

Olmesartan / Amlodipine Besylate / Hydrochlorothiazide Formulation

Version 1.0 Revision Date: 07.10.2019 SDS Number: 4944966-00001 Date of last issue: -
Date of first issue: 07.10.2019

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : Olmesartan / Amlodipine Besylate / Hydrochlorothiazide Formulation

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

Use of the Substance/Mixture : Pharmaceutical

1.3 Details of the supplier of the safety data sheet

Company : MSD
117 16th Road
07033 Halfway house, Midrand, South Africa

Telephone : +27 11 655 3000

Telefax : 908-735-1496

E-mail address of person responsible for the SDS : EHSDATASTEWARD@msd.com

1.4 Emergency telephone number

1-908-423-6000

SECTION 2: Hazards identification


2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Eye irritation, Category 2	H319: Causes serious eye irritation.
Reproductive toxicity, Category 1A	H360D: May damage the unborn child.
Specific target organ toxicity - repeated exposure, Category 2	H373: May cause damage to organs through prolonged or repeated exposure.
Long-term (chronic) aquatic hazard, Category 3	H412: Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms : 

Signal word : Danger

Hazard statements : H319 Causes serious eye irritation.
H360D May damage the unborn child.
H373 May cause damage to organs through prolonged or

Olmesartan / Amlodipine Besylate / Hydrochlorothiazide Formulation

Version 1.0 Revision Date: 07.10.2019 SDS Number: 4944966-00001 Date of last issue: -
Date of first issue: 07.10.2019

repeated exposure.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P201 Obtain special instructions before use.
P260 Do not breathe dust.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.

Hazardous components which must be listed on the label:

Olmesartan
Hydrochlorothiazide

2.3 Other hazards

Contact with dust can cause mechanical irritation or drying of the skin.
May form explosive dust-air mixture during processing, handling or other means.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Olmesartan	144689-63-4	Acute Tox.4; H302 Eye Irrit.2; H319 Repr.1A; H360D	>= 10 - < 20
Hydrochlorothiazide	58-93-5 200-403-3	STOT RE1; H372	>= 1 - < 10
Amlodipine Besylate	652969-01-2	Acute Tox.4; H302 Eye Irrit.2; H319 Aquatic Chronic2; H411	>= 2,5 - < 10

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice.

Olmesartan / Amlodipine Besylate / Hydrochlorothiazide Formulation

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	07.10.2019	4944966-00001	Date of first issue: 07.10.2019

- Protection of first-aiders : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).
- If inhaled : If inhaled, remove to fresh air.
Get medical attention.
- In case of skin contact : In case of contact, immediately flush skin with soap and plenty of water.
Remove contaminated clothing and shoes.
Get medical attention.
Wash clothing before reuse.
Thoroughly clean shoes before reuse.
- In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
If easy to do, remove contact lens, if worn.
Get medical attention.
- If swallowed : If swallowed, DO NOT induce vomiting.
Get medical attention.
Rinse mouth thoroughly with water.

4.2 Most important symptoms and effects, both acute and delayed

- Risks : Causes serious eye irritation.
May damage the unborn child.
May cause damage to organs through prolonged or repeated exposure.
- Contact with dust can cause mechanical irritation or drying of the skin.

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : Treat symptomatically and supportively.
-

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media : Water spray
Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry chemical
- Unsuitable extinguishing media : None known.

5.2 Special hazards arising from the substance or mixture

- Specific hazards during fire-fighting : Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a

Olmesartan / Amlodipine Besylate / Hydrochlorothiazide Formulation

Version 1.0	Revision Date: 07.10.2019	SDS Number: 4944966-00001	Date of last issue: - Date of first issue: 07.10.2019
----------------	------------------------------	------------------------------	--

potential dust explosion hazard.
Exposure to combustion products may be a hazard to health.

Hazardous combustion products : Carbon oxides
Nitrogen oxides (NO_x)
Chlorine compounds
Sulphur oxides

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.
Remove undamaged containers from fire area if it is safe to do so.
Evacuate area.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.
Follow safe handling advice and personal protective equipment recommendations.

