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Office of  
Laboratory  
Security

MSDS

**MATERIAL SAFETY DATA SHEET - INFECTIOUS SUBSTANCES****SECTION I - INFECTIOUS AGENT****NAME:** *Bacillus cereus***SYNONYM OR CROSS REFERENCE:** *Bacillus cereus* food poisoning**CHARACTERISTICS:** Large (1 x 3-4 µm), aerobic, gram-positive rod; spore forming; motile; produces heat stable and heat labile toxins**SECTION II - HEALTH HAZARD****PATHOGENICITY:** Opportunistic pathogen; intoxication characterized by two forms: an emetic form with severe nausea and vomiting and a diarrheal form with abdominal cramps and diarrhea; both forms are usually mild and self-limiting (24 hrs); immunocompromised individuals are susceptible to bacteremia, endocarditis, meningitis, pneumonia; also associated with posttraumatic endophthalmitis (ocular infection - rare)**EPIDEMIOLOGY:** Worldwide; common cause of foodborne disease, especially in Europe**HOST RANGE:** Humans**INFECTIOUS DOSE:** Greater than  $10^6$  organisms by ingestion ( $>10^5$  organisms/g of food)**MODE OF TRANSMISSION:** Ingestion of foods kept at ambient conditions after cooking; emetic form frequently associated with cooked rice**INCUBATION PERIOD:** Emetic form 1-6 hours, average 4 hours; diarrheal form 6-24 hours, average 17 hours**COMMUNICABILITY:** Not communicable from person to person**SECTION III - DISSEMINATION****RESERVOIR:** Ubiquitous organism of the soil; commonly found in low levels in raw, dried and processed foods**ZOONOSIS:** None**VECTORS:** None**SECTION IV - VIABILITY****DRUG SUSCEPTIBILITY:** Sensitive to chloramphenicol, aminoglycosides,

vancomycin, clindamycin, erythromycin

**DRUG RESISTANCE:** Resistant to penicillin, ampicillin, cephalosporins, trimethoprim

**SUSCEPTIBILITY TO DISINFECTANTS:** Spores are relatively resistant; inactivated by 2% glutaraldehyde, 5% sodium hypochlorite; prolonged contact times required

**PHYSICAL INACTIVATION:** Spores destroyed by heating at 100°C for 10 min; ionizing radiation destroys spores with 540 krad

**SURVIVAL OUTSIDE HOST:** Spores are relatively resistant to heat and dessication; survive cooking

### **SECTION V - MEDICAL**

**SURVEILLANCE:** Monitor for symptoms and confirm by identification of organism in suspected food and faeces of patients

**FIRST AID/TREATMENT:** Supportive therapy

**IMMUNIZATION:** None available

**PROPHYLAXIS:** None available

### **SECTION VI - LABORATORY HAZARDS**

**LABORATORY-ACQUIRED INFECTIONS:** None reported to date

**SOURCES/SPECIMENS:** Contaminated food sources, stool

**PRIMARY HAZARDS:** Ingestion of contaminated material

**SPECIAL HAZARDS:** None

### **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 skin 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 5% sodium hypochlorite starting at the perimeter and working towards the centre; allow sufficient contact time before clean up

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

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

### **SECTION IX - MISCELLANEOUS INFORMATION**

**Date prepared:** November 1999

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

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