MATERIAL SAFETY DATA SHEET

Version No: MSDS/GEMT/DP-001 Effective Date: February 1, 2013

GEMCITABINE FOR INJECTION USP 200 mg, 1 g and 2 g

SECTION 1 – PRODUCT AND COMPANY IDENTIFICATION

Product Name: Gemcitabine for Injection USP 200 mg, 1 g and 2 g

Marketing Authorisation Holder

Accord Healthcare, Inc.,
1009 Slater Road,
Suite 210-B,
Durham, NC 27703, USA.
Telephone: 1-919-941-7878
Fax- 1-919-941-7881

Manufacturer

Intas Pharmaceuticals Ltd.
Plot No. 457, 458
Village-Matoda,
Bavla Road, Ta. Sanand,
Dist. Ahmedabad-382 210,
Gujarat, India

Intas Pharma Limited,
Plot No. 5, 6 and 7,
Pharmez, Nr. Village Matoda,
Sarkhej-Bavla National Highway No. 8-A,
Taluka - Sanand,
Dist. Ahmedabad – 382 210,
Gujarat, India

US Emergency Phone: Call CHEMTREC Day or Night: 1-800-424-9300

SECTION 2 – COMPOSITION, INFORMATION ON INGREDIENTS

Active: Gemcitabine Hydrochloride

Inactive: Mannitol, sodium acetate trihydrate, sodium hydroxide, hydrochloric acid and water for injection.

SECTION 3 - HAZARDS IDENTIFICATION

Appearance: White to off-white powder or freeze-dried plug

Physical State: Solid

Odor: Odorless

Primary Physical and Health Hazards: Skin permeable. mutagen. irritant (eyes, skin). reproductive and blood effects.

Caution Statement: Gemcitabine for Injection contains Gemcitabine Hydrochloride which may enter the body through the skin, alters genetic material, and may be irritating to the eyes and skin. Effects of exposure may include decreased fertility, fetal changes, and decreased blood cell counts.

Routes of Entry: Inhalation and skin absorption.

Effects of Overexposure: Based on animal data, Gemcitabine for Injection may be absorbed through the skin in amounts capable of producing systemic toxicity and may be irritating to the eyes and skin. Effects of exposure due to therapeutic use may include, but are not limited to, decreased blood cell counts, nausea, vomiting, edema, rash, elevated liver enzymes, and flu-like syndrome.

Medical Conditions Aggravated by Exposure: None known.

Carcinogenicity: No carcinogenicity data found. Not listed by IARC, NTP, ACGIH, or OSHA.

SECTION 4 - EMERGENCY & FIRST AID MEASURES

Eyes: Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. See an ophthalmologist (eye doctor) or other physician immediately.

Skin: Remove contaminated clothing and clean before reuse. Wash all exposed areas of skin with plenty of soap and water. Get medical attention if irritation develops.

Inhalation: Move individual to fresh air. Get medical attention if breathing difficulty occurs. If not breathing, provide artificial respiration assistance (mouth-to-mouth) and call a physician immediately.

Ingestion: Do not induce vomiting. Call a physician or poison control center. If available, administer activated charcoal (6-8 heaping teaspoons) with two to three glasses of water. Do not give anything by mouth to an unconscious person. Immediately transport to a medical care facility and see a physician.

SECTION 5 - FIRE FIGHTING MEASURES

Flash Point: No applicable information found

UEL: No applicable information found

LEL: No applicable information found

Extinguishing Media: Use water, carbon dioxide, dry chemical, foam, or halon.

Unusual Fire and Explosion Hazards: As a finely divided material, may form dust mixtures in air which could explode if subjected to an ignition source.

Hazardous Combustion Products: May emit toxic chloride and fluoride fumes when exposed to heat or fire.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Spills: Use double pairs of latex disposable gloves which must be disposed of within an hour, goggles, impermeable body covering, and approved HEPA-filtered or supplied-air respirator. If material spills occur in production area, use either wet clean-up methods, ensuring that no airborne dusts or aerosols are formed, or appropriate vacuum cleaners having high efficiency particulate air (HEPA) filters.

It is recommended that areas handling final finished product have cytotoxic spill kits available. Spill kits should include impermeable body covering, shoe covers, latex and utility latex gloves, goggles, approved HEPA respirator, disposable dust pan and scoop, absorbent towels, spill control pillows, disposable sponges, sharps container, disposable garbage bag, and a hazardous waste label.

SECTION 7 - HANDLING AND STORAGE

Prior to and after reconstitution, store at controlled room temperature 20° to 25°C (68° to 77° F). Do not refrigerate. Keep out of the reach and sight of children.
It is recommended that the vial should remain in the carton until the time of use.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:
Gemcitabine hydrochloride - LEG 0.3 micrograms/m^3 TWA for 8 hours, LEG 0.2 micrograms/m^3 TWA for 12 hours. Excursion Limit 2.4 micrograms/m^3 for no more than a total of 30 minutes.

For appropriate handling precautions in specific laboratory, manufacturing, or clinical health care operations, consult with a health and safety or technical services representative.

In clinical health care settings, follow OSHA Technical Manual, Section VI, Chapter 2 – Controlling Occupational Exposure to Hazardous Drugs. This chapter covers protection of employees during cytotoxic drug preparation, administration, disposal, and the handling of human waste products potentially contaminated with cytotoxic drug substances.

