MATERIAL SAFETY DATA SHEET - INFECTIOUS SUBSTANCES

SECTION I - INFECTIOUS AGENT

NAME: Mycoplasma orale, M. salivarium, M. fermentans

SYNONYM OR CROSS REFERENCE: N/A

CHARACTERISTICS: Gram-negative pleomorphic cells, smaller than conventional bacteria (0.2-2μm), parasitic and saprophytic in existence

SECTION II - HEALTH HAZARD

PATHOGENICITY: Mucosally associated, respiratory and urogenital tract localization, rarely penetrates the submucosa; M. orale - common in upper respiratory tract; M. salivarium - common non-pathogenic species of upper respiratory tract and oral cavity; M. fermentans - occasionally isolated from oropharynx of humans, strains have been isolated from brains of AIDS patients

EPIDEMIOLOGY: Worldwide; M. salivarium frequently isolated from individuals with periodontal disease

HOST RANGE: Humans, non-human primates

INFECTION DOSE: Not known

MODE OF TRANSMISSION: Droplet exposure from the oropharynx

INCUBATION PERIOD: Not clearly identified

COMMUNICABILITY: Low

SECTION III - DISSEMINATION

RESERVOIR: Humans, non-human primates; M. salivarium occasionally found in horses

ZOOONOSIS: None

VECTORS: None

SECTION IV - VIABILITY

DRUG SUSCEPTIBILITY: Sensitive to penicillin, erythromycin and aminoglycosides

DRUG RESISTANCE: M. fermentans isolates from AIDS patients are erythromycin resistant

SUSCEPTIBILITY TO DISINFECTANTS: Sensitive to disinfectants - 1% sodium hypochlorite and 70% ethanol, glutaraldehyde, formaldehyde, iodines

PHYSICAL INACTIVATION: Sensitive to drying, moist heat (121°C for at least
15 min) and dry heat (160-170° C for at least 1 hour)

SURVIVAL OUTSIDE HOST: Sensitive and will only survive 4-6 h at room temperature

SECTION V - MEDICAL

SURVEILLANCE: Monitor for symptoms

FIRST AID/TREATMENT: Antibiotic therapy

IMMUNIZATION: None available

PROPHYLAXIS: Not usually administered

SECTION VI - LABORATORY HAZARDS

LABORATORY-ACQUIRED INFECTIONS: 4 reported cases of Mycoplasma infection up to 1976

SOURCES/SPECIMENS: Blood, synovial fluid, amniotic fluid, cerebrospinal fluid, urine, prostatic secretions, semen, wound aspirates, sputum, pleural fluid, bronchoalveolar lavage specimens; swabs from nasopharynx, cervix, vagina, wounds and urethra

PRIMARY HAZARDS: Low risk; droplet exposure of mucus membranes; infectious aerosols; parenteral inoculation; ingestion

SPECIAL HAZARDS: None

SECTION VII - RECOMMENDED PRECAUTIONS

CONTAINMENT REQUIREMENTS: Well designed laboratory with good microbiological practices; this level of containment does not allow for any additional risk that may present for those persons with pre-existing disease, compromised immunity or who are pregnant

PROTECTIVE CLOTHING: Laboratory coat; gloves when direct contact with infectious materials is unavoidable

OTHER PRECAUTIONS: None

SECTION VIII - HANDLING INFORMATION

SPILLS: Allow aerosols to settle; wear protective clothing; gently cover spill with paper towels and apply 1% sodium hypochlorite, starting at perimeter and working towards the centre; allow sufficient contact time (30 min) before clean up

DISPOSAL: Decontaminate before disposal - steam sterilization, chemical disinfection, incineration

STORAGE: In sealed containers that are appropriately labelled

SECTION IX - MISCELLANEOUS INFORMATION

Date prepared: March, 2001

Prepared by: Office of Laboratory Security, PHAC

Although the information, opinions and recommendations contained in this Material Safety Data Sheet are compiled from sources believed to be reliable, we accept no responsibility for the accuracy, sufficiency, or reliability or for any
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loss or injury resulting from the use of the information. Newly discovered
hazards are frequent and this information may not be completely up to date.

