

MATERIAL SAFETY DATA SHEET

SAFETY DATA SHEET

Issue Date: 02/11/2015

Version number: 1.0

Supersedes / Cancels: N/A

1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Product name: Ledipasvir

Chemical name:

Methyl

N-[*(2S)*-1-[[*(6S)*-6-[5-[9,9-Difluoro-7-[2-[[*(1S,2S,4R)*]-3-[[*(2S)*]-2-(methoxycarbonylamino)-3-methylbutanoyl]-3-azabicyclo[2.2.1]heptan-2-yl]-3*H*-benzimidazol-5-yl]fluoren-2-yl]-1*H*-imidazol-2-yl]-5-azaspiro[2.4]heptan-5-yl]-3-methyl-1-oxobutan-2-yl] carbamate

Product Code: LPS

CAS: 1256388-51-8

Formula: C₄₉H₅₄F₂N₈O₆

Molecular weight: 889.015

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: This material may be used for the manufacture of pharmaceuticals.

Uses advised against: N/A

1.3 Details of the supplier of the substance or mixture

Supplier: Beijing Mesochem Technology Co.,Ltd

1.4 Emergency Telephone

0086-57862036

2 HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture [CLP classification]

The product has not been classified as hazardous according to the legislation in force.

2.2 Label elements

Labelling according to CLP Regulation

2.3 Other hazard information:

Ingestion: N/A

Skin Contact: No specific symptoms

Eye Contact: N/A

Inhalation: N/A

Environment (vPvB / PBT): Not regarded as dangerous for the environment

Additional Information [anything else likely to cause a problem] No other information noted

3 INFORMATION ON THE INGREDIENTS

3.1 Substances



Product name:

Methyl

N-[(2*S*)-1-[(6*S*)-6-[5-[9,9-Difluoro-7-[2-[(1*S*,2*S*,4*R*)-3-[(2*S*)-2-(methoxycarbonylamino)-3-methylbutanoyl]-3-azabicyclo[2.2.1]heptan-2-yl]-3*H*-benzimidazol-5-yl]fluoren-2-yl]-1*H*-imidazol-2-yl]-5-azaspiro[2.4]heptan-5-yl]-3-methyl-1-oxobutan-2-yl] carbamate

Product Code: LPS

CAS: 1256388-51-8

Formula: C₄₉H₅₄F₂N₆O₆

Molecular weight: 889.015

Assay: 98.0%~102.0%

3.2 Mixtures: N/A

4 FIRST AID MEASURES

4.1 Description of first aid measures

General: Get medical attention if symptoms occur. Contaminated clothing to be placed in closed container until disposal of decontamination.

Ingestion: If swallowed, rinse mouth with water thoroughly. Call a physician.

Skin: Remove contaminated clothing and shoes. Wash contact skin with soap and water.

Eyes: In the event of contact with the eyes, rinse thoroughly with clean water.

Inhalation: remove to fresh air, if not breathing, give artificial respiration, if breathing is difficult, give oxygen.

4.2 Most important symptoms and effects, both acute and delayed

N/A

4.3 Indication of immediate medical attention and special treatment needed

No specific recommendation

5 FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Small fires: foam, carbon dioxide or dry powder

Large fires : carbon dioxide or dry powder.

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

5.2 Special hazards arising from the substance or mixture

The substance: combustible.

5.3 Special protective actions for fire-fighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6 ACCIDENTAL RELEASE OF MATERIAL

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See section 8 of the MSDS for personal protective Equipment.

6.2 Environmental Precautions

Do not discharge into drains, water courses or onto the ground. Spillage: for a large spillage, contain the spillage by bunding.

6.3 Methods and material for containment and cleaning up

Containers with collected spillage must be properly labeled with correct contents and hazard symbol. Container must be kept tightly closed. Absorb with sand or other inert absorbent. To clean the floor and all objects contaminated by this material, use an appropriate solvent. Flush area with plenty of water. Incinerate in suitable combustion chamber.

7 HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with eyes, skin, and clothing. No special precautions are necessary beyond normal good practices. See Section 8 of the MSDS for additional personal

7.2 Conditions for safe storage, including any incompatibilities

Storage condition: Cool, dry place with adequate ventilation.

7.3 Specific end uses

N/A

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

None of the components have assigned exposure limits

8.2 Exposure controls

Eye / face protection: Safety Glasses

Skin protection: Use protective gloves made of: Nitrile, polyvinyl chloride(PVC)

Respiratory protection: If ventilation is insufficient, suitable respiratory protection must be provide.

Other: Wear suitable protective clothing is a good industrial hygiene practice to minimize skin contact.

Thermal hazards: N/A

8.3 Environmental exposure controls

N/A

9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

[delete those not applicable or add new parameters if needed.

Use correct EU units and avoid vague descriptions such as 'poorly soluble', 'high melting point', 'not very viscous']

Appearance : White to off-white powder

Odour: Odorless

Odour threshold: N/A

pH: N/A

Freezing/Melting Point: N/A

Initial boiling point and boiling range: N/A

Flash Point: N/A

Evaporation rate: N/A

Flammability (solids and gases): N/A

Upper/lower flammability or explosive limits: N/A

Vapour Pressure, Pa at temperature degree C : N/A

Relative Density (at degree C): N/A

Solubility in water and solvents (mg/l): N/A
Partition coefficient : N/A
Autoignition temperature : N/A
Decomposition temperature (degree C): N/A
Viscosity (at degree C): N/A
Explosive properties: N/A
Oxidizing properties: N/A

9.2 Other information

N/A

10 STABILITY AND

10.1 Reactivity

No other information noted.

10.2 Chemical stability

Stable

10.3 Possibility of hazardous reactions

N/A

10.4 Conditions to Avoid

N/A

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Thermal decomposition or combustion may liberate carbon oxide and other toxic gases.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

(a) acute toxicity

N/A

(b) skin corrosion/irritation

N/A

(c) serious eye damage/irritation

N/A

(d) respiratory or skin sensitization

N/A

(e) germ cell mutagenicity

N/A

(f) carcinogenicity

N/A

(g) reproductive toxicity

N/A

(h) STOT-single exposure

N/A

(i) STOT-repeated exposure

N/A

(j) aspiration hazard.



N/A

12. ECOLOGICAL INFORMATION

12.1 Toxicity

N/A

12.2 Persistence and degradability

N/A

12.3 Bioaccumulative potential

N/A

12.4. Mobility in soil

N/A

12.5. Results of PBT and vPvB assessment

N/A

12.6. Other adverse effects

N/A

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Contaminated packages should be as empty as possible. Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal. Recycle following cleaning or dispose of at an authorized site.

14. TRANSPORT INFORMATION

14.1 UN Number: N/A

14.2 UN Proper Shipping Name: N/A

14.3 Transport hazard class(es): N/A

14.4 Packing group: N/A

14.5 Environmental hazards: N/A

14.6 Special precautions for user: N/A

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

N/A

15. REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Abide by EU regulations.

15.2 Chemical Safety Assessment

N/A

16. OTHER INFORMATION

N/A