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SAFETY DATA SHEET

Section 1: Identification

Material	**Emtricitabine/Tenofovir Disoproxil Fumarate Tablets**
Manufacturer	**Hetero Labs Limited Unit III** 22-110, IDA, Jeedimetla, Hyderabad-500 055, Telangana, India.
Distributor	**Camber Pharmaceuticals, Inc.**, Piscataway, NJ 08854

Section 2: Hazard(s) Identification

Classification of the substance or mixture	Drugs in the finished state and intended for the final user are not subject to labeling in the US, EU or Canada. Please consult the prescribing/packaging information. The classification and labelling listed below is for bulk Emtricitabine/Tenofovir Disoproxil Fumarate Tablets
Regulation (EC) 1272/2008 [GHS]	Irritant (eye) - Category 1
Directive 67/548/EEC or 1999/45/EC	R41
CLP/GHS hazard Statements	H318 - Causes serious eye damage.
CLP/GHS precautionary Statements	P280 - Wear eye/face protection. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 - Immediately call a Poison Center or doctor/ Physician
Risk (R) Phrase(s)	R41 - Risk of serious damage to eyes.
Safety Advice	S2 - Keep out of reach of children. S25 - Avoid contact with eyes. S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S39 - Wear eye/face protection.
Other hazards	Adverse effects seen with therapeutic use of Emtricitabine/Tenofovir Disoproxil Fumarate include diarrhea, nausea, abdominal pain, flatulence, pancreatitis, weakness, headache, dizziness, insomnia,

	abnormal dreams, allergic reactions, skin discoloration, rash, muscular weakness, bone problems, including bone pain, softening or thinning (which may lead to fractures), changes in immune system (Immune Reconstitution Syndrome). Serious effects including lactic acidosis, renal impairment, including cases of acute renal failure, and effects on the liver, including hepatomegaly and developing fat in liver. The recommended dose of Emtricitabine/Tenofovir Disoproxil Fumarate Tablets is one tablet per day (containing 200 mg emtricitabine and 300 mg tenofovir disoproxil fumarate)
US Signal word	Warning
US Hazard overview	Causes eye irritation. Used as an antiretroviral agent for the treatment of HIV-1 infection.

Section 3: Composition / Information on Ingredients

Ingredients	Tenofovir Disoproxil Fumarate	Emtricitabine
CAS	(202138-50-9)	(143491-57-0)

SECTION 4 - FIRST AID MEASURES

Ingestion	Do not induce vomiting unless directed by medical personnel. Do not give anything to drink unless directed by medical personnel. Never give anything by mouth to an unconscious person. Notify medical personnel and supervisor.
Inhalation	Immediately move exposed subject to fresh air. If not breathing, give artificial respiration. If breathing is labored, administer oxygen. Immediately notify medical personnel and supervisor.
Skin Contact	Wash exposed area with soap and water and remove contaminated clothing/shoes. If irritation occurs or persists, notify medical personnel and supervisor.
Eye Contact	If easy to do, remove contact lenses, if worn. Immediately flush eyes with copious quantities of water for at least 15 minutes. If irritation occurs or persists, notify medical personnel and supervisor
Indication of immediate medical attention and special treatment needed, if necessary	Medical conditions aggravated by exposure: None known or reported. Treat symptomatically and supportively. If accidental exposure occurs to an individual who is also taking one or more concomitant medications, consult the respective package or prescribing information for potential drug interactions.

Section 5: Fire-Fighting Measures

Extinguishing Media	Use water spray (fog), foam, dry powder, or carbon dioxide, as appropriate for surrounding fire and materials.
Specific hazards arising from the substance or mixture	No information identified. May emit toxic gases of carbon monoxide, carbon dioxide, oxides of nitrogen, magnesium-containing compounds, and phosphorus containing compounds.
Flammability/Explosivity	No information identified
Advice for firefighters	In case of fire in the surroundings: use the appropriate extinguishing agent. Wear full protective clothing and an approved, positive pressure, self-contained breathing apparatus. Decontaminate all equipment after use.

