal, H312
Skin irritation, Category 2, H315
Eye irritation, Category 2A, H319

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

GHS-Labeling

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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.
H315 Causes skin irritation.
H319 Causes serious eye irritation.

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/doctor if you feel unwell.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 IF INHALED: Remove person to fresh air and keep 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.
P322 Specific measures (see supplemental first aid instructions on this label).
P330 Rinse mouth.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P235 Store in a well-ventilated place. Keep cool.
P501 Dispose of contents/ container to an approved waste disposal plant.

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Other hazards

None known.

SECTION 3. Composition/information on ingredients

Formula C_5H_5N (Hill)
Molar mass 79.1 g/mol

Hazardous ingredients

Chemical name (Concentration)

CAS-No.

Pyridine ($\geq 90\%$ - $\leq 100\%$)

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

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

Eye contact

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

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

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Suitable extinguishing media

Water, Foam, Carbon dioxide (CO₂), 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.

Fire may cause evolution of:

nitrogen oxides, nitrous gases

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. Suppress (knock down) gases/vapors/mists with a water spray jet. 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.

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. Chemisorb®). 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

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

Store at room temperature.

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Components

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.

SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	pungent
Odor Threshold	0.0001 - 20.1 ppm
pH	ca. 8.81 at 68 °F (20 °C)
Melting point	-44 °F (-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	1.8 %(V)
Upper explosion limit	12.4 %(V)

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Vapor pressure	ca.26.7 hPa at 77 °F (25 °C)
Relative vapor density	2.73
Density	0.982 g/cm ³ at 68 °F (20 °C)
Relative density	No information available.
Solubility(ies)	Solvent: Diethyl ether 68 °F (20 °C) miscible Solvent: ethanol 68 °F (20 °C) miscible
Water solubility	ca.1,000 g/l at 68 °F (20 °C)
Partition coefficient: n-octanol/water	log Pow: ca. 0.64 (20 °C) (experimental) (Lit.) Bioaccumulation is not expected.
Autoignition temperature	1652 °F(900 °C) at 1,013 hPa
Decomposition temperature	ca.914 °F (490 °C)
Viscosity, dynamic	ca.0.88 mPa.s at 77 °F (25 °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

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

Possibility of hazardous reactions

Risk of explosion with:

perchloric acid, nitrogen oxides, halogen-halogen compounds

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

chlorosulfonic acid, chromium(VI) oxide, Acid anhydrides, fuming sulfuric acid, Oxidizing agents, perchromates, Nitric acid, nitrogen dioxide

Exothermic reaction with:

Fluorine, sulfuric acid, silver perchlorate

Conditions to avoid

Warming.

Incompatible materials

rubber, various plastics, various metals

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: ca. 1,500 mg/kg (ECHA)

Symptoms: Vomiting, Nausea

Acute inhalation toxicity

LC50 Rat: 17.1 mg/l; 4 h ; vapor

US-EPA

Symptoms: mucosal irritations, Cough, Shortness of breath

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Acute dermal toxicity

LD50 Rabbit: > 1,000 - 2,000 mg/kg
OECD Test Guideline 402

Skin irritation

Causes skin irritation.

Eye irritation

Causes serious eye irritation.

Sensitization

Sensitization test: Guinea pig

Result: negative

(Lit.)

Genotoxicity in vivo

Micronucleus test

Mouse

Result: negative

Method: OECD Test Guideline 475

Genotoxicity in vitro

Ames test

Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

In vitro mammalian cell gene mutation test

Chinese hamster lung cells

Result: negative

Method: OECD Test Guideline 476

Teratogenicity

Did not show teratogenic effects in animal experiments.

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

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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	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.

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): 99 mg/l; 96 h

Analytical monitoring: yes(ECHA)

Toxicity to daphnia and other aquatic invertebrates

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

Toxicity to algae

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

Toxicity to bacteria

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

Persistence and degradability

Biodegradability

97 %; 28 d; aerobic

OECD Test Guideline 301B

Readily biodegradable.

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Bioaccumulative potential

Partition coefficient: n-octanol/water
log Pow: ca. 0.64 (20 °C)
(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:

Components

Pyridine	110-86-1	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

Components

Pyridine

Pennsylvania Right To Know

Components

Pyridine

New Jersey Right To Know

Components

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Pyridine

California Prop 65 Components

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

Components

Pyridine

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

(company-internal/in-house) Occupational Exposure Limit (company OEL)

Internal company value 0.8 mg/m³

Short Term Exposure (15 min) Factor 4

Pregnancy risk groups C

There is no reason to fear damage to the embryo, or foetus when the company OEL value is observed.

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.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

Precautionary Statements

Prevention

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

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P240 Ground/bond container and receiving equipment.

Response

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

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.

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

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.

Revision Date 04/08/2019

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact mlsbranding@sial.com.

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