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Français	Contact Us	Help	Search	Canada Site
Home	Centres & Labs	Publications	Guidelines	A-Z Index
Child Health	Adult Health	Seniors Health	Surveillance	Health Canada

Home : Material Safety Data Sheets - Infectious Substances :

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MSDS

MATERIAL SAFETY DATA SHEET - INFECTIOUS SUBSTANCES**SECTION I - INFECTIOUS AGENT****NAME:** *Echinococcus granulosus***SYNONYM OR CROSS REFERENCE:** Echinococcosis, Unilocular echinococcosis, Cystic hydatid disease (CHD)**CHARACTERISTICS:** Tapeworm consisting of 3 to 5 segments, usually 3-6 mm long; scolex has 4 suckers followed by a germinative neck region, one developing segment and one gravid segment containing several segments; cyst usually is slow growing, generally are 1-7 cm in diameter, but may exceed 10 cm**SECTION II - HEALTH HAZARD****PATHOGENICITY:** Manifestation depends on the site and size of the cyst (hydatid) of the lungs, liver and subcutaneous tissues may be asymptomatic for many years, but pressure effects may develop; in sensitive areas, hydatids may cause blocking effects and mechanical compression leading to collapse of infected bones, blindness and epileptiform seizures; the rupture of a hydatid cyst may induce sudden anaphylactic shock**EPIDEMIOLOGY:** Most common in temperate sheep-raising areas; southern South America, southern and central Commonwealth of Independent States, south western Asia, Mediterranean coast, Australia, New Zealand, Middle East, northern Africa, western USA, northwest Canada and Alaska; most common species**HOST RANGE:** Definitive hosts are the dog, wolf, dingo and other Canidae; usual intermediate host is the herbivore (sheep, bovines, swine, goats, equine, camelids) and man**INFECTIOUS DOSE:** Not known**MODE OF TRANSMISSION:** Hand-to-mouth transfer of tapeworm eggs from dog feces; fecally contaminated food and water; in northwest Canada, disease is maintained in a wolf-moose cycle, from which the dog bring the parasite to people**INCUBATION PERIOD:** Variable, from 12 months to years, depending on the site and number of cysts**COMMUNICABILITY:** Not directly transmitted from person-to-person; dogs begin to pass eggs 7 weeks after infection; most infections are lost after 6 months; adult worms may survive for 2-3 years**SECTION III - DISSEMINATION**

RESERVOIR: Humans, dogs, wolf, sheep, goat, pig, cattle

ZOONOSIS: Yes, infection is mostly acquired through contact with canines

VECTORS: coprophagic flies may serve as mechanical vector of the eggs, carrion birds and arthropod

SECTION IV - VIABILITY

DRUG SUSCEPTIBILITY: Sensitive to albendazole, mebendazole, praziquantel (dogs), experimental use oxfendazole

SUSCEPTIBILITY TO DISINFECTANTS: Susceptible to 1% sodium hypochlorite, 2% glutaraldehyde

PHYSICAL INACTIVATION: Sensitive to heat and desiccation

SURVIVAL OUTSIDE HOST: Eggs may survive for several months in pasture, garden, and on household fomites; survives in water and damp sand for 3 weeks at 30° C, 225 days at 6° C and 32 days at 10-21° C

SECTION V - MEDICAL

SURVEILLANCE: Monitor for symptoms; confirm by ultrasonographic and serologic tests (laxtex agglutination test)

FIRST AID/TREATMENT: Administer appropriate drug therapy; surgical removal of large solitary liver cysts

IMMUNIZATION: None available

PROPHYLAXIS: Mebendazole and albendazole have been used successfully

SECTION VI - LABORATORY HAZARDS

LABORATORY-ACQUIRED INFECTIONS: None reported to date

SOURCES/SPECIMENS: Sputum, tissue biopsy

PRIMARY HAZARDS: Ingestion; droplet exposure of the mucous membrane

SPECIAL HAZARDS: Ingestion of eggs by hand-to-mouth transfer

SECTION VII - RECOMMENDED PRECAUTIONS

CONTAINMENT REQUIREMENTS: Biosafety level 2 practices and containment equipment for all activities involving the infective stages of the parasite or any potentially infectious body fluids or tissues

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

OTHER PRECAUTIONS: Work with this parasite (gravid segments) should be conducted in a biosafety cabinet or its equivalent.

SECTION VIII - HANDLING INFORMATION

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

DISPOSAL: Decontaminate all wastes before disposal; steam sterilization, chemical disinfection, incineration

STORAGE: In sealed containers that are appropriately labelled

SECTION IX - MISCELLANEOUS INFORMATION

Date prepared: January, 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 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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[\[Material Safety Data Sheets - Index\]](#)

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[Important Notices](#)