6.2 Environmental precautions

Environmental precautions : Discharge into the environment must be avoided.
Prevent further leakage or spillage if safe to do so.
Retain and dispose of contaminated wash water.
Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Sweep up or vacuum up spillage and collect in suitable container for disposal.
Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).
Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

Olmesartan / Amlodipine Besylate / Hydrochlorothiazide Formulation

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	07.10.2019	4944966-00001	Date of first issue: 07.10.2019

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- | | | |
|-------------------------|---|--|
| Technical measures | : | Static electricity may accumulate and ignite suspended dust causing an explosion.
Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. |
| Local/Total ventilation | : | If sufficient ventilation is unavailable, use with local exhaust ventilation. |
| Advice on safe handling | : | Do not get on skin or clothing.
Do not breathe dust.
Do not swallow.
Do not get in eyes.
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment
Keep container tightly closed.
Minimize dust generation and accumulation.
Keep container closed when not in use.
Keep away from heat and sources of ignition.
Take precautionary measures against static discharges.
Take care to prevent spills, waste and minimize release to the environment. |
| Hygiene measures | : | If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.
The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls. |

7.2 Conditions for safe storage, including any incompatibilities

- | | | |
|---|---|---|
| Requirements for storage areas and containers | : | Keep in properly labelled containers. Store locked up. Keep tightly closed. Store in accordance with the particular national regulations. |
| Advice on common storage | : | Do not store with the following product types:
Strong oxidizing agents
Organic peroxides
Explosives
Gases |

7.3 Specific end use(s)

- | | | |
|-----------------|---|-------------------|
| Specific use(s) | : | No data available |
|-----------------|---|-------------------|

Olmesartan / Amlodipine Besylate / Hydrochlorothiazide Formulation

Version 1.0 Revision Date: 07.10.2019 SDS Number: 4944966-00001 Date of last issue: -
Date of first issue: 07.10.2019

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Cellulose	9004-34-6	TWA OEL-RL (Respirable dust)	5 mg/m ³	ZA OEL
Further information	Recommended Limit			
		TWA OEL-RL (inhalable dust)	10 mg/m ³	ZA OEL
Further information	Recommended Limit			
		STEL OEL-RL (Dust)	20 mg/m ³	ZA OEL
Further information	Recommended Limit			
Starch	9005-25-8	TWA OEL-RL (Respirable dust)	5 mg/m ³	ZA OEL
Further information	Recommended Limit			
		TWA OEL-RL (inhalable dust)	10 mg/m ³	ZA OEL
Further information	Recommended Limit			
Olmesartan	144689-63-4	TWA	30 µg/m ³ (OEB 3)	Internal
		Wipe limit	300 µg/100 cm ²	Internal
Hydrochlorothiazide	58-93-5	TWA	100 µg/m ³ (OEB 2)	Internal
Amlodipine Besylate	652969-01-2	TWA	20 µg/m ³ (OEB 3)	Internal
		Wipe limit	100 µg/100 cm ²	Internal

8.2 Exposure controls

Engineering measures

All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment. Containment technologies suitable for controlling compounds are required to control at source and to prevent migration of the compound to uncontrolled areas (e.g., open-face containment devices).

Minimize open handling.

Personal protective equipment

Eye protection : Wear safety glasses with side shields or goggles.
If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles.
Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.

Hand protection

Material : Chemical-resistant gloves

Olmesartan / Amlodipine Besylate / Hydrochlorothiazide Formulation

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	07.10.2019	4944966-00001	Date of first issue: 07.10.2019

Remarks	:	Consider double gloving.
Skin and body protection	:	Work uniform or laboratory coat. Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces. Use appropriate degowning techniques to remove potentially contaminated clothing.
Respiratory protection	:	If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.
Filter type	:	Particulates type (P)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	powder
Colour	:	No data available
Odour	:	No data available
Odour Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	No data available
Flash point	:	Not applicable
Evaporation rate	:	Not applicable
Flammability (solid, gas)	:	May form explosive dust-air mixture during processing, handling or other means.
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	Not applicable
Relative vapour density	:	Not applicable
Relative density	:	No data available
Density	:	No data available
Solubility(ies)		
Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	Not applicable
Auto-ignition temperature	:	No data available

Olmesartan / Amlodipine Besylate / Hydrochlorothiazide Formulation

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	07.10.2019	4944966-00001	Date of first issue: 07.10.2019

Decomposition temperature : No data available

Viscosity
Viscosity, kinematic : Not applicable

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

9.2 Other information

Molecular weight : No data available

Particle size : No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Not classified as a reactivity hazard.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : May form explosive dust-air mixture during processing, handling or other means.
Can react with strong oxidizing agents.

10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.
Avoid dust formation.

