

**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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<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  
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**

# SAFETY DATA SHEET

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

Product number

PX2020

Version 1.4

Product name

Pyridine GR ACS

## 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.

# SAFETY DATA SHEET

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

Product number PX2020  
Product name Pyridine GR ACS

Version 1.4

## Other hazards

None known.

## SECTION 3. Composition/information on ingredients

Formula C<sub>5</sub>H<sub>5</sub>N (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*

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

Page 3 of 14

# SAFETY DATA SHEET

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

Product number PX2020  
Product name Pyridine GR ACS

Version 1.4

### *Suitable extinguishing media*

Water, 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.

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.

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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. Chemisorb®). Dispose of properly. Clean up affected area.

# SAFETY DATA SHEET

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

Product number PX2020  
Product name Pyridine GR ACS

Version 1.4

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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.

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## 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 <sup>3</sup>	
OSHA_TRANS	PEL:	5 ppm 15 mg/m <sup>3</sup>	
Z1A	Time Weighted Average (TWA):	5 ppm 15 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.

Page 5 of 14

# SAFETY DATA SHEET

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

Product number PX2020  
Product name Pyridine GR ACS

---

Version 1.4

### *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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## **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)

# SAFETY DATA SHEET

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

Product number	PX2020	Version 1.4
Product name	Pyridine GR ACS	

---

Vapor pressure	ca.26.7 hPa at 77 °F (25 °C)
Relative vapor density	2.73
Density	0.982 g/cm <sup>3</sup> 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)

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## SECTION 10. Stability and reactivity

### Reactivity

Vapors may form explosive mixture with air.

### Chemical stability

## SAFETY DATA SHEET

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

Product number PX2020  
Product name Pyridine GR ACS

Version 1.4

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.

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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

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

Page 8 of 14



## SAFETY DATA SHEET

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

Product number PX2020  
Product name Pyridine GR ACS

---

Version 1.4

### *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**

## SAFETY DATA SHEET

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

Product number	PX2020	Version 1.4
Product name	Pyridine GR ACS	

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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.

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## 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.

# SAFETY DATA SHEET

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

Product number PX2020  
Product name Pyridine GR ACS

Version 1.4

## 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.

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## 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.

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## SECTION 14. Transport information

### Land transport (DOT)

<b>UN number</b>	UN 1282
<b>Proper shipping name</b>	PYRIDINE
<b>Class</b>	3
<b>Packing group</b>	II
<b>Environmentally hazardous</b>	--

### Air transport (IATA)

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

### Sea transport (IMDG)

# SAFETY DATA SHEET

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

Product number PX2020  
Product name Pyridine GR ACS

Version 1.4

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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

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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:

#### 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

# SAFETY DATA SHEET

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

Product number PX2020  
Product name Pyridine GR ACS

Version 1.4

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/m<sup>3</sup>

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.

Page 13 of 14

# SAFETY DATA SHEET

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

Product number PX2020  
Product name Pyridine GR ACS

---

Version 1.4

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

Revision Date 04/08/2019

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