

SAFETY DATA SHEET

1. Identification

Product identifier: PYRIDINE

Other means of identification

Product No.: 7181, 7180, 3348, 9393

Recommended use and restriction on use

Recommended use: Not available.

Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company Name: Avantor Performance Materials, Inc.
Address: 3477 Corporate Parkway, Suite 200
Center Valley, PA 18034

Telephone: Customer Service: 855-282-6867

Fax:
Contact Person: Environmental Health & Safety
e-mail: info@avantormaterials.com

Emergency telephone number:

24 Hour Emergency: 908-859-2151

Chemtrec: 800-424-9300

2. Hazard(s) identification

Hazard classification

Physical hazards

Flammable liquids Category 2

Health hazards

Acute toxicity (Oral) Category 4

Acute toxicity (Dermal) Category 4

Acute toxicity (Inhalation - vapor) Category 4

Skin corrosion/irritation Category 2

Serious eye damage/eye irritation Category 1

Carcinogenicity Category 2

Specific target organ toxicity - single exposure Category 3

Specific target organ toxicity - repeated exposure Category 1

Environmental hazards

Acute hazards to the aquatic environment Category 2

Chronic hazards to the aquatic environment Category 2

Label elements

Hazard symbol:



Signal word: Danger

Hazard statement: Highly flammable liquid and vapor.
Harmful if swallowed, in contact with skin or if inhaled.
Causes skin irritation.
Causes serious eye damage.
Suspected of causing cancer.
Causes damage to organs through prolonged or repeated exposure.
Toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention: Keep away from heat/sparks/open flames/hot surfaces. No smoking. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area. Do not breathe dust/fume/gas/mist/vapors/spray. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid release to the environment.

Response: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. In case of fire: Use water spray, foam, dry powder or carbon dioxide for extinction. IF ON SKIN: Wash with plenty of soap and water.

Other hazards which do not result in GHS classification: Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

3. Composition/information on ingredients

Substances

Chemical identity	Common name and synonyms	CAS number	Content in percent (%)*
PYRIDINE		110-86-1	99 - 100%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance. Ensure that emergency personnel are aware of the material involved, and take precautions to protect themselves.

Ingestion:	Rinse mouth thoroughly. Call a physician or poison control center immediately. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Inhalation:	Move to fresh air. If breathing is difficult, give oxygen. If breathing stops, provide artificial respiration. Get medical attention immediately.
Skin contact:	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash contaminated clothing before reuse.
Eye contact:	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.

Most important symptoms/effects, acute and delayed

Symptoms:	Irritating to eyes, respiratory system and skin. Mist or vapor extremely irritating to eyes and respiratory tract. Narcotic effect. Exposure to high vapor concentrations may cause headache, nausea, confusion, drowsiness, convulsions and coma.
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Indication of immediate medical attention and special treatment needed

Treatment:	Treat symptomatically. Symptoms may be delayed.
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5. Fire-fighting measures

General fire hazards:	Highly flammable liquid and vapour. Can be ignited easily and burns vigorously. In case of fire and/or explosion do not breathe fumes.
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Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:	Water spray, foam, dry powder or carbon dioxide.
Unsuitable extinguishing media:	Avoid water in straight hose stream; will scatter and spread fire.

Specific hazards arising from the chemical:	Vapors may cause a flash fire or ignite explosively. Vapors may travel considerable distance to a source of ignition and flash back. Prevent buildup of vapors or gases to explosive concentrations. Heat may cause the containers to explode.
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Special protective equipment and precautions for firefighters

Special fire fighting procedures:	Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out. Water may be ineffective in fighting the fire. Fight fire from a protected location.
Special protective equipment for fire-fighters:	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Keep unauthorized personnel away. Use personal protective equipment. See Section 8 of the MSDS for Personal Protective Equipment.

Methods and material for containment and cleaning up:

Eliminate all ignition sources if safe to do so. Use clean non-sparking tools to collect absorbed material. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.

Notification Procedures:

Dike for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk. Inform authorities if large amounts are involved.