10.5 Incompatible materials

Materials to avoid : Oxidizing agents

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Information on likely routes of exposure : Inhalation
Skin contact
Ingestion
Eye contact

Acute toxicity

Not classified based on available information.

Product:

Olmesartan / Amlodipine Besylate / Hydrochlorothiazide Formulation

Version 1.0 Revision Date: 07.10.2019 SDS Number: 4944966-00001 Date of last issue: -
Date of first issue: 07.10.2019

Acute oral toxicity : Acute toxicity estimate: > 2.000 mg/kg
Method: Calculation method

Components:**Olmesartan:**

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg
LD50 (Mouse): > 2.000 mg/kg
LD50 (Dog): > 1.500 mg/kg

Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : Remarks: No data available

Hydrochlorothiazide:

Acute oral toxicity : LD50 (Rat): 10.000 mg/kg
LD50 (Mouse): 10.000 mg/kg

Acute toxicity (other routes of administration) : LD50 (Rat): 990 mg/kg
Application Route: Intravenous
LD50 (Dog): 250 mg/kg
Application Route: Intravenous

Amlodipine Besylate:

Acute oral toxicity : LD50 (Rat): 393 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Components:**Olmesartan:**

Remarks : No data available

Hydrochlorothiazide:

Species : Rabbit
Result : No skin irritation

Serious eye damage/eye irritation

Causes serious eye irritation.

Components:**Olmesartan:**

Species : Rabbit
Method : Draize Test

Olmesartan / Amlodipine Besylate / Hydrochlorothiazide Formulation

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	07.10.2019	4944966-00001	Date of first issue: 07.10.2019

Result : Moderate eye irritation

Hydrochlorothiazide:

Species : Rabbit
Result : Mild eye irritation

Amlodipine Besylate:

Species : Rabbit
Result : Severe irritation

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Components:

Olmesartan:

Exposure routes : Skin contact
Remarks : No data available

Germ cell mutagenicity

Not classified based on available information.

Components:

Olmesartan:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Test Type: Mutagenicity (in vitro mammalian cytogenetic test)
Result: negative

Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster lung cells
Result: positive

Test Type: Mouse Lymphoma
Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse
Cell type: Bone marrow
Application Route: Oral
Result: negative

Germ cell mutagenicity- Assessment : Weight of evidence does not support classification as a germ cell mutagen.

Olmesartan / Amlodipine Besylate / Hydrochlorothiazide Formulation

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	07.10.2019	4944966-00001	Date of first issue: 07.10.2019

Hydrochlorothiazide:

- Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative
- Test Type: Chromosomal aberration
Test system: Chinese hamster ovary cells
Result: negative
- Test Type: sister chromatid exchange assay
Test system: Chinese hamster ovary cells
Result: positive
- Test Type: in vitro assay
Test system: mouse lymphoma cells
Result: positive
- Genotoxicity in vivo : Test Type: Chromosomal aberration
Species: Chinese hamster
Cell type: Bone marrow
Result: negative
- Test Type: in vivo assay
Species: Mouse
Cell type: Bone marrow
Result: negative
- Germ cell mutagenicity- Assessment : Weight of evidence does not support classification as a germ cell mutagen.

Amlodipine Besylate:

- Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative
- Test Type: Chromosome aberration test in vitro
Result: negative

Carcinogenicity

Not classified based on available information.

Components:

Olmesartan:

Species : Rat
Application Route : Oral
Exposure time : 2 Years
Result : negative

Species : Mouse
Application Route : Oral
Exposure time : 6 Months
Result : negative

Olmesartan / Amlodipine Besylate / Hydrochlorothiazide Formulation

Version 1.0 Revision Date: 07.10.2019 SDS Number: 4944966-00001 Date of last issue: -
Date of first issue: 07.10.2019

Hydrochlorothiazide:

Species : Mouse, female
Application Route : Oral
Exposure time : 2 Years
Result : negative

Species : Mouse, male
Application Route : Oral
Exposure time : 2 Years
Result : equivocal

Species : Rat, male and female
Application Route : Oral
Exposure time : 2 Years
Result : negative

Amlodipine Besylate:

Species : Mouse
Application Route : Oral
Exposure time : 2 Years
Result : negative

Species : Rat
Application Route : Oral
Exposure time : 2 Years
Result : negative

Reproductive toxicity

May damage the unborn child.

