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

1.1. Product identifier

Product Name Meropenem for Injection, USP (Hospira Inc.)

Product Code(s) PZ03110
Trade Name: Not applicable

Chemical Family: Carbapenem antibiotic

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

Recommended Use Pharmaceutical product used as antibiotic agent

1.3. Details of the supplier of the safety data sheet

Hospira, A Pfizer Company Pfizer Ireland Pharmaceuticals

275 North Field Drive OSG Building

Lake Forest, Illinois 60045 Ringaskiddy, Co. Cork.

1-800-879-3477 Ireland

+353 21 4378701

E-mail address pfizer-MSDS@pfizer.com

1.4. Emergency telephone number

Emergency Telephone Chemtrec 1-800-424-9300 International Chemtrec (24 hours):+1-703-527-3887

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

GHS - Classification: Regulated according to Regulation (EC) 1272/2008 and/or other applicable regulations.

Serious eye damage/eye irritationCategory 2- (H319)Respiratory sensitizationCategory 1- (H334)Skin sensitizationCategory 1- (H317)Hazardous to the aquatic environment - acuteCategory 1- (H400)Hazardous to the aquatic environment - chronicCategory 1- (H410)

OSHA Classification

Hazards not otherwise classified (HNOC)

Not applicable

Hazards classified under paragraph (d)(1)(ii) of 1910.1200

Not applicable



Signal word **Hazard statements** Danger

H317 - May cause an allergic skin reaction

H319 - Causes serious eye irritation

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

H410 - Very toxic to aquatic life with long lasting effects

1272/2008)

Precautionary Statements - EU (§28, P261 - Avoid breathing dust/fume/gas/mist/vapors/spray

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P284 - Wear respiratory protection

P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position

comfortable for breathing

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing P308 + P313 - IF exposed or concerned: Get medical advice/attention

P362 - Take off contaminated clothing and wash before reuse

P273 - Avoid release to the environment

P391 - Collect spillage

P501 - Dispose of contents/container in accordance with local, regional, national, and

international regulations as applicable

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

2.3. Other hazards

Other hazards An Occupational Exposure Value has been established for one or more of the ingredients

(see Section 8).

PBT & vPvB The product does not contain any substance(s) classified as PBT or vPvB.

This product does not contain any known or suspected endocrine disruptors. **Endocrine Disruptor Information**

Note: This document has been prepared in accordance with standards for workplace safety, which

> require the inclusion of all known hazards of the product or its ingredients regardless of the potential risk. The precautionary statements and warnings included may not apply in all cases. Your needs may vary depending upon the potential for exposure in your workplace.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Substances Not applicable

3.2 Mixtures

Hazardous

Chemical name	Weight-%	REACH registration number	EC No (EU Index No)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Meropenem Trihydrate (CAS #: 119478-56-7)	80 - 85		Not Listed	Resp Sens. 1 (H334) Skin Sens. 1 (H317)) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	Not classified	10	10
Sodium carbonate (CAS #: 497-19-8)	10 - 15		207-838-8 (011-005-00-2)	Eye Irrit. 2 (H319)	Not classified	No data available	No data available

Full text of H- and EUH-phrases: see section 16

Acute Toxicity Estimate

Chemical name	Oral LD50 mg/kg	Dermal LD50	Inhalation LC50 - 4	Inhalation LC50 - 4	Inhalation LC50 - 4
		mg/kg	hour - dust/mist - mg/L	hour - vapor - mg/L	hour - gas - ppm
Meropenem Trihydrate 119478-56-7	> 5000 mg/kg	No data available	No data available	No data available	No data available
Sodium carbonate 497-19-8	4090	2000	1.15	No data available	No data available

This product does not contain candidate substances of very high concern at a concentration >=0.1% (Regulation (EC) No. 1907/2006 (REACH), Article 59).

Additional information

Ingredient(s) indicated as hazardous have been assessed under standards for workplace safety.

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Remove to fresh air. Seek immediate medical attention/advice. Inhalation

Eye contact If symptoms persist, call a physician.