GENERAL: For all work environments, wear eye protection, avoid skin contact, wear gloves, and take other appropriate precautions.

Respiratory Protection: When the exposure guidelines may be exceeded, use an approved HEPA filtered or supplied-air respirator.

Eye Protection: Chemical goggles and/or face shield.
Ventilation: Extensive local exhaust, ventilated enclosure (HEPA-filtered balance enclosure, fume hood, or Class II or III vertical flow biosafety cabinet), or enclosed process equipment.

Other Protective Equipment: Chemical-resistant gloves and impermeable body covering to minimize skin contact. If handled in a ventilated enclosure, as in a laboratory setting, respirator and goggles or face shield may not be required. Safety glasses are always required.

Additional Exposure Precautions: In production settings, airline-supplied, hood-type respirators are preferred. Shower and change clothing if skin contact occurs.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: Not applicable

Melting Point: No applicable information found

Density: No applicable information found

pH: Acidic

Evaporation Rate: No applicable information found

Water Solubility: Soluble

Vapor Density: No applicable information found

Vapor Pressure: No applicable information found

SECTION 10 - STABILITY AND REACTIVITY

Stability: Stable at normal temperatures and pressures.

Incompatibility: May react with strong oxidizing agents (e.g., peroxides, permanganates, nitric acid, etc.).

Hazardous Decomposition: May emit toxic fluoride and chloride fumes when heated to decomposition.

Hazardous Polymerization: Will not occur.

SECTION 11 - TOXICOLOGY INFORMATION

ACUTE EXPOSURE
No data available for mixture or formulation. Data for ingredient(s) or related material(s) are presented.

Oral:
Gemcitabine Hydrochloride - Rat, 500 mg/kg, no deaths.
Mouse, mortality due to intestinal lesions reported when given a single dose of 333 mg/kg and higher.

Skin:
Gemcitabine for Injection - Rabbit, median lethal dose estimated greater than 1000 mg/kg, mortality, reduced activity, diarrhea, weight loss, few feces, pale eyes, salivation.

Inhalation: No applicable information found.

Skin Contact:
Gemcitabine for Injection - Rabbit, irritant

Eye Contact:
Gemcitabine Hydrochloride - Rabbit, irritant

CHRONIC EXPOSURE
No data available for mixture or formulation. Data for ingredient(s) or related material(s) are presented.

Target Organ Effects:
Gemcitabine Hydrochloride - Blood effects (decreased red blood cell, white blood cell, and platelet counts).

Reproduction:
Gemcitabine Hydrochloride - Decreased sperm formation and decreased fertility in males, and reproductive tissue changes. Depressed fetal viability and weight and malformations at doses toxic to the mother.

Sensitization:
Gemcitabine Hydrochloride - Guinea pig, subcutaneous, negative systemic response.

Mutagenicity:
Gemcitabine Hydrochloride - Mutagenic in mouse lymphoma assay and mouse micronucleus test. Not mutagenic in bacterial cells and other mammalian cell tests.

SECTION 12 - ENVIRONMENTAL IMPACT INFORMATION

No environmental data for the mixture or formulation. The environmental data for ingredient(s) or related material(s) are presented.

Ecotoxicity Data:
Gemcitabine
Rainbow trout 96-hour median lethal concentration: > 1043 mg/L
Fathead minnow 96-hour median lethal concentration: > 1014 mg/L
Daphnia magna 48-hour median effective concentration: > 999 mg/L
Green algae (S. capricornutum) median effective concentration: 5.4 mg/L (average specific growth rate)
Microorganisms

- fungus (Chaetomium globosum): MIC > 1000 mg/L
- mold (Aspergillus flavus): MIC > 1000 mg/L
- soil bacteria (Comamonas acidovorans): MIC > 1000 mg/L
- N-fixing bacteria (Azotobacter chroococcum): MIC > 1000 mg/L
- blue-green algae (Nostoc sp.): MIC 800 mg/L

Environmental Fate:
Gemcitabine hydrochloride
Dissociation constant (pKa): 3.58
Log Kow: 0.053, 0.053, 0.052 (pH 5, 7, 9)
Solubility (g/L): 16.0, 15.3, 15.8 (pH 5, 7, 9)
Light absorption (nm): 268 - 269

Hydrolysis: no significant hydroylsis
Aerobic biodegradation half-life (days): no significant degradation

Environmental Summary:
Gemcitabine - Practically non-toxic to fish and microorganisms and moderately toxic to green algae. Low potential to bioaccumulate in aquatic organisms. Expected to be persistent in the environment based on slow rates of hydrolysis and biodegradation.

SECTION 13 - DISPOSAL INFORMATION

Waste Disposal: To avoid accidental exposure due to waste handling, place waste residue in a segregated, sealed plastic container. Used syringes, needles, and sharps should not be crushed, clipped, or recapped, but placed directly into an approved sharps container. Dispose of any cleanup materials and waste residue according to all applicable laws and regulations, e.g., secure chemical landfill disposal.

SECTION 14 - TRANSPORTATION INFORMATION

Regulatory Organizations:

DOT: Not Regulated

ICAO/IATA: Not Regulated

IMO: Not Regulated

SECTION 15 - REGULATORY INFORMATION

U.S. Regulatory Information: Not found

International Regulatory Information: Not found

SECTION 16 - OTHER DATA

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability

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