

## 1. Product and Company Identification

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<b>Material name</b>	<b>PYRIDINE</b>
<b>Version #</b>	02
<b>Revision date</b>	08-29-2011
<b>CAS #</b>	110-86-1
<b>Product Codes</b>	<b>J.T.Baker: 3348, 3352, 9393</b> <b>Macron: 7180, 7181</b>
<b>Synonym(s)</b>	Azabenzene
<b>Manufacturer</b>	Avantor Performance Materials, Inc.
<b>Address</b>	3477 Corporate Parkway Suite #200 Center Valley, PA 18034 US
<b>Customer Service</b>	855-282-6867
<b>24 Hour Emergency</b>	908-859-2151
<b>Chemtrec</b>	800-424-9300

## 2. Hazards Identification

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<b>Emergency overview</b>	<b>DANGER</b>  Flammable liquid and vapor. Will be easily ignited by heat, spark or flames.  Harmful if inhaled, absorbed through skin, or swallowed. Causes eye burns. Causes skin irritation. Mist or vapor extremely irritating to eyes and respiratory tract. Vapors may cause drowsiness and dizziness. Prolonged exposure may cause chronic effects.
<b>OSHA regulatory status</b>	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
<b>Potential health effects</b>	
<b>Routes of exposure</b>	Inhalation. Ingestion. Skin contact. Eye contact.
<b>Eyes</b>	Substance causes severe eye irritation; injury may be permanent. High vapor/aerosol concentrations may be irritating.
<b>Skin</b>	Harmful if absorbed through skin. Causes skin irritation. Prolonged skin contact causes burns. May cause photosensitization, evidenced by repeated occurrence of a dermatitic rash on exposure to sunlight.
<b>Inhalation</b>	Harmful if inhaled. Can cause severe respiratory irritation. Symptoms of overexposure may include headache, drowsiness, nausea, vomiting, blurred vision, blindness, coma and death. In high concentrations, vapors and aerosol mists have a narcotic effect and may cause headache, fatigue, dizziness and nausea.
<b>Ingestion</b>	Harmful if swallowed. Ingestion may cause severe irritation of the mouth, the esophagus and the gastrointestinal tract. Symptoms of overexposure may include headache, drowsiness, nausea, vomiting, blurred vision, blindness, coma and death.
<b>Target organs</b>	Eyes. Skin. Respiratory system. Central nervous system. Liver. Kidneys.
<b>Chronic effects</b>	Can cause liver damage. Can cause kidney damage. Organic solvents may be absorbed into the body by inhalation and ingestion and cause permanent damage to the nervous system, including the brain. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
<b>Potential environmental effects</b>	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

### 3. Composition / Information on Ingredients

Components	CAS #	Percent
PYRIDINE	110-86-1	99 - 100

### 4. First Aid Measures

#### First aid procedures

<b>Eye contact</b>	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention immediately. In case of irritation from airborne exposure, move to fresh air. Get medical attention.
<b>Skin contact</b>	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.
<b>Inhalation</b>	Move to fresh air. If breathing is difficult, give oxygen. If breathing stops, provide artificial respiration. Get medical attention immediately.
<b>Ingestion</b>	Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs.

#### Notes to physician

Treat symptomatically. Symptoms may be delayed.

#### General advice

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

### 5. Fire Fighting Measures

**Flammable properties** HIGHLY FLAMMABLE! Vapors may cause a flash fire or ignite explosively. Vapors may travel considerable distance to a source of ignition and flash back. Heat may cause the containers to explode.

#### Extinguishing media

**Suitable extinguishing media** Water spray. Foam. Dry powder. Carbon dioxide (CO<sub>2</sub>).

**Unsuitable extinguishing media** Do not use water jet as an extinguisher, as this will spread the fire.

#### Protection of firefighters

**Specific hazards arising from the chemical** Can be ignited easily and burns vigorously. Vapor from the solvent may accumulate in container headspace resulting in flammability hazard.

**Protective equipment and precautions for firefighters** Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. Move containers from fire area if you can do so without risk. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out. Some of these materials, if spilled, may evaporate leaving a flammable residue. Cool containers exposed to flames with water until well after the fire is out.

**Special protective equipment for fire-fighters** As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**Specific methods** In the event of fire and/or explosion do not breathe fumes. Use water spray to cool unopened containers.

**Hazardous combustion products** Carbon monoxide and carbon dioxide.

### 6. Accidental Release Measures

**Personal precautions** Wear appropriate protective equipment and clothing during clean-up. Keep unnecessary personnel away. Keep upwind. Keep out of low areas. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Local authorities should be advised if significant spillages cannot be contained.

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

**Methods for containment**

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements or confined areas. Dike the spilled material, where this is possible.

**Methods for cleaning up**

Use only non-sparking tools. All equipment used when handling the product must be grounded.

Large Spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Dike far ahead of spill for later disposal.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Collect in a non-combustible container for prompt disposal.

Never return spills in original containers for re-use. Clean surface thoroughly to remove residual contamination. Clean up in accordance with all applicable regulations.