Components:

Olmesartan:

Effects on fertility : Test Type: Fertility
Species: Rat
Application Route: Oral
Fertility: NOAEL: 1.000 mg/kg body weight
Result: No effects on fertility

Effects on foetal development : Test Type: Development
Species: Rat
Application Route: Oral
Dose: 1000 milligram per kilogram
Result: No teratogenic effects

Test Type: Development
Species: Rabbit
Application Route: Oral
Dose: 1 milligram per kilogram
Result: No teratogenic effects

Test Type: Development

Olmesartan / Amlodipine Besylate / Hydrochlorothiazide Formulation

Version 1.0	Revision Date: 07.10.2019	SDS Number: 4944966-00001	Date of last issue: - Date of first issue: 07.10.2019
----------------	------------------------------	------------------------------	--

Species: Rat
 Application Route: Oral
 Developmental Toxicity: LOAEL: \geq 1,6 mg/kg body weight
 Symptoms: Malformations were observed., Reduced body weight
 Result: Effects on postnatal development

Reproductive toxicity - Assessment : Positive evidence of adverse effects on development from human epidemiological studies.

Hydrochlorothiazide:

Effects on fertility : Test Type: Fertility
 Species: Rat, male and female
 Application Route: oral (feed)
 Fertility: NOAEL: 4 mg/kg body weight
 Result: Effects on fertility

Test Type: Fertility
 Species: Mouse, male and female
 Application Route: oral (feed)
 Fertility: NOAEL: 100 mg/kg body weight
 Result: Effects on fertility

Effects on foetal development : Test Type: Development
 Species: Mouse
 Application Route: Oral
 Developmental Toxicity: NOAEL: 3.000 mg/kg body weight
 Result: No teratogenic effects

Test Type: Development
 Species: Rat
 Application Route: Oral
 Developmental Toxicity: NOAEL: 1.000 mg/kg body weight
 Result: No teratogenic effects

Amlodipine Besylate:

Effects on fertility : Test Type: Fertility/early embryonic development
 Species: Rat
 Application Route: Ingestion
 Fertility: NOAEL: 10 mg/kg body weight
 Result: No effects on fertility

Test Type: Fertility/early embryonic development
 Species: Rabbit
 Application Route: Ingestion
 Fertility: NOAEL: 25 mg/kg body weight
 Result: No effects on fertility

Effects on foetal development : Test Type: Embryo-foetal development
 Species: Rat
 Application Route: Ingestion
 Developmental Toxicity: LOAEL: 10 mg/kg body weight

Olmesartan / Amlodipine Besylate / Hydrochlorothiazide Formulation

Version 1.0	Revision Date: 07.10.2019	SDS Number: 4944966-00001	Date of last issue: - Date of first issue: 07.10.2019
----------------	------------------------------	------------------------------	--

Result: Effects on foetal development

Test Type: Embryo-foetal development
 Species: Rabbit
 Application Route: Ingestion
 Developmental Toxicity: NOAEL: 10 mg/kg body weight
 Result: No effects on foetal development

Test Type: Embryo-foetal development
 Species: Mouse
 Application Route: Ingestion
 Developmental Toxicity: LOAEL: 1,6 mg/kg body weight
 Result: Effects on foetal development
 Remarks: Maternal toxicity observed.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Components:

Hydrochlorothiazide:

Target Organs : Kidney, Parathyroid gland
 Assessment : Causes damage to organs through prolonged or repeated exposure.

Repeated dose toxicity

Components:

Olmesartan:

Species : Rat
 NOAEL : 2.000 mg/kg
 Application Route : Oral
 Exposure time : 24 Months
 Remarks : No significant adverse effects were reported

Hydrochlorothiazide:

Species : Rat, male and female
 LOAEL : 10 mg/kg
 Application Route : Oral
 Exposure time : 2 yr
 Target Organs : Kidney, Parathyroid gland

Species : Mouse, male and female
 NOAEL : 300 - 550 mg/kg
 Application Route : Oral
 Exposure time : 2 yr
 Remarks : No significant adverse effects were reported

Species : Dog

Olmesartan / Amlodipine Besylate / Hydrochlorothiazide Formulation

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	07.10.2019	4944966-00001	Date of first issue: 07.10.2019

Application Route	: 50 - 200 mg/kg
Exposure time	: Oral
Target Organs	: 9 Months
	: Parathyroid gland

Amlodipine Besylate:

Species	: Rat
NOAEL	: 15 mg/kg
Application Route	: Oral
Exposure time	: 90 d
Remarks	: No significant adverse effects were reported

Aspiration toxicity

Not classified based on available information.