Environmental precautions:

Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling:

DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid contact with skin. Avoid contact with eyes. Take precautionary measures against static discharges. Use personal protective equipment as required. Do not breathe mist or vapor. Do not taste or swallow. Use only with adequate ventilation. Wash hands thoroughly after handling. See Section 8 of the MSDS for Personal Protective Equipment.

Conditions for safe storage, including any incompatibilities:

Keep away from food, drink and animal feeding stuffs. Keep out of 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

Control parameters

Occupational exposure limits

Chemical identity	Type	Exposure Limit values	Source
PYRIDINE	TWA	1 ppm	US. ACGIH Threshold Limit Values (2011)
	REL	5 ppm 15 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	5 ppm 15 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	5 ppm 15 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)

Appropriate engineering controls

No data available.

Individual protection measures, such as personal protective equipment

General information:

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. An eye wash and safety shower must be available in the immediate work area. Use explosion-proof ventilation equipment.

Eye/face protection:	Wear safety glasses with side shields (or goggles) and a face shield.
Skin protection	
Hand protection:	Chemical resistant gloves
Other:	Wear suitable protective clothing.
Respiratory protection:	In case of inadequate ventilation use suitable respirator.
Hygiene measures:	Provide eyewash station and safety shower. Observe good industrial hygiene practices. Do not eat, drink or smoke when using the product. Wash hands before breaks and immediately after handling the product. Do not get in eyes. Avoid contact with skin. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Wash contaminated clothing before reuse.

9. Physical and chemical properties

Appearance

Physical state:	Liquid
Form:	Liquid
Color:	Colorless to yellow
Odor:	Fish-like odor
Odor threshold:	No data available.
pH:	8.5 (0.2 molar aqueous solution)
Melting point/freezing point:	-41.6 °C
Initial boiling point and boiling range:	115 °C
Flash Point:	20 °C (Closed Cup)
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	12.4 %(V)
Flammability limit - lower (%):	1.8 %(V)
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	2.8 kPa (25 °C)
Vapor density:	0.982 AIR=1
Relative density:	0.98 (20 °C)
Solubility(ies)	
Solubility in water:	Miscible with water.
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	0.65
Auto-ignition temperature:	482 °C
Decomposition temperature:	No data available.
Viscosity:	No data available.
Other information	
Molecular weight:	79.1 g/mol (C ₅ H ₅ N)

10. Stability and reactivity

Reactivity:	No dangerous reaction known under conditions of normal use.
Chemical stability:	Material is stable under normal conditions.

Possibility of hazardous reactions:	Hazardous polymerization does not occur.
Conditions to avoid:	Heat, sparks, flames. Contact with incompatible materials.
Incompatible materials:	Strong oxidizing agents. Strong acids. May attack some plastics, rubber and coatings. Maleic Anhydride
Hazardous decomposition products:	Thermal decomposition may produce oxides of carbon and nitrogen.

11. Toxicological information

Information on likely routes of exposure

Ingestion:	Harmful if swallowed.
Inhalation:	Harmful if inhaled. Irritating to respiratory tract.
Skin contact:	Harmful in contact with skin. Causes skin irritation.
Eye contact:	Causes serious eye damage.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral	
Product:	LD 50 (Rat): 891 mg/kg
Dermal	
Product:	LD 50 (Rabbit): 1,121 mg/kg
Inhalation	
Product:	LC 50 (Rat, 4 h): 4,000 mg/l
Repeated dose toxicity	
Product:	No data available.

Skin corrosion/irritation	
Product:	Causes skin irritation.

Serious eye damage/eye irritation	
Product:	Causes serious eye damage.

Respiratory or skin sensitization	
Product:	Not a skin sensitizer.

Carcinogenicity	
Product:	Suspected of causing cancer.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):
No carcinogenic components identified

Germ cell mutagenicity

In vitro

Product: No mutagenic components identified

In vivo

Product: No mutagenic components identified

Reproductive toxicity

Product: No components toxic to reproduction

Specific target organ toxicity - single exposure

Product: Respiratory tract irritation. Narcotic effect.

Specific target organ toxicity - repeated exposure

Product: Liver. Kidneys.