J. T. Baker SOLUSORB® solvent adsorbent is recommended for spills of this product.

## 7. Handling and Storage

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**Handling**

DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. Wear appropriate personal protective equipment. Do not breathe mist or vapor. Do not get in eyes and avoid contact with skin and clothing. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling. See Section 8 of the MSDS for Personal Protective Equipment.

**Storage**

Keep away from food, drink and animal feedingstuffs. Keep out of the reach of children. Keep container tightly closed in a cool, well-ventilated place. Ground container and transfer equipment to eliminate static electric sparks. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of flammable liquids.

## 8. Exposure Controls / Personal Protection

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**ACGIH****Material****Type****Value**

PYRIDINE (110-86-1)

TWA

1.0000 ppm

**Occupational exposure limits****U.S. - OSHA****Material****Type****Value**

PYRIDINE (110-86-1)

PEL

5.0000 ppm  
15.0000 mg/m<sup>3</sup>**Engineering controls**

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Explosion proof exhaust ventilation should be used.

**Personal protective equipment****Eye / face protection**

Chemical goggles and face shield are recommended.

**Skin protection**

Wear appropriate chemical resistant clothing. Wear appropriate chemical resistant gloves.

**Respiratory protection**

Respirator type: Chemical respirator with organic vapor cartridge and full facepiece. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

**General hygiene considerations**

Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical & Chemical Properties

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<b>Appearance</b>	Colorless to Yellow Liquid.
<b>Color</b>	Colorless. Yellow.
<b>Odor</b>	Burnt Pungent.
<b>Odor threshold</b>	Not available.
<b>Physical state</b>	Liquid.
<b>Form</b>	Liquid.
<b>pH</b>	8.5 (0.2 M Solution)
<b>Melting point</b>	-43.6 °F (-41.6 °C)
<b>Freezing point</b>	-43.6 °F (-41.6 °C)
<b>Boiling point</b>	239 °F (115.2 °C)
<b>Flash point</b>	68 °F (20 °C) Closed Cup
<b>Evaporation rate</b>	Not available.
<b>Flammability limits in air, upper, % by volume</b>	12.4 %
<b>Flammability limits in air, lower, % by volume</b>	1.8 %
<b>Vapor pressure</b>	2.77306 kPa at 25°C
<b>Vapor density</b>	0.982
<b>Specific gravity</b>	0.9827
<b>Relative density</b>	Not available.
<b>Solubility (water)</b>	Miscible
<b>Partition coefficient (n-octanol/water)</b>	0.65
<b>Auto-ignition temperature</b>	899.6 °F (482 °C)
<b>Molecular weight</b>	79.1 g/mol
<b>Molecular formula</b>	C5-H5-N

## 10. Chemical Stability & Reactivity Information

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<b>Chemical stability</b>	Stable under normal temperature conditions.
<b>Conditions to avoid</b>	Heat, sparks, flames.
<b>Incompatible materials</b>	Strong oxidizing agents. Strong acids. Maleic anhydride. May attack some plastics, rubber and coatings.
<b>Hazardous decomposition products</b>	Carbon monoxide. Carbon Dioxide. Nitrogen oxides (NOx).
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.

## 11. Toxicological Information

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### Toxicological data

#### Product

PYRIDINE (110-86-1)

#### Test Results

Acute Dermal LD50 Rabbit: 1121 mg/kg

Acute Inhalation LC50 Rat: 4000 ppm 4.00 Hours

Acute Oral LD50 Rat: 891 mg/kg

#### Sensitization

Not a skin sensitizer.

#### Acute effects

Harmful if inhaled, absorbed through skin, or swallowed.

#### Local effects

Causes eye burns. Causes skin irritation. Mist or vapor extremely irritating to eyes and respiratory tract. Vapors may cause drowsiness and dizziness.

<b>Chronic effects</b>	Can cause liver damage. Can cause kidney damage. Organic solvents may be absorbed into the body by inhalation and ingestion and cause permanent damage to the nervous system, including the brain. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
<b>Carcinogenicity</b>	Not classifiable as to carcinogenicity to humans. Possible cancer hazard based on tests with laboratory animals. Risk of cancer cannot be excluded with prolonged exposure.
<b>ACGIH Carcinogens</b>	
PYRIDINE (CAS 110-86-1)	A3 Confirmed animal carcinogen with unknown relevance to humans.
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>	
PYRIDINE (CAS 110-86-1)	3 Not classifiable as to carcinogenicity to humans.
<b>Skin corrosion/irritation</b>	Causes skin irritation.
<b>Epidemiology</b>	No epidemiological data is available for this product.
<b>Mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Neurological effects</b>	High vapor/aerosol concentrations (attainable only at elevated temperatures) may cause central nervous system effects such as dizziness, drowsiness or headaches. Central and/or peripheral nervous system damage.
<b>Reproductive effects</b>	Contains no ingredient listed as toxic to reproduction
<b>Teratogenicity</b>	No data available to indicate product or any components present at greater than 0.1% may cause birth defects.
<b>Symptoms and target organs</b>	Severe eye irritation. Corneal damage. Moderate skin irritation. Upper respiratory tract irritation. Drowsiness and dizziness.

