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

Characteristics	
Risk Group	1 - Agents that are not associated with disease in healthy adult humans. These agents represent no or little risk to an individual and no or little risk to the community.
Agent Type	Biohazard
Description	Bacillius subtilis is a model organism for prokaryotic cell differentation and development. B. subtilis is a Gram-positive, rod-shaped, semi-mobile, spore-forming facultative anaerobic bacterium. As such it can survive in unbiquitous environment for long periods including soil and intestinal tracts of animals and insects. The bacterium has been known to cause bacteremia and sepsis in a small number of cases. ref: Bacillus subtilis. Genome. NCBI; Bacillus subtilis: from soil bacterium to super-secreting cell factory. BMC. 2013;
Host Range	Humans; animals and insects
Exposure route	Fecal to oral, inhalation, contact on broken skin
Incubation period	unknown

Laboratory Hazards	
High Energy	Centrifugation, sonication, vortexing
Sharps	Needles, broken glass

Aerosols	Shaking, liquid culturing, pipetting, coughing, sneezing
Equipment	
Exposed body	skin, eyes, mucous membranes
Notes	

Laboratory Handling Guidelines	
Biosafety Level	1 - refer to Biosafety Manual; contact EH&S for a copy
Training	EH&S Biosafety Training; Lab specific training
Engineering controls	recommended use in BSC II
PPE	Eye protection, gloves and lab coat
Waste	Biohazard - put in red biohazard bins

Agent Viability	
Disinfection	10% bleach, 70% ethanol
Survival outside host	The bacterium can survive in multiple environments for long periods of time.
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	flush eyes, nose, mouth/throat for 15 minutes
Skin contact	Wash with soap and water for a minimum of 30 second for bare skin contact; for broken skin wash with soap and water for 15 minutes
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
UT Tyler Biological Safety Program

ref: Bacillus subtilis. Genome. NCBI; Bacillus subtilis: from soil bacterium to super-secreting cell factory. BMC. 2013;