Section 6: Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	If product is released or spilled, take proper precautions to minimize exposure by using appropriate personal protective equipment (see Section 8). Area should be adequately ventilated
Methods and materials for containment and cleaning up	If tablets are spilled, scoop up and dispose of in a manner that is compliant with federal, state or local laws. If tablets are broken or crushed, DO NOT RAISE DUST. Surround spill or powder with absorbents and place a damp cloth or towel over the area to minimize entry of powder into the air. Add excess liquid to allow the material to enter into solution. Capture remaining liquid onto spill adsorbents. Place spill materials into a leak-proof container for disposal in accordance with applicable waste disposal regulations. Decontaminate the area twice with an appropriate solvent.
Environmental precautions	Do not empty into drains. Avoid release to the environment

Section 7: Handling and Storage

Precautions for safe handling	If tablets are crushed or broken, dust containing drug substance may be released. Minimize dust generation and accumulation. Follow recommendations for handling bulk formulated/packaged pharmaceutical agents (i.e., use of engineering controls and/or other personal protective equipment if needed).Wash thoroughly after handling. Avoid contact with eyes, skin and other mucous membranes. Avoid breathing dust.

Conditions for safe storage including any incompatibilities	Store at 20° to 25°C (68° to 77°F) [see USP Controlled Room Temperature].
Specific end use(s)	No information identified.

Section 8: Exposure Controls/Personal Protection

Compound	Issuer	Type	OEL
Tenofovir Disoproxil Fumarate	Gilead	TWA-8 HR	200 µg/m3
Emtricitabine	Gilead	TWA-8 HR	1 mg/m³

Exposure/Engineering Controls

None required for normal handling of packaged product. If handling bulk tablets or tablets are crushed or broken: control exposures to below the OEL (where available). The objective of containment, controls and work practices should be to maintain worker breathing zone concentrations below the respective OEL for each task or operation. In general, the handling practices below are capable of achieving the OELs. However, verification of the acceptability of these recommended containment, controls and work practices to meet OELs through industrial hygiene monitoring of tasks or operations is recommended. Selection and use of containment devices and personal protective equipment should be based on a risk assessment of exposure potential. Use local exhaust and/ or enclosure at dust-generating points. Emphasis is to be placed on closed material transfer systems and process containment, with limited open handling of powders.

Section 9: Physical and Chemical Properties

Physical Form	Tablet
Description	White to off white, capsule shaped, film coated tablets contain 200 mg of emtricitabine and 300 mg of tenofovir disoproxil fumarate (which is equivalent to 245 mg of tenofovir disoproxil), are debossed with 'H' on one side and with '124' on the other side, and are available in unit of use bottles [containing a dessicant (silica gel sachet) and closed with a child-resistant closure] of: 30 tablets NDC 31722-560-30

Section 10: Stability and Reactivity

Reactivity	No information identified.
Chemical stability	Stable

Section 11: Toxicological Information

Information on toxicological Effects **Route of entry**	May be absorbed by ingestion. Absorption by inhalation or skin contact is not likely for packaged product, but may occur if tablets are crushed/broken.
Additional acute toxicity information	Administration of non-degraded or degraded TDF/FTC by once daily oral gavage was well tolerated in rats at levels of 30/20, 100/67 and 300/200 mg/kg/day for 14 days. The NOAEL was considered to be 300/200 mg/kg/day for both non-degraded and degraded TDF/FTC. No differences in toxicity were observed between non- degraded and degraded material.
Irritation/Corrosion	Tenofovir disoproxil fumarate was a severe eye irritant and a slight skin irritant in rabbits. No information identified for emtricitabine.
Sensitization	Tenofovir disoproxil fumarate was not a contact sensitizer in guinea pigs. No information identified for emtricitabine.
STOT-single exposure	Oral NOELs of >1,500 and >30 mg/kg were reported in rats and dogs, respectively, following single oral doses of tenofovir disoproxil fumarate.
STOT-repeated exposure/Repeat-dose toxicity	NOELs associated with repeat doses were <30 and <3 mg/kg/day tenofovir disoproxil fumarate in rats and dogs, respectively. Target organs of toxicity included the bone and kidney. Oral NOELs of 500, 600 and 200 mg/kg/day emtricitabine were identified in repeat-dose toxicity studies in mice (6-month), rats (3-month) and monkeys (12-month), respectively.
Reproductive toxicity	An oral reproductive NOEL of 300 mg/kg/day Tenofovir disoproxil fumarate was identified in rats. No effects on fertility were observed in mice and rats treated with oral doses up to >1000 and 750 mg/kg/day emtricitabine, respectively.
Developmental toxicity	Reproduction studies performed in rats and rabbits revealed no evidence of harm to the fetus due to tenofovir Disoproxil fumarate. The incidence of fetal variations/ malformations was not increased in the offspring of mice or rabbits treated orally with emtricitabine at doses 60- and 120-fold higher, respectively, than those used in humans (based on exposure levels).

