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Office of  
Laboratory  
Security

MSDS

## MATERIAL SAFETY DATA SHEET - INFECTIOUS SUBSTANCES

### SECTION I - INFECTIOUS AGENT

**NAME:** *Escherichia coli*, enteroinvasive

**SYNONYM OR CROSS REFERENCE:** EIEC, bacillary dysentery

**CHARACTERISTICS:** Gram negative rod; motile, aerobic; serotyping

### SECTION II - HEALTH HAZARD

**PATHOGENICITY:** Disease localized primarily in the colon (invasion of epithelial cells of colon, similar to dysentery; shigella-like disease); fever; mucoid, occasionally bloody diarrhea; generally self-limiting; most severe form may result in hypotension with severe toxemia; sometimes associated with food poisoning

**EPIDEMIOLOGY:** Usually sporadic, particularly in under-developed countries; may cause common source outbreaks

**HOST RANGE:** Human

**INFECTIOUS DOSE:** Appears to have low infectious dose, may be similar to that of *Shigella* spp., 10 organisms by ingestion

**MODE OF TRANSMISSION:** Fecal-oral route; fecal contamination of water, food or fomites; poor sanitation and hygiene

**INCUBATION PERIOD:** 12-72 hours

**COMMUNICABILITY:** Communicable during duration of fecal excretion (several weeks)

### SECTION III - DISSEMINATION

**RESERVOIR:** Infected persons

**ZOONOSIS:** No

**VECTORS:** None

### SECTION IV - VIABILITY

**DRUG SUSCEPTIBILITY:** Sensitive to ampicillin

**SUSCEPTIBILITY TO DISINFECTANTS:** Susceptible to many disinfectants - 1% sodium hypochlorite, 70% ethanol, glutaraldehyde, iodines, phenolics,

formaldehyde

**PHYSICAL INACTIVATION:** Inactivated by moist heat (121° C for at least 15 min) and dry heat (160-170° C for at least 1 hour)

**SURVIVAL OUTSIDE HOST:** Survives well in contaminated feces, food, soil or water

## SECTION V - MEDICAL

**SURVEILLANCE:** Monitor for symptoms; confirm by examination of stool specimens; demonstration of invasiveness of isolates in tissue culture

**FIRST AID/TREATMENT:** Therapy generally not necessary as illness is short-lived; electrolyte fluid therapy if excessive diarrhea; antibiotic therapy in severe cases

**IMMUNIZATION:** None

**PROPHYLAXIS:** Not usually administered

## SECTION VI - LABORATORY HAZARDS

**LABORATORY-ACQUIRED INFECTIONS:** 3 reported cases of laboratory infections with *E. coli*

**SOURCES/SPECIMENS:** Feces; contaminated food, water, fomites

**PRIMARY HAZARDS:** Ingestion

**SPECIAL HAZARDS:** None

## SECTION VII - RECOMMENDED PRECAUTIONS

**CONTAINMENT REQUIREMENTS:** Biosafety level 2 practices containment equipment and facilities for activities involving cultures and infected clinical materials

**PROTECTIVE CLOTHING:** Laboratory coat; gloves when contact with infectious materials is unavoidable

**OTHER PRECAUTIONS:** Good personal hygiene and frequent handwashing

## SECTION VIII - HANDLING INFORMATION

**SPILLS:** Allow aerosols to settle; wearing protective clothing, gently cover spill with absorbent paper towel and apply 1% sodium hypochlorite, starting at perimeter and working towards the centre; allow sufficient contact time (30 min) before clean up

**DISPOSAL:** Decontaminate before disposal; steam sterilization, chemical disinfection

**STORAGE:** In sealed containers that are appropriately labelled

## SECTION IX - MISCELLANEOUS INFORMATION

**Date prepared:** January, 2000

**Prepared by:** Office of Laboratory Security, PHAC

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