Skin contact Wash skin with soap and water. If skin irritation persists, call a physician.

Ingestion Never give anything by mouth to an unconscious person. Wash out mouth with water. Do

not induce vomiting unless directed by medical personnel. Seek medical attention

immediately.

4.2. Most important symptoms and effects, both acute and delayed

Most important symptoms and

effects

For information on potential signs and symptoms of exposure, See Section 2 - Hazards

Identification and/or Section 11 - Toxicological Information.

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4.3. Indication of any immediate medical attention and special treatment needed

Note to physicians None.

Section 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Dry chemical, CO2, alcohol-resistant foam or water spray. **Suitable Extinguishing Media**

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the

chemical

Fine particles (such as dust and mists) may fuel fires/explosions.

Hazardous combustion products Formation of toxic gases is possible during heating or fire. May include oxides of carbon,

nitrogen and products of sulfur.

Explosion data

Sensitivity to mechanical impact No information available. No information available. Sensitivity to static discharge

5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

Use personal protection equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Personnel involved in clean-up should wear appropriate personal protective equipment (see

Section 8). Minimize exposure.

Use personal protection recommended in Section 8. For emergency responders

6.2. Environmental precautions

Place waste in an appropriately labeled, sealed container for disposal. Care should be **Environmental precautions**

taken to avoid environmental release.

6.3. Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so. Methods for containment

Contain the source of the spill or leak. Collect spilled material by a method that controls dust Methods for cleaning up

generation. Avoid use of a filtered vacuum to clean spills of dry solids. Clean contaminated

surface thoroughly.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

See section 8 for more information. See section 13 for more information. Reference to other sections

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Minimize dust generation and accumulation. Avoid breathing Advice on safe handling

dust/fume/gas/mist/vapors/spray. Avoid contact with skin, eyes or clothing. When handling,

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> use appropriate personal protective equipment (see Section 8). Wash thoroughly after handling. Releases to the environment should be avoided. Review and implement appropriate technical and procedural waste water and waste disposal measures to prevent occupational exposure or environmental releases. Potential points of process emissions of this material to the atmosphere should be controlled with dust collectors, HEPA filtration systems or other equivalent controls. Refer to Section 12 - Ecological Information, for

information on potential effects on the environment.

Handle in accordance with good industrial hygiene and safety practice. General hygiene considerations

7.2. Conditions for safe storage, including any incompatibilities

Store as directed by product packaging. **Storage Conditions**

7.3. Specific end use(s)

Specific use(s) Pharmaceutical drug product.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure Limits

Refer to available public information for specific member state Occupational Exposure Limits.

Meropenem Trihydrate

Germany TRGS DS

RS Sodium carbonate

Czech Republic 5 mg/m³

Ceiling: 10 mg/m³

Romania TWA: 1 mg/m³; STEL: 3 mg/m³;

Russia MAC: 2 mg/m3

Skin

Pfizer Occupational Exposure Band

The purpose of the Occupational Exposure Band (OEB) classification system is to separate (OEB) Statement:

> substances into different Hazard categories when the available data are sufficient to do so, but inadequate to establish an Occupational Exposure Limit (OEL). The OEB given is based upon an analysis of all currently available data; as such, this value may be subject to

revision when new information becomes available.

Meropenem Trihydrate

Pfizer Occupational Exposure

Band (OEB):

OEB 1 - Sensitizer (control exposure to the range of 1000ug/m³ to 3000ug/m³)

8.2. Exposure controls

Engineering controls Engineering controls should be used as the primary means to control exposures. General

room ventilation is adequate unless the process generates dust, mist or fumes. Keep airborne contamination levels below the exposure limits listed above in this section. Contact your safety and health professional or safety equipment supplier for assistance in

Personal protective equipment

selecting the correct protective clothing/equipment based on an assessment of the

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workplace conditions, other chemicals used or present in the workplace and specific operational processes. Refer to applicable national standards and regulations in the

selection and use of personal protective equipment (PPE).

