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| **CHARACTERISTICS** | |
| Morphology | Gram negative proteobacteria, pleomorphic, spore forming and is an obligate intracellular pathogen. |
| Disease | *C. burnetii* is the causative agent of Q. fever. Infection begins in the lung alveoli. It does not normally cause disease in its animal hosts, but can cause miscarriage in livestock. |
| Zoonosis | Yes. |

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| **HEALTH HAZARDS** | |
| Host Range | Humans and many different wild and domestic animals. |
| Modes of Transmission | Occurs mainly via inhalation of contaminated aerosols from amniotic fluid, placenta, or contaminated wool from farm animals, through direct or indirect contact with infected animals and their dried excreta, contaminated hides, straw, fertilizer, and laundry of exposed persons. |
| Signs and Symptoms | Acute Q fever: Presentation varies considerably; typically self-limited flu-like illness, atypical pneumonia, and hepatitis. Chronic Q fever: endocarditis, characterized by fever, hepatitis, weight loss, stroke, or heart failure. |
| Infectious Dose | Approximately 1-10 organisms. |
| Incubation Period | 13-28 days if acquired through respiratory route. 24-48 hours in people who have accidently inoculated themselves. |

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| **MEDICAL PRECAUTIONS/TREATMENT** | |
| Prophylaxis | None. |
| Vaccines | Q-vax vaccine is used in Australia. |
| Treatment | Doxycycline, hydroxychloroquine. |
| Surveillance | Presence of clinical symptoms; direct detection of antigen; serological tests. |
| MSU Requirements | Report any exposures. |

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| **LABORATORY HAZARDS** | |
| Laboratory Acquired Infections (LAIs) | Accounted for the highest number of rickettsia laboratory infections. 278 cases were reported up to 1976 with 1 death. |
| Sources | Infected arthropods, blood, urine, feces, milk, yolk sac suspensions, contaminated laundry and clothing, naturally or experimentally infected animals, and tissues of humans or other hosts. |

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| **RISK GROUP & CONTAINMENT REQUIREMENTS** | |
| Risk Group 3 | Agents are associated with serious or lethal human disease for which preventive or therapeutic interventions may be available. |
| BSL3 | For all procedures involving suspected or known infectious specimen or cultures. |
| ABSL3 | For all procedures utilizing infected animals infected with *Coxiella burnetii*. |

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| **VIABILITY** | |
| Disinfection | Susceptible to 5 % Micro-Chem, 70 % ethanol, and 10 % formalin. |
| Inactivation | Inactivated by moist heat (1 hour at 121oC) and dry heat (1 hour at 160-170oC). |
| Survival Outside Host | Survives in soil, contaminated buildings, food and fomites for years. |

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| **SUPPLEMENTAL REFERENCES** | |
| BMBL | <https://www.cdc.gov/labs/BMBL.html> |
| CDC | http://www.cdc.gov/qfever/ |
| NIH Guidelines | <https://osp.od.nih.gov/wp-content/uploads/NIH_Guidelines.pdf> |
| Canada PSDS | <http://www.phac-aspc.gc.ca/lab-bio/res/psds-ftss/index-eng.php> |

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| **SPILL PROCEDURES** | |
| Small | Notify others working in the lab. Remove and don new PPE. Cover area of the spill with absorbent material and add 5 % Micro-Chem. Allow 30 minutes of contact time. After 30 minutes and then cleanup and dispose of materials. |
| Large | * Immediately notify all personnel in the lab and clear all personnel from the area. Remove any contaminated PPE/clothing and leave the lab. * Secure the area by locking doors, posting signage and guarding the area to keep people out of the space.   For assistance, contact MSU's Biosafety Officer (406-994-6733) or Safety and Risk Management (406-994-2711). |

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| **EXPOSURE PROCEDURES** | |
| Mucous membrane | Flush eyes, mouth, or nose for 5 minutes at eyewash station. |
| Other Exposures | Wash area with soap and water for 5 minutes. |
| Reporting | Immediately report incident to supervisor, complete a [First Report of Injury](https://firstreportinjury.mus.edu/) form, and submit to Safety and Risk Management. |
| Medical Follow-up | **During business hours:**  Bridger Occupational Health 3400 Laramie Drive Weekdays 8am -6pm. Weekends 9am-5pm  406-577-7674  **After business hours:**  Bozeman Deaconess Hospital Emergency Room  915 Highland Blvd |

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| **PERSONAL PROTECTIVE EQUIPMENT (PPE)** | |
| Minimum PPE Requirements | Socks, scrubs and shoes; coveralls with attached booties; 2 sets of nitriles gloves; outer booties; and PAPR prior to working with *Coxiella burnetii*. |
| Additional Precautions | Follow all JRL SOPs, policies, and procedures. |