MATERIAL SAFETY DATA SHEET

Version No: MSDS/TOPT/DP-001 Effective Date: February 20, 2013

Topotecan HCl for Injection 4 mg / vial

SECTION 1 – PRODUCT AND COMPANY IDENTIFICATION

Product Name: Topotecan HCl for Injection

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

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

SECTION 2 – COMPOSITION, INFORMATION ON INGREDIENTS

Active: Topotecan Hydrochloride

Inactive: Mannitol, Tartaric acid, Sodium hydroxide, Hydrochloric acid 37%

SECTION 3 - HAZARDS IDENTIFICATION

Fire and Explosion	This product is classified as non-flammable.
Health	Exposure might occur via skin; eyes; ingestion. Caution - Potent pharmaceutical agent. May cause cancer. May produce adverse effects on the development of human offspring. Possible effects of over exposure in the workplace include: nausea; vomiting; diarrhoea; bone marrow toxicity. Health effects information is based on hazards of components.
Environment	No information is available about the potential of this product to produce adverse environmental effects.

SECTION 4 - EMERGENCY & FIRST AID MEASURES

Ingestion	Never attempt to induce vomiting. Do not attempt to give any solid or liquid by mouth if the exposed subject is unconscious or semi-conscious. Washout the mouth with water. If the exposed subject is fully conscious, give plenty of water to drink. Obtain medical attention.
Inhalation	Physical form suggests that risk of inhalation exposure is negligible.
Skin Contact	Using appropriate personal protective equipment, remove contaminated clothing and flush exposed area with large amounts of water. Obtain medical attention if skin reaction occurs, which may be immediate or delayed.
Eye Contact	Wash immediately with clean and gently flowing water. Continue for at least 15 minutes. Obtain medical attention.

NOTES TO HEALTH PROFESSIONALS

Medical Treatment	Medical treatment in cases of overexposure should be treated as an overdose of a cytotoxic agent.
Medical Conditions Caused or Aggravated by Exposure	None for occupational exposure.
Health Surveillance Procedures	The need for pre-placement and periodic health surveillance must be determined by risk assessment. Following assessment, if the risk of exposure is considered significant then exposed individuals should undergo appropriate health surveillance that may include symptom enquiry, clinical examination and monitoring of lead organ effects (e.g. full blood counts).In the event of overexposure, individuals should receive post exposure health surveillance focused on the most likely health effects (e.g. full blood counts).
Antidotes	No specific antidotes are recommended.

SECTION 5 - FIRE FIGHTING MEASURES

Fire and Explosion Hazards	Not expected for the product, although the packaging is combustible.
Extinguishing Media	Water is recommended for fires involving packaging.
Special Firefighting Procedures	For single units (packages): No special requirements needed. For larger amounts (multiple packages/pallets) of product: Since toxic, corrosive or flammable vapours might be evolved from fires involving this product and associated packaging, self contained breathing apparatus and full protective equipment are recommended for firefighters. If possible, contain and collect firefighting water for later disposal.
Hazardous Combustion Products	Toxic, corrosive or flammable thermal decomposition products are expected when the product is exposed to fire.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions	For all spills, isolate the spill area, restrict access, post the area for a carcinogen and immediately implement emergency procedures for cleanup and control of occupational carcinogens. Wear protective clothing and equipment consistent with the degree of hazard.
Environmental Precautions	Do not allow this material to enter surface drainage systems, sewers and poorly ventilated areas.
Clean-up Methods	Spread an inert absorbent on the spill and place in a suitable, properly labelled container for recovery or disposal.
Decontamination Procedures	Surfaces should be decontaminated so that potential exposures do not exceed the hygiene guide specified in Section 8 of this MSDS. The pH of the collected wash waters should be adjusted using base, such as sodiumhydroxide, to a pH greater than 8; commercial bleach solution, containing approximately 5% hypochlorite, should then be added to the waste water. Microgram levels of surface contamination can be visualised using ultraviolet light.

