

Risk Groups and Biosafety Containment Fact Sheet

Risk Group (NIH Guidelines)	Biosafety Containment Level	Examples
<p>Risk Group 1: Agents are NOT associated with disease in healthy adult humans. <i>(Low risk)</i></p>	<p>BSL-1</p> <ul style="list-style-type: none"> • Work is done on open bench tops and special containment equipment is not required • Standard microbiological practices are observed 	<ul style="list-style-type: none"> • Escherichia coli; • K12 derivatives (DH5a, JH109, pBluescript, psi2)
<p>Risk Group 2: Agents are associated with human disease which is rarely serious. There are often preventive or therapeutic interventions available. <i>(Moderate risk)</i></p>	<p>BSL-2 All BSL-1 containment and practices plus the following:</p> <ul style="list-style-type: none"> • Laboratory access is restricted when experimental work is in progress • Personnel have specific training in handling of agents • Biological safety cabinets (BSC) or other physical containment devices are used for potential aerosol generation procedures • Biohazard signs must be posted • Specific PPE (personnel protective equipment) and entrance requirements 	<ul style="list-style-type: none"> • Adenovirus all types; human • All human blood-contaminated specimens: HIV/SIV infected animals Human cell lines eg. HEK 293 • Herpes Simplex Virus • Usutu Virus • Zika Virus
<p>Risk Group 3: Agents are associated with serious or lethal human disease for which preventive or therapeutic interventions MAY be available. <i>(High risk)</i></p>	<p>BSL-3 NO current facilities exist to accommodate Risk Group 3 agents at Baylor University.</p>	<ul style="list-style-type: none"> • Bartonella • Yellow Fever • West Nile Fever • Retroviruses
<p>Risk Group 4: Agents are likely to cause serious or lethal human disease for which preventive or therapeutic interventions are NOT USUALLY available. <i>(Extreme risk)</i></p>	<p>BSL-4 NO current facilities exist to accommodate Risk Group 4 agents at Baylor University.</p>	<ul style="list-style-type: none"> • Arenaviruses • Filoviruses

Risk Group and Biosafety Containment Level for Animal, Plant, or rDNA not related to risk in Humans

Risk Group (NIH Guidelines)	Biosafety Containment Level	Examples
<p>Risk Group 1: Experiments that do not pose a risk to the environment – release would not result in surviving in the environment. (Low risk)</p>	<p>BSL-1</p> <ul style="list-style-type: none"> • Work is done on open bench tops and special containment equipment is not required • Standard microbiological practices are observed 	<ul style="list-style-type: none"> • Escherichia coli; K12 derivatives (DH5a, JH109, pBluescript, psi2) • <i>Rhizobium</i>, <i>Agrobacterium</i>
<p>Risk Group 2: Experiments that involve work agents or transgenics that if released would be viable in the environment but would have a negligible impact or could be readily managed. (Moderate risk)</p>	<p>BSL-2 All BSL-1 containment and practices plus the following:</p> <ul style="list-style-type: none"> • Laboratory/Facility/Greenhouse access is restricted when experimental work is in progress • Personnel have specific training in handling of agents • Biological safety cabinets (BSC) or other physical containment devices are used for potential aerosol generation procedures • Biohazard signs must be posted • Specific PPE (personnel protective equipment) and entrance requirements 	<ul style="list-style-type: none"> • rDNA work on plants that could become established if released • Potentially harmful microorganisms to other animals or plants but that are manageable • Exotics that pose no potential harm to managed or natural ecosystems
<p>Risk Group 3: Experiments that a release outside the lab would have significant detrimental impact on the environment. (High risk)</p>	<p>BSL-3 NO current facilities exist to accommodate risk group 3 agents at Baylor University.</p>	<ul style="list-style-type: none"> • Exotic infectious agents capable of causing serious environmental harm • Plants containing genes from exotic infectious agents
<p>Risk Group 4: Experiments with exotics that are serious pathogens of major US crops and agriculture and create devastating impact on the environment. (Extreme risk)</p>	<p>BSL-4 NO current facilities exist to accommodate risk group 4 agents at Baylor University.</p>	