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Office of
Laboratory
Security

MSDS

MATERIAL SAFETY DATA SHEET - INFECTIOUS SUBSTANCES**SECTION I - INFECTIOUS AGENT****NAME:** *Clostridium difficile***SYNONYM OR CROSS REFERENCE:** N/A**CHARACTERISTICS:** Gram positive rod, anaerobic, motile, subterminal spores, produces a cytotoxin and enterotoxin**SECTION II - HEALTH HAZARD****PATHOGENICITY:** Opportunistic pathogen, broad-spectrum antibiotic therapy eliminates competing gut flora, allowing the overgrowth of *C. difficile*; important cause of antibiotic-associated diarrhea and pseudomembranous colitis; diarrhea in cancer patients receiving chemotherapy; symptoms range from mild diarrhea to severe colitis (possibly fatal)**EPIDEMIOLOGY:** Worldwide; 2-3% of adults are asymptomatic carriers ; 50% of healthy neonates (<1 year old) are carriers; nosocomial transmission increasingly important**HOST RANGE:** Humans and other animals**INFECTIOUS DOSE:** Not known**MODE OF TRANSMISSION:** Fecal-oral contact; evidence for transmission via fomites and hands exists**INCUBATION PERIOD:** Not known**COMMUNICABILITY:** May be transmitted from person to person**SECTION III - DISSEMINATION****RESERVOIR:** Soil, water, hay, sand; intestinal tract of humans and other animals**ZOONOSIS:** None**VECTORS:** None**SECTION IV - VIABILITY****DRUG SUSCEPTIBILITY:** Susceptible to metronidazole and vancomycin**DRUG RESISTANCE:** Metronidazole and vancomycin-resistant strains have

been reported

SUSCEPTIBILITY TO DISINFECTANTS: Spores are fairly resistant; moderate susceptibility to 1% sodium hypochlorite; susceptible to high level disinfectants (>2% glutaraldehyde) with prolonged contact time

PHYSICAL INACTIVATION: Spores are fairly resistant to heat (spores destroyed by moist heat - 121°C for at least 15 min)

SURVIVAL OUTSIDE HOST: Spores can survive for long periods outside of host

SECTION V - MEDICAL

SURVEILLANCE: Monitor for symptoms; recovery of *C. difficile* organisms and/or toxin from stool samples

FIRST AID/TREATMENT: Antibiotic therapy should be stopped; oral therapy with metronidazole or vancomycin

IMMUNIZATION: None

PROPHYLAXIS: None

SECTION VI - LABORATORY HAZARDS

LABORATORY-ACQUIRED INFECTIONS: 1 reported case of a laboratory-acquired infection from *C. difficile*

SOURCES/SPECIMENS: Clinical specimens - feces

PRIMARY HAZARDS: Injuries from contaminated sharp instruments

SPECIAL HAZARDS: Not known

SECTION VII - RECOMMENDED PRECAUTIONS

CONTAINMENT REQUIREMENTS: Biosafety level 2 practices, containment equipment and facilities for activities involving clinical specimens and cultures

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

OTHER PRECAUTIONS: None

SECTION VIII - HANDLING INFORMATION

SPILLS: Allow aerosols to settle; wear protective clothing; gently cover spill with paper towels and apply a suitable disinfectant (high level or 1% sodium hypochlorite), starting at perimeter and working towards the centre; allow sufficient contact time before clean up

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

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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Last Updated: 2001-01-23



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