Eye/face protection Wear safety glasses or goggles if eye contact is possible. (Eye protection must meet the

standards in accordance with EN166, ANSI Z87.1 or international equivalent.).

Hand protection Impervious gloves (e.g. Nitrile, etc.) are recommended if skin contact with drug product is

possible and for bulk processing operations. (Protective gloves must meet the standards in

accordance with EN374, ASTM F1001 or international equivalent.).

Skin and body protection Impervious protective clothing is recommended if skin contact with drug product is possible

and for bulk processing operations. (Protective clothing must meet the standards in

accordance with EN13982, ANSI 103 or international equivalent.).

Respiratory protectionUnder normal conditions of use, if the applicable Occupational Exposure Limit (OEL) is

exceeded, wear an appropriate respirator with a protection factor sufficient to control exposures to below the OEL (e.g. particulate respirator with a half mask, P3 filter). (Respirators must meet the standards in accordance with EN140, EN143, ASTM F2704-10

or international equivalent.).

Thermal hazards No information available.

Environmental exposure controls No information available.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance Crystalline powder

Physical state Powder

ColorWhite to pale yellowOdorNo information available.Odor thresholdNo information available

<u>Property</u> <u>Values</u>

Melting point / freezing point

Boiling point or initial boiling point and boiling range
Flammability (solid, gas)

No data available
No data available
No data available

Lower and upper explosion limit/flammability limit

Lower explosion limit
Upper explosion limit
No data available
No data available
No data available
Autoignition temperature
No data available

Decomposition temperature

SADT (°C) No data available

OH 7.3-8.3

pH (as aqueous solution)

Kinematic viscosity

Dynamic viscosity

No data available

No data available

No data available

Solubility No data available Soluble

Vapor pressureNo data availableDensity and/or relative densityNo data availableBulk densityNo data availableLiquid DensityNo data availableVapor densityNo data available

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Particle characteristics

Particle Size No information available No information available **Particle Size Distribution**

Partition Coefficient: (Method, pH, Endpoint, Value)

Meropenem Trihydrate Measured Log D -3

9.2. Other information

Molecular formula Mixture Molecular weight Mixture

9.2.1. Information with regard to physical hazard classes

No information available

9.2.2. Other safety characteristics

No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No information available. Reactivity

10.2. Chemical stability

Stable under normal conditions. Stability

Explosion data

Sensitivity to mechanical impact No information available. Sensitivity to static discharge No information available.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions No information available.

10.4. Conditions to avoid

Conditions to avoid Fine particles (such as dust and mists) may fuel fires/explosions.

10.5. Incompatible materials

Incompatible materials As a precautionary measure, keep away from strong oxidizers.

10.6. Hazardous decomposition products

Hazardous decomposition products Thermal decomposition products include oxides of carbon, nitrogen, and sulfur.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

The information included in this section describes the potential hazards of the individual **General Information:**

ingredients

Short term Individuals who are allergic to penicillin or carbapenem antibiotics could have allergic

reaction, possibly severe (anaphylactic).

Known Clinical Effects: Ingestion of this material may cause effects similar to those generally seen in clinical use of

> antibiotics including gastrointestinal irritation, vomiting, transient diarrhea, nausea, and abdominal pain. The most common side effect seen during clinical use is skin rash. Gastrointestinal effects such as diarrhea, nausea and vomiting also occur frequently

following oral administration.

Acute toxicity Based on available data, the classification criteria are not met.

Classification is based on mixture calculation methods based on component data. Serious eye damage/eye irritation

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

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Respiratory or skin sensitization Classification is based on mixture calculation methods based on component data.

STOT - single exposure Based on available data, the classification criteria are not met. Based on available data, the classification criteria are not met. STOT - repeated exposure Based on available data, the classification criteria are not met. Reproductive toxicity Germ cell mutagenicity Based on available data, the classification criteria are not met. Carcinogenicity Based on available data, the classification criteria are not met. **Aspiration hazard** Based on available data, the classification criteria are not met.