Aspiration hazard

Product: Not classified

Other effects: None known.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

PYRIDINE

LC 50 (Pink salmon (*Oncorhynchus gorboscha*), 96 h): 1.1 mg/l Mortality
LC 50 (Carp (*Cyprinus carpio*), 96 h): 26 mg/l Mortality
LC 50 (Fathead minnow (*Pimephales promelas*), 96 h): 63.4 - 73.6 mg/l Mortality

Aquatic invertebrates

Product: No data available.

Specified substance(s):

PYRIDINE

EC 50 (Brine shrimp (*Artemia salina*), 24 h): 431.2 - 555.4 mg/l Intoxication
EC 50 (Water flea (*Daphnia magna*), 24 h): 495 mg/l Intoxication
LC 50 (Water flea (*Daphnia magna*), 48 h): 1,120 mg/l Mortality
LC 50 (Opossum shrimp (*Americamysis bahia*), 96 h): 208.65 - 258.8 mg/l Mortality

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Persistence and degradability

Biodegradation

Product: The product is not readily biodegradable.

BOD/COD ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration factor (BCF)

Product: No data available on bioaccumulation.

Partition coefficient n-octanol / water (log Kow)

Product: Log Kow: 0.65

Mobility in soil: The product is water soluble and may spread in water systems.

Other adverse effects: Toxic to aquatic life with long lasting effects.

13. Disposal considerations

Disposal instructions: Discharge, treatment, or disposal may be subject to national, state, or local laws. Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Contaminated packaging: 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.

14. Transport information

DOT

UN number:	UN 1282
UN proper shipping name:	Pyridine
Transport hazard class(es)	
Class(es):	3
Label(s):	3
Packing group:	II
Marine Pollutant:	No

IMDG

UN number:	UN 1282
UN proper shipping name:	PYRIDINE
Transport hazard class(es)	
Class(es):	3
Label(s):	3
EmS No.:	F-E, S-D
Packing group:	II
Marine Pollutant:	No

IATA

UN number:	UN 1282
Proper Shipping Name:	Pyridine
Transport hazard class(es):	
Class(es):	3
Label(s):	3
Marine Pollutant:	No
Packing group:	II

15. Regulatory information

US federal regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

PYRIDINE Reportable quantity: 1000 lbs.

Superfund amendments and reauthorization act of 1986 (SARA)

Hazard categories

Acute (Immediate) Chronic (Delayed) Fire Reactive Pressure Generating

SARA 302 Extremely hazardous substance

None present or none present in regulated quantities.

SARA 304 Emergency release notification

Chemical identity	RQ
PYRIDINE	1000 lbs.

SARA 311/312 Hazardous chemical

Chemical identity	Threshold Planning Quantity
PYRIDINE	500 lbs

SARA 313 (TRI reporting)

Chemical identity	Reporting threshold for other users	Reporting threshold for manufacturing and processing
PYRIDINE	10000 lbs	25000 lbs.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

US state regulations

US. California Proposition 65

PYRIDINE Carcinogenic.

US. New Jersey Worker and Community Right-to-Know Act

PYRIDINE Listed

US. Massachusetts RTK - Substance List

PYRIDINE Listed

US. Pennsylvania RTK - Hazardous Substances

PYRIDINE Listed

US. Rhode Island RTK

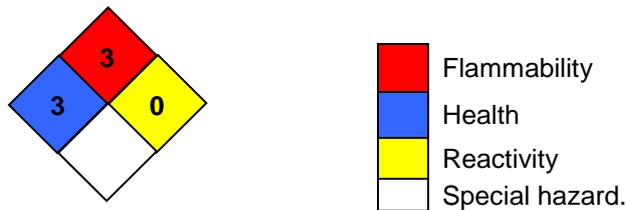
PYRIDINE Listed

Inventory Status:

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Japan ISHL Listing:	On or in compliance with the inventory
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

16. Other information, including date of preparation or last revision

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

Issue date:	06-24-2014
Revision date:	No data available.
Version #:	1.0
Further information:	No data available.

Disclaimer:

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