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| **CHARACTERISTICS** |
| Morphology | Gram-positive cocci, usually occurs in clusters, nonspore forming, non-motile, coagulase positive, facultative anaerobes. |
| Disease | Toxic shock syndrome, food poisoning, intoxication, impetigo. |
| Zoonosis | Yes, indirect and direct contact with infected animals, especially cows. |

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| **HEALTH HAZARDS** |
| Host Range | Humans and animals. |
| Modes of Transmission | Ingestion of food containing enterotoxins, contact with nasal carriers, contact with draining lesions or purulent discharges, also spread by person-to-person contact; Indirectly by contact with fomites, Indirectly or directly by contact with infected animals. |
| Signs and Symptoms | Accidental ingestion: Violent onset of severe nausea, cramps, vomiting, and diarrhea if preformed enterotoxin is present. Surface infections: Impetigo, follicutis, abscesses, boils, infected lacerations. Systemic infections: onset of fever, headache, myalgia, can progress to endocarditis, meningitis, septic arthritis, pneumonia, osteomyelitis, sepsis. |
| Infectious Dose | Virulence varies for different strains. |
| Incubation Period | 30 minutes to 8 hours when consuming contaminated food with enterotoxin. Otherwise, typically 4 to 10 days. Disease may not occur until several months after colonization of mucosal surfaces. |

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| **MEDICAL PRECAUTIONS/TREATMENT** |
| Prophylaxis | Hand-hygiene; Elimination of nasal carriage by using topical mupirocin. Mupirocin also eliminates transient hand carriage by eliminating the mucosal reservoir. |
| Vaccines | None. |
| Treatment | Incision and drainage for localized skin infections; antibiotic therapy for severe infections; Many strains resistant to antibiotics; Sensitivity must be determined for each strain. |
| Surveillance | Monitor for symptoms. |
| MSU Requirements | Report any exposures. |

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| **LABORATORY HAZARDS** |
| Laboratory Acquired Infections (LAIs)  | 29 reported cases up to 1973 with 1 death. Most common cause of laboratory infection was accidental self-exposure via the mucous membranes by touching contaminated hands to face or eyes. |
| Sources | Contaminated food, blood, abscesses, lesion exudates, CFS, respiratory specimen, feces, and urine. Cultures, frozen stocks, other samples described in IBC protocol. |

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| **RISK GROUP & CONTAINMENT REQUIREMENTS** |
| Risk Group 2 | Agents that are associated with human disease which is rarely serious and for which preventive or therapeutic interventions are often available. |
| BSL2 | For all procedures involving suspected or known infectious specimen or cultures. |
| ABSL2 | For all procedures utilizing infected animals. |

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| **VIABILITY** |
| Disinfection | Susceptible to 1:10 bleach:water, 70 % ethanol and 2 % gluteraldehyde, chlorohexadine, formaldehyde, and 0.25 % benzalkonium chloride. |
| Inactivation | Inactivated by moist heat (1 hour at 121oC) and dry heat (1 hour at 170oC). |
| Survival Outside Host | Carcass and organs – 42 days; Skin – 30 minutes to 38 days; meat products – 60 days; floor – less than 7 days; glassware – 46 hours; sunlight – 17 days; UV light – 7 hours. |

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| **SUPPLEMENTAL REFERENCES** |
| BMBL | <https://www.cdc.gov/labs/BMBL.html>  |
| NIH Guidelines | <https://osp.od.nih.gov/wp-content/uploads/NIH_Guidelines.pdf>  |
| Canada PSDS | <https://www.canada.ca/en/public-health/services/laboratory-biosafety-biosecurity/pathogen-safety-data-sheets-risk-assessment/staphylococcus-aureus.html> |

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| **SPILL PROCEDURES** |
| Small | Notify others working in the lab. Remove PPE and don new PPE. Cover area of the spill with absorbent material and add fresh 1:10 bleach:water. Allow 20 minutes (or as directed) of contact time. After 20 minutes, 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-5pm406-577-7674**After business hours:**Bozeman Deaconess Hospital Emergency Room915 Highland Blvd |

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| **PERSONAL PROTECTIVE EQUIPMENT (PPE)** |
| Minimum PPE Requirements | Lab coat, disposable gloves, safety glasses, closed toed shoes, long pants |
| Additional Precautions | Additional PPE may be required depending on lab specific SOPs and IBC Protocol. |