Acute Toxicity: (Species, Route, End Point, Dose)

Meropenem Trihydrate

Rat Oral LD50 > $\overline{5000}$ mg/kg Mouse Oral LD50 > 5000 mg/kg Rat Intravenous LD50 2850 mg/kg

Sodium carbonate

Rat Oral LD50 4090 mg/kg

Chemical name		Oral LD50	Dermal LD50	Inhalation LC50	
	Sodium carbonate	= 4090 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	= 2300 mg/m ³ (Rat) 2 h	

Acute Toxicity Comments:

A greater than symbol (>) indicates that the toxicity endpoint being tested was not

achievable at the highest dose used in the test.

Irritation / Sensitization: (Study Type, Species, Severity)

Sodium carbonate

Eye Irritation Rabbit Severe Skin Irritation Rabbit Mild

Repeated Dose Toxicity: (Duration, Species, Route, Dose, End Point, Target Organ)

Meropenem Trihydrate

1 Month(s) Dog No route specified 125 mg/kg/day NOAEL Blood 100 mg/kg/day NOAEL Blood 3 Month(s) Dog No route specified

3 Month(s) Rat Intravenous 1000 mg/kg/day NOAEL Kidney

3 Month(s) Dog Intravenous 500 mg/kg/day NOAEL Adrenal gland, Blood 6 Month(s) Rat Intravenous 1000 mg/kg/day NOAEL None identified

6 Month(s) Dog Intravenous 500 mg/kg/day NOAEL None identified

Reproduction & Development Toxicity: (Duration, Species, Route, Dose, End Point, Effect(s))

Meropenem Trihydrate

Embryo / Fetal Development Monkey No route specified 360 mg/kg/day NOAEL No evidence of impaired fertility or harm to the fetus

Embryo / Fetal Development Rat No route specified 250 mg/kg/day NOAEL No evidence of impaired fertility or harm to the

Reproductive & Fertility Rat Intravenous 1000 mg/kg/day NOAEL Fertility, Reproductive toxicity Peri-/Postnatal Development Rat Intravenous 1000 mg/kg/day NOAEL No effects at maximum dose

Genetic Toxicity: (Study Type, Cell Type/Organism, Result)

Meropenem Trihydrate

Bacterial Mutagenicity (Ames) Negative Cytogenetics Human Lymphocytes Negative In Vivo Micronucleus Mouse Negative

Carcinogenicity None of the components of this formulation are listed as a carcinogen by IARC, NTP or

OSHA.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

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Endocrine disrupting properties Based on available data, the classification criteria are not met.

11.2.2. Other information

Other adverse effects No information available.

Section 12: ECOLOGICAL INFORMATION

Releases to the environment should be avoided. The following information is available for **Environmental Overview:**

> the individual ingredients. Toxic to aquatic organisms. May cause long term adverse effects in the aquatic environment. Classification is based on mixture calculation methods

based on component data.

12.1. Toxicity

Aquatic Toxicity: (Species, Method, End Point, Duration, Result)

Meropenem Trihydrate

Anabaena flos-aquae (Cyanobacteria) OECD ErC50 72 hours 0.026 mg/L Anabaena flos-aquae (Cyanobacteria) OECD NOEC 72 hours

Daphnia Magna (Water Flea) OECD EC50 48 hours > 900 mg/L

Lepomis macrochirus (Bluegill Sunfish) OECD LC50 96 hours 320 mg/L

Sodium carbonate

Lepomis macrochirus (Bluegill Sunfish) N/A LC50 96 Hours 320 mg/L

Aquatic Toxicity Comments: A greater than (>) symbol indicates that acute ecotoxicity was not observed at the maximum

solubility. Since the substance is insoluble in aqueous solutions above this concentration,

an acute ecotoxicity value (i.e. LC/EC50) is not achievable.

12.2. Persistence and degradability

Persistence and degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation

Partition Coefficient: (Method, pH, Endpoint, Value)

Meropenem Trihydrate Measured Log D -3

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment

Chemical name	PBT and vPvB assessment		
Sodium carbonate	Not PBT/vPvB PBT assessment does not apply		

12.6. Endocrine disrupting properties

Endocrine disrupting properties Based on available data, the classification criteria are not met.

