

PATHOGEN SAFETY DATA SHEET

Salmonella enterica spp.

Including serotypes: Typhi, Paratyphi, Enteritidis, Typhimurium and Choleraesuis

CHARACTERISTICS	
Morphology	Member of the Enterobacteriaceae family. Is a facultative anaerobe and is a gram negative motile rod shaped bacteria.
Disease	Gastroenteritis, bacteremia, enteric fever, and asymptomatic carriers.
Zoonosis	Yes - contact with infected animals and feces.

HEALTH HAZARDS	
Host Range	Humans and Animals.
Modes of Transmission	Contaminated food and water, contact with infected feces, infected animals or humans.
Signs and Symptoms	Gastroenteritis (food poisoning), fever, abdominal pain, myalgias, malaise, diarrhea, or constipation.
Infectious Dose	1000 to 100000
Incubation Period	Ranges from 5 to 72 hours depending on the incubation period.

MEDICAL PRECAUTIONS/TREATMENT	
Prophylaxis	None available
Vaccines	Three vaccines (2 parenteral and 1 oral) are licensed for use in the US and should be considered for those working with serotype Typhi
Treatment	Chloramphenicol, ciproflaxin, amoxicillin, cotrimoxazole, trimethoprim-sulfonamid, cephalosporins and norfloxacin.
Surveillance	Monitor for symptoms of infection
MSU Requirements	Report any exposures

LABORATORY HAZARDS	
Laboratory Acquired Infections (LAIs)	64 cases and 2 deaths were reported from 1979 to 2004.
Sources	Blood, urine, feces, food and environmental materials. 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/salmonella/index.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 % gluteraldehyde
Inactivation	Inactivated by moist heat (15 minutes at 121° C) and dry heat (1 hour at 170° C).
Survival Outside Host	Can survive in cattle slurry for 19-60 days, cattle manure for 48 days, soil for 231 days, and water for up to 152 days. Survive on fingertips for 80 minutes.

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.