## 12. Ecological Information

### Ecotoxicological data

Product	Test Results
PYRIDINE (110-86-1)	LC50 Pink salmon ( <i>Oncorhynchus gorboscha</i> ): 1.1 mg/l 96.00 hours
<b>Ecotoxicity</b>	Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the environment.
<b>Environmental effects</b>	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
<b>Persistence and degradability</b>	The product is not readily biodegradable. The product is expected to be slowly biodegradable.
<b>Partition coefficient (n-octanol/water)</b>	0.65

## 13. Disposal Considerations

### Waste codes

#### US RCRA Hazardous Waste U List: Reference

PYRIDINE (CAS 110-86-1)	U196
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<b>Disposal instructions</b>	Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. All wastes must be handled in accordance with local, state and federal regulations.
<b>Contaminated packaging</b>	Since emptied containers retain product residue, follow label warnings even after container is emptied. Residual vapors may explode on ignition; do not cut, drill, grind, or weld on or near this container. Offer rinsed packaging material to local recycling facilities.

## 14. Transport Information

### DOT

#### Basic shipping requirements:

<b>UN number</b>	UN1282
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**Proper shipping name** Pyridine  
**Hazard class** 3  
**Packing group** II  
**Environmental hazards**  
**Marine pollutant** Yes  
**Additional information:**  
**Special provisions** IB2, T4, TP2  
**Basic shipping requirements:**  
**Labels required** 3  
**Additional information:**  
**Packaging exceptions** None  
**Packaging non bulk** 202  
**Packaging bulk** 242  
**Reportable quantity** 1000  
**ERG number** 129

**IATA**

**Basic shipping requirements:**  
**UN number** 1282  
**Proper shipping name** Pyridine  
**Hazard class** 3  
**Packing group** II  
**Environmental hazards**  
**Marine pollutant** Yes  
**Additional information:**  
**ERG code** 3L

**IMDG**

**Basic shipping requirements:**  
**UN number** 1282  
**Proper shipping name** PYRIDINE  
**Hazard class** 3  
**Packing group** II  
**Environmental hazards**  
**Marine pollutant** Yes



DOT



IATA



IMDG

**15. Regulatory Information**

**US federal regulations**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

All components are on the U.S. EPA TSCA Inventory List.

**US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration**

PYRIDINE (CAS 110-86-1) 1.0 %

**US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance**

PYRIDINE (CAS 110-86-1) Listed.

**CERCLA (Superfund) reportable quantity**

PYRIDINE: 1000.0000

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories**  
 Immediate Hazard - Yes  
 Delayed Hazard - Yes  
 Fire Hazard - Yes  
 Pressure Hazard - No  
 Reactivity Hazard - No

**Section 311 hazardous chemical**  
 Yes

**Inventory status**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**State regulations** WARNING: This product contains a chemical known to the State of California to cause cancer.

**US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance**

PYRIDINE (CAS 110-86-1) Listed.

**US - California Proposition 65 - CRT: Listed date/Carcinogenic substance**

PYRIDINE (CAS 110-86-1) Listed: May 17, 2002 Carcinogenic.

**US - New Jersey Community RTK (EHS Survey): Reportable threshold**

PYRIDINE (CAS 110-86-1) 500 LBS

**US - Pennsylvania RTK - Hazardous Substances: Listed substance**

PYRIDINE (CAS 110-86-1) Listed.

**Saf-T-Data**

Health: 3 - Severe (Cancer Causing)  
 Flammability: 3 - Severe (Flammable)  
 Reactivity: 1 - Slight  
 Contact: 3 - Severe  
 Lab Protective Equip: DB - GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER  
 Storage Color Code: R - Red (Flammable)

**16. Labeling Info****Label Hazard Warning**

DANGER

FLAMMABLE LIQUID AND VAPOR. Will be easily ignited by heat, spark or flames. Causes eye burns. Causes skin irritation. Mist or vapor extremely irritating to eyes and respiratory tract. Vapors may cause drowsiness and dizziness. Prolonged exposure may cause chronic effects.

**Label Precautions**

Keep away from heat, sparks and flame. Do not breathe the mist or vapor. Do not get in eyes and avoid contact with skin and clothing. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling. Keep container closed.

**Label First Aid**

Immediately flush eyes with plenty of water for at least 15 minutes. Immediately flush skin with plenty of water. If gas/fume/vapor/dust/mist from the material is inhaled, remove the affected person immediately to fresh air. Get medical attention immediately. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting without advice from poison control center. Do not use mouth-to-mouth method if victim ingested the substance. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

**17. Other Information**

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**NFPA ratings**

Health: 3  
Flammability: 3  
Instability: 0

**Disclaimer**

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**Issue date**

08-29-2011

**This data sheet contains changes from the previous version in section(s):**

Exposure Controls / Personal Protection: Respiratory protection