SECTION 7 - HANDLING AND STORAGE

HANDLING

General Requirements	Isolation or enclosure is recommended to control exposure to this material.
STORAGE	Store at controlled room temperature between 20° and 25°C (68° and 77°F). Protect from light; product is light-sensitive.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

INGREDIENT	TOPOTECAN	
Hazard Category	4	
Occupational Exposure Limit	0.03 MCG/M3 (8 HR TWA)	CARCINOGEN, REPRODUCTIVEHAZARD, HIGHLY POTENT

PERSONAL PROTECTIVE EQUIPMENT

Eye Protection	Wear approved safety glasses with side shields if eye contact is possible.
Gloves	The selection of gloves for a specific activity must be based on the material's properties and on possible permeation and degradation that may occur under the circumstances of use. Glove selection must take into account any solvents and other hazards present. Potential allergic reactions can occur with certain glove materials (e.g. Latex) and therefore these should be avoided. Care must be exercised if no data are available and further guidance should be sought from your local safety department. Glove selection must take into account any solvents and other hazards present.
Respirators	Respiratory protective equipment (RPE) is not required for normal handling of this material.
Other Equipment or Procedures	Wear appropriate clothing to avoid skin contact.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance Physical Form	Lyophilised powder.
pH of Aqueous Solutions	3

SECTION 10 - STABILITY AND REACTIVITY

Stability	The product is stable.
Conditions to Avoid	None for normal handling of this product.

SECTION 11 - TOXICOLOGY INFORMATION

Oral Toxicity	Toxicity might occur following ingestion.
Inhalation Toxicity	No studies have been conducted
Skin Effects	Irritation is not expected following direct contact.
Eye Effects	Irritation is not expected following direct contact with eyes.
Target Organ Effects	Adverse effects might occur in the following organ(s) following overexposure: bone marrow and formation of blood cells.
Sensitisation	Potential for inducing allergic reactions via the dermal or respiratory route is not known.
Genetic Toxicity	Known or probable human mutagen.
Carcinogenicity	Contains a component listed as a carcinogen by: No components are listed as carcinogens by: (IARC); (NTP); (US OSHA).
Reproductive Effects	Contains components which have been classified as: Known or presumed to cause toxicity in developing human offspring. Known or presumed to

impair fertility in human females.

Pharmacological Effects	This preparation contains ingredient(s) with the following activity: acytotoxic agent.
Other Adverse Effects	Overexposure in the workplace might have the following effects: reduced white blood cell count; nausea; diarrhoea; vomiting; fatigue.

SECTION 12 - ENVIRONMENTAL IMPACT INFORMATION

Summary	No information is available about the potential of this product to produce adverse environmental effects. This material contains an active pharmaceutical ingredient that has been tested and which may be harmful if released directly to the environment. Consult the MSDS of the active ingredient for specific information about potential environmental effects. Appropriate precautions should be taken to limit release of this material to the environment. Local regulations and procedures should be consulted prior to environmental release. Specific information on the active pharmaceutical ingredient is provided below.
ECOTOXICITY	
Aquatic * Microtox	Microtox is a general toxicity test which utilizes sensitive marine photo bacteria as the test species. This material contains an active pharmaceutical ingredient that is not toxic to these microorganisms. EC50: 102 mg/L, 15 Minutes
* Daphnid	This material contains an active pharmaceutical ingredient that is harmful todaphids. EC50: 61.8 mg/L, 48 Hours, Daphnia magna, Static test
* Fish	This material contains an active pharmaceutical ingredient that is harmful to fish. Adult Pimephales promelas, fathead minnow EC50: 45.7 mg/L, 96 Hours, Static test Adult Pimephales promelas, fathead minnow NOEL: 25 mg/L, 96 Hours, Static test
Solubility	This material contains an active pharmaceutical ingredient that for environmental fate predictions has solubility in water.

Adsorption	This material contains an active pharmaceutical ingredient that is not likely to adsorb to sludge or biomass if released directly to the environment. Sludge BiomassDistribution Coefficient(log Kd): 2.28 Measured
Partitioning	This material contains an active pharmaceutical ingredient with octanol/water partition coefficient data that suggests that for environmental fate predictions the active pharmaceutical ingredient will not have the tendency to distribute into fats.

