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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)Acute aquatic toxicityCategory 1 - (H400)Chronic aquatic toxicityCategory 1 - (H410)

2.2. Label elements

Signal word Danger

Hazard statements H317 - May cause an allergic skin reaction

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H319 - Causes serious eye irritation

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

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H410 - Very toxic to aquatic life with long lasting effects

Precautionary Statements

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

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

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 all local and national regulations







2.3. Other hazards Other hazards

An Occupational Exposure Value has been established for one or more of the ingredients (see Section 8).

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

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Chemical name	Weight-%	REACH Registration Number	EC 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 Listed	10	10

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Sodium carbonate	10 - 15	207-838-8	Eye Irrit. 2	Not Listed	No data	No data
(CAS #: 497-19-8)			(H319)		available	available

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

Acute Toxicity Estimate

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapor - mg/L	
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

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

Inhalation Remove exposed person to fresh air. Refer to a physician if subject experiences difficulty

breathing. If breathing has stopped, a trained person should perform cardiopulmonary

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resuscitation (CPR) and seek immediate medical assistance.

Eye contact Flush eye(s) immediately with plenty of water. If irritation occurs or persists, get medical

attention.

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.

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

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

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,

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nitrogen and products of sulfur.

5.3. Advice for firefighters

Special protective equipment 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.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

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

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**

Avoid use of a filtered vacuum to clean spills of dry solids. Contain the source of the spill or Methods for cleaning up

leak. Clean spill area thoroughly. Collect spilled material by a method that controls dust

generation.

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

6.4. Reference to other sections

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

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling

Minimize dust generation and accumulation. Avoid breathing dust. Avoid contact with eyes, skin and clothing. When handling, 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

Storage Conditions Store as directed by product packaging.

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.

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Sodium carbonate

Czech Republic 5 mg/m³

Ceiling: 10 mg/m³
Romania 1 mg/m³

STEL: 3 mg/m³
Russia MAC: 2 mg/m³

Skin

Pfizer Occupational Exposure Band

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

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

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revision when new information becomes available.

Meropenem Trihydrate

Pfizer Occupational Exposure

Band (OEB):

8.2. Exposure controls

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

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.

Environmental exposure controls No information available.

Personal protective equipment Contact your safety and health professional or safety equipment supplier for assistance in

selecting the correct protective clothing/equipment based on an assessment of the 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 protection Under 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.)

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

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical stateCrystalline powderColorWhite to pale yellowOdorNo information available.

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Odor threshold No information available

Molecular formulaMixtureMolecular weightMixture

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Property Values 7.3-8.3

Melting point / freezing point No data available
Boiling point / boiling range

Flash point

Evaporation rate

Flammability (solid, gas)

No information available

No data available

No data available

Flammability Limit in Air
Upper flammability limit:
No data available

Lower flammability limit: No data available

Vapor pressureNo data availableVapor densityNo data availableRelative densityNo data availableWater solubilitySoluble

Solubility(ies)
No data available
Partition coefficient
No data available
Autoignition temperature
No data available
Decomposition temperature
No data available
Kinematic viscosity
No data available
Dynamic viscosity
No data available
No data available

Dynamic viscosity
Particle characteristics

Particle SizeNo information availableParticle Size DistributionNo information availableExplosive propertiesNo information available

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

Meropenem Trihydrate
Measured Log D -3

9.2. Other information

No information available

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

Reactivity No data available.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact No data available. **Sensitivity to Static Discharge** No data 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.

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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

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

ingredients

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

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.

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

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.

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

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

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

Meropenem Trihydrate

Rat Oral LD50 > 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 3 Month(s) Dog No route specified 100 mg/kg/day NOAEL Blood 3 Month(s) Rat Intravenous 1000 mg/kg/day NOAEL Kidney

500 mg/kg/day NOAEL Adrenal gland, Blood 3 Month(s) Dog Intravenous

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))

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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 fetus

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

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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

Endocrine disrupting properties No information available.

11.2.2. Other information

Other adverse effects No information available.

Section 12: ECOLOGICAL INFORMATION

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

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

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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 0.015 mg/L

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)

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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	The substance is not PBT / vPvB PBT assessment does		
	not apply		

12.6. Endocrine disrupting properties

Endocrine disrupting properties No information available.

12.7. Other adverse effects

No information available.

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

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): 9
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.

Special precautions for user: Not applicable

Section 15: REGULATORY INFORMATION

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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
AICS Present
Standard for Uniform Scheduling of Medicines and
Poisons (SUSMP) Schedule 6

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 - 497-19-8	Use restricted. See item 75.		

Persistent Organic Pollutants

Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

Legend:

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

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

15.2. Chemical safety assessment

Chemical Safety Report No information available

Section 16: OTHER INFORMATION

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

Full text of H-Statements referred to under section 3

Sensitization, skin-Cat.1; H317 - May cause an allergic skin reaction. Sensitization, respiratory-Cat.1; H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled. Hazardous to the aquatic environment, acute toxicity-Cat.1; H400 - Very toxic to aquatic life. Hazardous to the aquatic environment, chronic toxicity-Cat.1; H410 - Very toxic to aquatic life with long lasting effects. Serious eye damage/eye irritation-Cat.2A; H319 - Causes serious eye irritation.

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

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

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

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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.