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12.7. Other adverse effects

Other adverse effects No information available.

PMT or vPvM properties Based on available data, the classification criteria are not met.

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products

Dispose of waste in accordance with all applicable laws and regulations. Member State specific and Community specific provisions must be considered. Considering the relevant known environmental and human health hazards of the material, review and implement appropriate technical and procedural wastewater and waste disposal measures to prevent occupational exposure and environmental release. It is recommended that waste minimization be practiced. The best available technology should be utilized to prevent environmental releases. This may include destructive techniques for waste and wastewater.

Section 14: TRANSPORT INFORMATION

The following refers to all modes of transportation unless specified below.

This material is regulated for transportation as a hazardous material/dangerous good.

UN number: UN 3077

UN proper shipping name: Environmentally Hazardous Substance, Solid, n.o.s (meropenem trihydrate)

Transport hazard class(es): Ш Packing group:

Environmental Hazard(s): Marine Pollutant

5 kg/5L Exception:

UN3082 and UN3077 materials contained in good quality packaging in the quantities listed below are not subject to the dangerous goods transportation regulations by any mode:

- * Single packagings containing a net quantity of 5 liters or less for liquids or a net mass of 5 kg or less for solids.
- * Combination packagings containing a net quantity per inner packaging of 5 liters or less for liquids or a net mass of 5 kg or less for solids.

Section 15: REGULATORY INFORMATION

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

Meropenem Trihydrate

CERCLA/SARA Section 313 de minimus % Not Listed **California Proposition 65** Not Listed **EINECS** Not Listed Standard for Uniform Scheduling of Medicines and Schedule 4

Poisons (SUSMP)

Sodium carbonate

CERCLA/SARA Section 313 de minimus % Not Listed **California Proposition 65** Not Listed **TSCA** Present **EINECS** 207-838-8

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AICS

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)

Present Schedule 5 Schedule 6

National regulations

Germany

Chemical Prohibition Ordinance (ChemVerbotsV)

Not applicable

TRGS 905 Not applicable

Switzerland

Ordinance on the Incentive Tax on Volatile Organic Compounds (OVOC) SR 814.018 Not applicable Not applicable Storage of Hazardous Material WPO (GSchV) SR 814.201; WPA (GSchG) SR 814.20 Not applicable Major Accidents Ordinance SR 814.012 Not applicable

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Authorizations and/or restrictions on use:

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical name	Restricted substance per REACH	Substance subject to authorization per	
	Annex XVII	REACH Annex XIV	
Sodium carbonate	75	-	
497-19-8			

Persistent Organic Pollutants

Not applicable

Ozone-depleting substances (ODS) Regulation (EU) 2024/590

Not applicable.

Explosives Precursors Marketing and Use (2019/1148)

Not applicable

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing Chemicals Inventory

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

TCSI - Taiwan Chemical Substance Inventory

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15.2. Chemical safety assessment

No information available **Chemical Safety Report**

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of any hazard and/or precautionary statements referred to under Sections 2-15

H317 - May cause an allergic skin reaction. H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled. H400 - Very toxic to aquatic life. H410 - Very toxic to aquatic life with long lasting effects. H319 - Causes serious eye irritation.

Data Sources: Pfizer proprietary drug development information. Publicly available toxicity information.

Updated Section 1 - Identification of the Substance/Preparation and the Reason for revision

Company/Undertaking. Updated Section 2 - Hazard Identification. Updated Section 3 -Composition / Information on Ingredients. Updated Section 11 - Toxicology Information.

Updated Section 12 - Ecological Information.

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Prepared By Pfizer Global Environment, Health, and Safety

Pfizer Inc believes that the information contained in this Safety Data Sheet is accurate, and while it is provided in good faith, it is without warranty of any kind, expressed or implied. If data for a hazard are not included in this document there is no known information at this time.