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**MATERIAL SAFETY DATA SHEET - INFECTIOUS SUBSTANCES**

**SECTION I - INFECTIOUS AGENT**

**NAME:** *Human Immunodeficiency Virus*

**SYNONYM OR CROSS REFERENCE:** HIV, AIDS, Acquired Immune Deficiency Syndrome, HTLV III LAV

**CHARACTERISTICS:** Retroviridae (Lentivirus); ss RNA, enveloped icosahedral nucleocapsid, glycoprotein envelope, reverse transcriptase

**SECTION II - HEALTH HAZARD**

**PATHOGENICITY:** Insidious onset with non-specific symptoms such as lymphadenopathy, anorexia, chronic diarrhea, weight loss, fever, and fatigue; opportunistic infections and malignant diseases without a known cause for immune deficiency

**EPIDEMIOLOGY:** First reported in 1981; cases recorded in Americas, Europe, Africa and many other areas; patient categories - homosexually or bisexually active men, drug abusers, Haitian/African emigrants, hemophiliacs, sexual partners of men and women in these categories, infants born to parents in this category

**HOST RANGE:** Humans

**INFECTIOUS DOSE:** Unknown

**MODE OF TRANSMISSION:** Transmitted from person to person through direct exposure to infected body fluids (blood, semen) sexual contact, sharing unclean needles etc.; transplacental transfer can occur

**INCUBATION PERIOD:** Epidemiologic evidence suggests that duration from exposure to onset of symptoms has a minimum range from 6 months to more than 7 years

**COMMUNICABILITY:** Period of communicability extends from asymptomatic period through appearance of opportunistic diseases



## **SECTION III - DISSEMINATION**

**RESERVOIR:** Humans

**ZOONOSIS:** None

**VECTORS:** None

## **SECTION IV - VIABILITY**

**DRUG SUSCEPTIBILITY:** Several reverse transcriptase and protease inhibitors now licensed

**SUSCEPTIBILITY TO DISINFECTANTS:** Susceptible to many disinfectants - 1% sodium hypochlorite, 2% glutaraldehyde, formaldehyde, ethanol

**PHYSICAL INACTIVATION:** Effectiveness of 56·C - 60·C heat in destroying HIV in serum not certain, however, heating small volumes of serum for 30 min at 56·C before serologic testing reduces residual infectivity to below detectable levels

**SURVIVAL OUTSIDE HOST:** Drying in environment causes rapid (within several hours) 90-99% reduction in HIV concentration

## **SECTION V - MEDICAL**

**SURVEILLANCE:** Serological monitoring for evidence of HIV infection

**FIRST AID/TREATMENT:** Specific measures for the opportunistic diseases that result from AIDS; "Cocktail" multidrug treatment for HIV

**IMMUNIZATION:** None available

**PROPHYLAXIS:** Experimental prophylaxis with AZT/DDI or other appropriate drug

## **SECTION VI - LABORATORY HAZARDS**

**LABORATORY-ACQUIRED INFECTIONS:** 5 reported laboratory acquired infections with HIV (splashing of infected materials, inapparent skin exposure, puncture wounds); 18 reported cases in health care workers worldwide

**SOURCES/SPECIMENS:** Blood, semen, vaginal secretions, CSF, other specimens containing visible blood, unscreened or inadequately treated blood products

**PRIMARY HAZARDS:** Direct contact with skin and mucous membranes of the eye, nose and mouth; accidental parenteral inoculation; ingestion; hazard of aerosols exposure unknown

**SPECIAL HAZARDS:** Extreme care must be taken to avoid spilling and splashing infected materials - virus should be presumed in/on all equipment and devices coming in direct contact with infected materials

## **SECTION VII - RECOMMENDED PRECAUTIONS**

**CONTAINMENT REQUIREMENTS:** Biosafety level 2 practices, containment equipment and facilities for activities involving clinical specimens and non-cultured procedures (primary containment devices may be indicated eg. biological safety cabinets) and for activities involving non-human primates and any animals experimentally infected or inoculated with HIV; Biosafety level 3 practices, containment equipment and facilities for all work culturing HIV

**PROTECTIVE CLOTHING:** Gloves should be worn when handling potentially infectious specimens, cultures or tissues; laboratory coats, gowns or suitable protective clothing should be worn

**OTHER PRECAUTIONS:** Keep hands away from the eyes, nose and mouth in order to avoid potential exposure of the mucous membranes; eye goggles or face shields may assist in accomplishing this objective

## **SECTION VIII - HANDLING INFORMATION**

**SPILLS:** Allow aerosols to settle; wearing 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, incineration, chemical disinfection

**STORAGE:** In sealed containers that are appropriately labelled

## **SECTION IX - MISCELLANEOUS INFORMATION**

**Date prepared:** September 1996 **Prepared by:** Office of Biosafety

LCDC

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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Last Updated: 1997-10-11

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