PERSISTENCE/ DEGRADATION

Hydrolysis	This material contains an active pharmaceutical ingredient that has been shown to be chemically stable in water. Hydrolysis is unlikely to be a significant depletion mechanism. Half-Life, Neutral: 35 Years, Measured
Photolysis	This material contains an active pharmaceutical ingredient that has been shown to be chemically unstable in water when exposed to light. Aqueous photolysis may be a significant depletion mechanism. Half-Life, Aqueous: 2.51 Minutes, Measured
Biodegradation	This material contains an active pharmaceutical ingredient that is not readily biodegradable (as defined by 1993 OECD Testing Guidelines). Aerobic – Ready Percent Degradation: 0 %, 28 days, Batch activated sludge (BAS),Residential sludge

SECTION 13 - DISPOSAL INFORMATION

Disposal Recommendations	Collect for recycling or recovery if possible. The disposal method for rejected products/returned goods must ensure that they cannot be re-sold or re-used. The recommended method of disposal is incineration.
Regulatory Requirements	Observe all local and national regulations when disposing of this product.

SECTION 14 - TRANSPORTATION INFORMATION

The MSDS should accompany all shipments for reference in the event of spillage or

accidental release. Only authorised persons trained and competent in accordance with appropriate national and international regulatory requirements may prepare dangerous goods for transport.

UN Classification and Labelling	Topotecan for Injection
Proper Shipping Name	Medicine, solid, toxic, nos (Topotecan for Injection)
UN Number	UN 3249
Class/Division	6.1
Packing Group	III
Risk Label(s)	Class 6.1 Toxic

UN/ID Number	ID 8000
Proper Shipping Name/Description	Consumer Commodity
ICAO/IATA Class/Division	9
Subsidiary Risk	None
Packing Group	Not applicable (use packing instruction 910).
Hazard Label(s)	Class 9

Limited Quantities	Quantities equal to or less than 0.5 kg per inner packaging are not subject to the full packaging and labelling requirements, although the appropriate shipping papers will be required.

International Maritime Transport (IMDG Requirements)

UN Number	UN 3249
Proper Shipping Name/Description	Medicine, solid, toxic, nos
IMO Class/Division	6.1
Subsidiary Risk	None
Packing Group	III
Class Label(s)	Class 6.1 Toxic 
Marine Pollutant Status	Not listed
Limited Quantities	Quantities equal to or less than 3 kg per inner packaging are not subject to the full packaging and labelling requirements, although the appropriate shipping papers will be required.

US Domestic Transport (DOT Requirements)

Proper Shipping Name	Consumer Commodity, ORM-D
DOT Hazard Class/Division	ORM-D
Class/Division	
UN/NA Number	Not applicable.
Packing Group	Not applicable
US Emergency Response Guide Number	151
Quantity	Quantities equal to or less than 0.25 kg per inner packaging are not

Limitations subject to the full packaging and labelling requirements, although the appropriate shipping papers will be required.

European Ground Transport (ADR/RID Requirements)
Classification and Labelling Not subject to ADR, see SP 601.

SECTION 15 - REGULATORY INFORMATION

The information included below is an overview of the major regulatory requirements. It should not be considered to be an exhaustive summary. Local regulations should be consulted for additional requirements.
EU Classification and Labelling
Exempt from requirements of EU Dangerous Preparations directive - product regulated as a medicinal product, cosmetic product or medical device.

Safety Phrase(s)
S23 - Do not breathe.
S25 - Avoid contact with eyes.
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S29 - Do not empty into drains.
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.
S38 - In case of insufficient ventilation, wear suitable respiratory equipment.
S53 - Avoid exposure - obtain special instructions before use.
S60 - This material and/or its container must be disposed of as hazardous waste.

US OSHA Standard (29 CFR Part 1910.1200)
Classification This product is classified as hazardous according to the OSHA Hazard Communication Standard.

Other US Regulations
TSCA Status Exempt

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 resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall INTAS be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if INTAS has been advised of the possibility of such damages.

MSDS = Material Safety Data Sheet