

PATHOGEN SAFETY DATA SHEET

Pseudomonas aeruginosa

CHARACTERISTICS	
Morphology	Motile gram-negative aerobic bacteria, plump-shaped rods, with polar flagella which have an important role in pathogenicity, non-spore forming
Disease	Pneumonia, bacteremia, wound infections, urinary tract infections, swimmer's ear, eye infections related to use of contact lenses.
Zoonosis	none

HEALTH HAZARDS	
Host Range	Humans, Animals, Plants
Modes of Transmission	Direct contact by inhalation of aerosols. Direct contact by aspiration of contaminated water (tap or distilled). Direct contact by exposure of wounds to contaminated materials. Indirectly by contact of mucous membranes with discharges from infected conjunctivae or infected respiratory secretions.
Signs and Symptoms	Conjunctivitis, Upper Respiratory Infections, Pneumonia, Urinary Tract Infections, Wound Infection.
Infectious Dose	unknown
Incubation Period	Variable depending on infection. Eye infection is 24 to 72 hours.

MEDICAL PRECAUTIONS/TREATMENT	
Prophylaxis	Antibiotic Prophylaxis
Vaccines	None available
Treatment	Aggressive antibiotic therapy for severe infections; Local application of antibiotic ointment or drops for skin or eye infections. Pseudomonas aeruginosa is intrinsically resistant to many common antibiotics.
Surveillance	Bacteriological identification of infection.
MSU Requirements	Report any exposures

LABORATORY HAZARDS	
Laboratory Acquired Infections (LAIs)	None reported to date. However, this is an opportunistic pathogen and there is the possibility of severe to fatal infection in the immunocompromised.
Sources	Clinical Specimen: Respiratory secretions, wound exudates, blood, urine. Environmental Reservoir: Water, infected solutions (IV, disinfectants, soap). Cultures, frozen stocks, other samples described in IBC protocol.

SUPPLEMENTAL REFERENCES	
Canadian MSDS:	http://www.phac-aspc.gc.ca/lab-bio/res/psds-ftss/index-eng.php
BMBL	https://www.cdc.gov/labs/BMBL.html
CDC	https://www.cdc.gov/hai/organisms/pseudomonas.html
NIH Guidelines	https://osp.od.nih.gov/wp-content/uploads/NIH_Guidelines.pdf

RISK GROUP & CONTAINMENT REQUIREMENTS	
Risk Group 2	Agents that are associated with human disease which is rarely serious and for which preventive or therapeutic interventions are often available.
BSL2	For all procedures involving suspected or known infectious specimen or cultures.
ABSL2	For all procedures utilizing infected animals.

SPILL PROCEDURES	
Small	Notify others working in the lab. Remove PPE and don new PPE. Cover area of the spill with absorbent material and add fresh 1:10 bleach:water. Allow 20 minutes (or as directed) of contact time. After 20 minutes, cleanup and dispose of materials.
Large	<ul style="list-style-type: none"> Immediately notify all personnel in the lab and clear all personnel from the area. Remove any contaminated PPE/clothing and leave the lab. Secure the area by locking doors, posting signage and guarding the area to keep people out of the space. For assistance, contact MSU's Biosafety Officer (406-994-6733) or Safety and Risk Management (406-994-2711).

EXPOSURE PROCEDURES	
Mucous membrane	Flush eyes, mouth, or nose for 5 minutes at eyewash station.
Other Exposures	Wash area with soap and water for 5 minutes.
Reporting	Immediately report incident to supervisor, complete a First Report of Injury form, and submit to Safety and Risk Management.
Medical Follow-up	During business hours: Bridger Occupational Health 3406 Laramie Drive Weekdays 8am -6pm. Weekends 9am-5pm After business hours: Bozeman Deaconess Hospital Emergency Room 915 Highland Blvd

VIABILITY	
Disinfection	Susceptible to 1:10 bleach:water, 70 % ethanol and 2 % glutaraldehyde, 2 % formaldehyde. Alcohol contained disinfectants recommended for resistant strains.
Inactivation	Inactivated by moist heat (15 minutes at 121° C) and dry heat (1 hour at 160-170° C).
Survival Outside Host	Survives for several months in water with minimal nutrients.

PERSONAL PROTECTIVE EQUIPMENT (PPE)	
Minimum PPE Requirements	Lab coat, disposable gloves, safety glasses, closed toed shoes, long pants
Additional Precautions	Additional PPE may be required depending on lab specific SOPs and IBC Protocol.