The University of Texas at Tyler
Environmental Health and Safety
BIOLOGICAL AGENT REFERENCE SHEET

Characteristics	
Risk Group	2 - Agents that are associated with human disease which is rarely serious and for which preventive or therapeutic interventions are often available.
Agent Type	Biohazard
Description	Bacillis cerus is a Gram-positive rod. It is an opportunistic, spore forming, facultative anaerobe and motile using endospores. They can be found in colonies up to 2-7mm. The bacteria grows between 10 and 45 degrees celcius. This bacteria can produce five enterotoxins and one emetic toxic. This bacteria is responsible for acute food poisoning lasting 24-48 hours and is sometimes incorrectly identified as *B.* thuringiensis and *B.* anthracis. Symptoms include fever vomiting, and possible nausea, malaise and diarrhea. B. cereus has been known to cause wound infections, bacteremia, specticaemia, meningitis, pneumonia, central nervous sysytem infections, endocarditis, pericarditis, respiratory infections and peripheral infections. At risk groups include immunocompromised individuals, neonates, and patients in the ER. No laboratory aquired infections were reported. ref: Bacillis cereus. StatPearls. NCBI; https://www.canada.ca/en/public-health/services/laboratory-biosafety-biosecurity/pathogen-safety-data-sheets-risk-assessment/bacillus-cereus.html; https://sp.ehs.cornell.edu/lab-research-safety/bios/bars/Documents/BIO_BARS_Bacillus_cereus.pdf
Host Range	Humans and animals; immunocompromised, IV drug users and neonates
Exposure route	Injestion of improperly handled food; not communicable
Incubation period	1-16 hours

Laboratory Hazards	
High Energy	Centrifuge, sonication

Sharps	Broken glass, needles
Aerosols	Pipetting, shaking incubators, liquid culturing outside BSL II
Equipment	Any exposed contaminant
Exposed body	Skin, mucous membranes, ingestion, inhalation
Notes	No laboratory aquired infections to date; resistant to penicillin, ampicillin, cephalosporins and trimethoprim.

Laboratory Handling Guidelines	
Biosafety Level	2 - refer to Biosafety Manual; contact EH&S for a copy
Training	EH&S Biosafety Training; Lab specific training
Engineering controls	use in BSL II only
PPE	Eye protection, gloves and lab coat
Waste	Biohazard - put in red biohazard bins

Agent Viability	
Disinfection	Gluteraldehyde; spores killed with 1% sodium hypochlorite (over 10-30 minutes)
Survival outside host	The bacteria can survive in soil and on vegetation
Engineering controls	BSC if working with liquids; lids while working with high energy equipment
PPE	Eye protection, gloves, long sleeve or lab coat
Waste	Biohazard - put in red biohazard bins

Exposure and Spill procedures	
Mucous membranes	Wash for 15 minutes with emergency eyewash
Skin contact	Wash with soap and water for a minimum of 30 second for bare skin contact. Wash for 15 minutes with broken skin using soap and water.
Minor (small) spills	Notify all persons present in the area. Allow aerosols to settle. While wearing protective clothing, gently cover the spill with absorbent paper towel and apply appropriate disinfectant, starting at perimeter and working towards the centre. Allow sufficient contact time before clean up.
Major (large) spills	Contact EH&S immediately; after-hours contact University Police
Waste	Decontaminate all wastes before disposal by incineration, chemical disinfection or steam sterilization

References
https://www.canada.ca/en/public-health/services/laboratory-biosafety-biosecurity/pathogen-safety-data-sheets-risk-assessment/bacillus-cereus.html
https://sp.ehs.cornell.edu/lab-research-safety/bios/bars/Documents/BIO_BARS_Bacillus_cereus.pdf