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Last Updated: 2001-05-15

Important Notices
MATERIAL SAFETY DATA SHEET - INFECTIONOUS SUBSTANCES

SECTION I - INFECTIONOUS AGENT

NAME: *Mycoplasma pneumoniae*; *M. hominis*

SYNONYM OR CROSS REFERENCE: Mycoplasmal pneumonia, pleural atypical pneumonia, PPLO, pleuropneumonia-like organisms

CHARACTERISTICS: Gram-negative pleomorphic cells, smaller than conventional bacteria (0.2-2μm), parasitic and saprophytic in existence; spherical to ovoid shaped, atypical pathogen, single triple-layered membrane but lacking true cell wall; intracellular localization; terminal organelle that plays a role in attachment

SECTION II - HEALTH HAZARD

PATHOGENICITY: Mucosally associated, respiratory and urogenital tract localization, rarely penetrates the submucosa; *M. hominis* - potential pathogen of reproductive tract, common parasite of lower urogenital tract; can disseminate to other parts (particularly in the immune-compromised), acute pyelonephritis caused by invasion of the upper urinary tract; cerebrospinal fluid invasion; invasive disease of the joints, respiratory tract with bacteremia; can cause sternal infection; vertical transmission (18-55%) causes congenital pneumonia, bacteremia, progression to chronic lung disease or prematurity; *M. pneumoniae* - Comprises 15-20% of all pneumonia cases; febrile lower respiratory infection; less often a pharyngitis progressing to bronchitis or pneumonia; non-pulmonary manifestations including neurologic, hepatic, cardiac and hematologic disorders; gradual onset with headache, malaise, paroxysmal cough, substernal pain; leukocytosis in some cases; duration varies from a few days to a month or more; Low fatality

EPIDEMIOLOGY: Worldwide; *M. pneumoniae* - sporadic, endemic and occasionally epidemic in institutions and military; greatest during fall and winter months in temperate climates; all ages but asymptomatic or mild in children under 5 years of age

HOST RANGE: Humans, non-human primates

INFECTIONOUS DOSE: Not known

MODE OF TRANSMISSION: By droplet inhalation, direct contact with infected persons or with freshly soiled articles from an acutely ill and coughing patient; secondary cases among contacts are frequent

INCUBATION PERIOD: Six to 23 days

COMMUNICABILITY: Communicable period is less than 10 days; occasionally longer with persisting febrile illness or persistence of organism in convalescence

SECTION III - DISSEMINATION
RESERVOIR: Humans
ZOONOSIS: None
VECTORS: None

SECTION IV - VIABILITY

DRUG SUSCEPTIBILITY: *M. hominis* - Sensitive to tetracyclines, gentamicin, doxycycline, aminoglycosides, macrolides, clindamycin; *M. pneumoniae* - fluoroquinolone, trovafloxacin, moxifloxacin

DRUG RESISTANCE: Innate resistance to penicillins and rifampicins; tetracycline resistance due to acquisition of tetM gene; *M. hominis* - resistance to erythromycin and azithromycin have been reported

SUSCEPTIBILITY TO DISINFECTANTS: Sensitive to many disinfectants - 1% sodium hypochlorite, 70% ethanol, glutaraldehyde, formaldehyde

PHYSICAL INACTIVATION: Sensitive to drying, moist heat (121°C for at least 15 min) and dry heat (160-170°C for at least 1 hour)

SURVIVAL OUTSIDE HOST: Air (10% RH) - 50 h; Air (90% RH) - 20 h; Air (30-80% RH) - <10 h

SECTION V - MEDICAL

SURVEILLANCE: Monitor for symptoms; confirm bacteriologically

FIRST AID/TREATMENT: Antibiotic therapy

IMMUNIZATION: None

PROPHYLAXIS: Antibiotic prophylaxis

SECTION VI - LABORATORY HAZARDS

LABORATORY-ACQUIRED INFECTIONS: 4 reported cases up to 1976

SOURCES/SPECIMENS: Blood, synovial fluid, amniotic fluid, cerebrospinal fluid, urine, prostatic secretions, semen, wound aspirates, sputum, pleural fluid, bronchoalveolar lavage specimens; swabs from nasopharynx, cervix, vagina, wounds and urethra

PRIMARY HAZARDS: Droplet exposure of mucous membranes; infectious aerosols; parenteral inoculation, ingestion

SPECIAL HAZARDS: None

SECTION VII - RECOMMENDED PRECAUTIONS

CONTAINMENT REQUIREMENTS: Biosafety level 2 practices, containment equipment and facilities for all activities involving clinical materials or cultures; additional precautions and containment for activities with high potential for aerosol production

PROTECTIVE CLOTHING: Laboratory coat; gloves when direct contact with infectious materials is unavoidable; gown (tight wrists and ties in back) and gloves for work in biosafety cabinet

OTHER PRECAUTIONS: None
SECTION VIII - HANDLING INFORMATION

SPILLS: Allow aerosols to settle; wear protective clothing; gently cover spill with paper towels and apply 1% sodium hypochlorite, starting at perimeter and working towards the centre; allow sufficient contact time (30 min) before clean up

DISPOSAL: Decontaminate before disposal - steam sterilization, chemical disinfection, incineration

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