Components:

Hydrochlorothiazide:

No aspiration toxicity classification

Experience with human exposure

Components:

Olmesartan:

Eye contact	: Symptoms: Eye irritation
Ingestion	: Symptoms: hypotension
	Remarks: May cause harm to the unborn child.
	Based on Human Evidence

Hydrochlorothiazide:

Eye contact	: Symptoms: Eye irritation
Ingestion	: Symptoms: Dizziness, Headache, Fatigue, Nausea, Abdominal pain, hypotension, dry mouth, electrolyte imbalance, eye pain

Amlodipine Besylate:

Eye contact	: Symptoms: Severe irritation
Ingestion	: Symptoms: Nausea, Abdominal pain, Fatigue, Headache, Oedema, Palpitation

SECTION 12: Ecological information

12.1 Toxicity

Components:

Hydrochlorothiazide:

Toxicity to fish	: LC50 (Pimephales promelas (fathead minnow)): > 500 mg/l
	Exposure time: 96 h
Toxicity to daphnia and other	: EC50 (Daphnia magna (Water flea)): > 500 mg/l

Olmesartan / Amlodipine Besylate / Hydrochlorothiazide Formulation

Version 1.0	Revision Date: 07.10.2019	SDS Number: 4944966-00001	Date of last issue: - Date of first issue: 07.10.2019
----------------	------------------------------	------------------------------	--

aquatic invertebrates Exposure time: 48 h

Amlodipine Besylate:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 2,7 mg/l
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 3,2 mg/l
aquatic invertebrates Exposure time: 48 h

Toxicity to algae/aquatic : IC50 (Pseudokirchneriella subcapitata (green algae)): 5,6 mg/l
plants Exposure time: 72 h
Method: OECD Test Guideline 201

12.2 Persistence and degradability

Components:

Hydrochlorothiazide:

Stability in water : Hydrolysis: 46,2 %(96 h)

12.3 Bioaccumulative potential

Components:

Amlodipine Besylate:

Partition coefficient: n- : log Pow: 3
octanol/water

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Not relevant

12.6 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Dispose of in accordance with local regulations.
According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.
If not otherwise specified: Dispose of as unused product.

Olmesartan / Amlodipine Besylate / Hydrochlorothiazide Formulation

Version 1.0 Revision Date: 07.10.2019 SDS Number: 4944966-00001 Date of last issue: -
Date of first issue: 07.10.2019

SECTION 14: Transport information

14.1 UN number

Not regulated as a dangerous good

14.2 UN proper shipping name

Not regulated as a dangerous good

14.3 Transport hazard class(es)

Not regulated as a dangerous good

14.4 Packing group

Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Not applicable

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Remarks : Not applicable for product as supplied.

SECTION 15: Regulatory information

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

The components of this product are reported in the following inventories:

: not determined

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Other information : Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Full text of H-Statements

H302 : Harmful if swallowed.
H319 : Causes serious eye irritation.
H360D : May damage the unborn child.
H372 : Causes damage to organs through prolonged or repeated exposure.
H411 : Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox. : Acute toxicity
Aquatic Chronic : Long-term (chronic) aquatic hazard
Eye Irrit. : Eye irritation

Olmesartan / Amlodipine Besylate / Hydrochlorothiazide Formulation

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	07.10.2019	4944966-00001	Date of first issue: 07.10.2019

Repr.	:	Reproductive toxicity
STOT RE	:	Specific target organ toxicity - repeated exposure
ZA OEL	:	South Africa. Hazardous Chemical Substances Regulations, Occupational Exposure Limits
ZA OEL / TWA OEL-RL	:	Long term occupational exposure limits - recommended limit
ZA OEL / STEL OEL-RL	:	Short term occupational exposure limits - recommended limit

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further information

Sources of key data used to compile the Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

Classification of the mixture:

Eye Irrit. 2	H319
Repr. 1A	H360D
STOT RE 2	H373
Aquatic Chronic 3	H412

Classification procedure:

Calculation method
Calculation method
Calculation method
Calculation method

Olmesartan / Amlodipine Besylate / Hydrochlorothiazide Formulation

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	07.10.2019	4944966-00001	Date of first issue: 07.10.2019

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

ZA / EN