Genotoxicity	Tenofovir disoproxil fumarate was mutagenic in the *in vitro* mouse lymphoma assay, but was negative in both the Ames bacterial mutagenicity test and an *in vivo* mouse micro nucleus assay. Emtricitabine was negative in the Ames bacterial mutagenicity assay, a mutation assay in mouse lymphoma cells and an *in vivo* mouse micronucleus assay.
Carcinogenicity	None of the components of the product present at levels greater than or equal to 0.1% are listed by NTP, IARC, ACGIH or OSHA as a carcinogen. In long-term oral carcinogenicity studies, no evidence of carcinogenicity was observed in rats at doses up to 5 times the recommended therapeutic dose of tenofovir disoproxil fumarate in humans. In similar studies with mice, an increase in duodenal tumors was noted in female mice at 600 mg/kg/day; however, this was likely related to high local concentrations in the gastrointestinal tract. No drug-related increases in tumor incidence were observed in mice or rats treated with oral doses as high as 750 and 600 mg/kg/day emtricitabine, respectively
Aspiration hazard	No data available.

Section 12: Ecological Information

Additional toxicity information	EC50s of 940 and >1000 mg a.i./L were identified for Emtricitabine and Tenofovir disoproxil fumarate, respectively, in a respiratory inhibition study.
Persistence and Degradability	Emtricitabine and Tenofovir disoproxil fumarate emtricitabine are not readily biodegradable.
Bioaccumulative potential	Tenofovir disoproxil fumarate and emtricitabine are unlikely to bioaccumulate, based on their respective log KOW values.
Mobility in soil	Tenofovir disoproxil fumarate and emtricitabine are not expected to partition into the sediment
Adsorption coefficient (Koc)	Log Koc values of 1.3 and 21.1-45.6 were identified for tenofovir disoproxil fumarate and emtricitabine, respectively
Results of PBT and vPvB Assessment	Not performed

Other adverse effects	No data identified.
Note	The environmental characteristics of this product/mixture have not been fully investigated. The above data are for the active ingredient(s) and/or other ingredient(s) where applicable. Releases to the environment should be avoided.

Section 13: Disposal Considerations

Waste treatment methods	Used product should be disposed of according to local, state, and federal regulations. Do not send down the drain or flush down the toilet. All wastes containing the material should be properly labeled. Dispose of wastes in accordance to prescribed federal, state, and local guidelines, e.g., appropriately permitted chemical waste incinerator. Rinse waters resulting from spill cleanups should be discharged in an environmentally safe manner, e.g., appropriately permitted municipal or on-site wastewater treatment facility.

Section 14: Transport Information

Transport	Based on the available data, this product/mixture is not regulated as a hazardous material/dangerous good under EU ADR/RID, US DOT, Canada TDG, IATA, or IMDG.
UN number	None assigned.
UN proper shipping name	None assigned.
Transport hazard classes and packing group	None assigned.
Environmental hazards	Based on the available data, this product/mixture is not regulated as an environmental hazard or a marine pollutant.
Special precautions for Users	Mixture not fully tested - avoid exposure.
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable

Section 15: Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture	This SDS complies with the requirements under US, EU and GHS (EU CLP - Regulation EC No 1272/2008) guidelines. Consult your local/ regional authorities for more information.

Chemical safety assessment	Not conducted.
OSHA Hazardous	**Drugs packaged in their finished state and intended for final users are not subject to labeling in the US or under GHS.** If handling the bulk formulation, the following labels apply: Warning - Causes eye irritation
WHMIS classification	Not required. Drugs are not subject to WHMIS. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all of the information required by those regulations.
WHMIS symbol(s)	None required
TSCA status	Drugs are exempt from TSCA
SARA section 313	Not listed.
California proposition 65	Not listed.

Section 16: Other Information

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Further information

Revision date: New issue

Revision note: New issue

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create any warranty, express or implied. It is the responsibility of the user to determine the applicability of this information and the suitability of the material or product for any particular purpose.

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