



Safety Data Sheet (SDS)

According to Regulation (EC) No 453/2010

SD BIOLIEN Dengue Duo

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Version : 0

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

1.1. Product identifier

Trade name/designation : SD BIOLIEN Dengue Duo, Assay diluent

Cat. No. : 11FK45, 11FK46

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

1.2.1. Relevant identified uses

- Not available

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : Standard Diagnostics, Inc.

Address : 65, Borahagal-ro, Giheung-gu, Yongin-si, Gyeonggi-do, Republic of Korea

Telephone : 82 (31) 899-2861

Email : yrhan@standardia.com

1.4. Emergency telephone number

Telephone number : 82 (31) 899-2882

SECTION 2: HAZARD IDENTIFICATION

2.1. Classification of the substance/mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]

- Not applicable

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]

* Hazard Pictogram(s)

- Not applicable

* Signal word : Not applicable

* Hazard statement(s)

- Not applicable

* Precautionary statement(s)

1) Prevention

- Not applicable

2) Response

- Not applicable

3) Storage

- Not applicable

4) Disposal

- Not applicable

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

- Not applicable

3.2. Mixtures

Name	CAS No.	REACH No.	% [weight]	Classification [1272/2008/EC]
Water	7732-18-5	-	more than 99	Not classified
Sodium azide	26628-22-8	-	0.01	The product does not contain reportable quantities of dangerous components.

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- About whether I should induce vomiting Take the advice of a doctor.
- Rinse your mouth with water immediately.

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

- Not available

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

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

- Dry chemical, carbon dioxide, regular foam extinguishing agent, spray

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Notify your local fire station and inform the location of the fire and characteristics hazard.
- Using an unattended and water devices in case of large fire and leave alone to burn if you do not imperative.
- Avoid inhalation of materials or combustion by-products.
- Do not access if the tank on fire.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Move container to safe area from the leak area.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise emergency services.

6.3. Methods and material for containment and cleaning up

6.3.1. For containment

- Don't use a brush or compressed air for cleaning surfaces or clothing.
- Clear spills immediately
- Clear area of personnel and move up wind.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

- Since emptied containers retain product residue(vapor, liquid, solid) follow all MSDS and label warnings even after container is emptied.
- Get the manual before use.
- Operators should wear antistatic footwear and clothing.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Check regularly for leaks.
- Do not use damaged containers.
- Do not apply direct heat.
- Do not apply any physical shock to container.
- Keep sealed when not in use.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limits

European Union (EU) Commission Directive 2006/15/EC (IOELVs)

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment

Hand protection

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s).
- Any air-purifying respirator with a full facepiece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.

Skin protection

- Wear appropriate clothing.

Others

- It is necessary to wear protective clothes and other protection equipment. Cover your face, head and neck.
- Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood.
- Emergency deluge showers and eyewash fountains, supplied with potable water, should be located near, within sight of, and on the same level with locations where direct exposure is likely.

Thermal hazards

- Not available

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance(State)	Liquid
Appearance(Color)	Colorless

Odor	Odorless
Odor threshold	Not available
pH	Not available
Melting point/Freezing point	Not available
Initial boiling point and boiling range	Not available
Flash point	Not available
Evaporation rate	Not available
Flammability(solid, gas)	Not available
Upper/Lower Flammability or explosive limits	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	Not available
Solubility	Not available
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Explosive properties	Not available
Oxidising properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

- Not available

10.2. Chemical Stability and Reactivity

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- May emit flammable vapour if involved in fire.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Acute toxicity

- Oral

- [Water] : LD₅₀ = 90000 mg/kg Rat
- [Sodium chloride] : LD₅₀ = 3000 mg/kg Rat
- [Disodium hydrogenorthophosphate] : LD₅₀ > 2000 mg/kg Rat
- [Potassium chloride] : LD₅₀ 2600 mg/kg Rat
- [Phosphoric acid monopotassium salt] : LD₅₀ 1700 mg/kg mouse (ca.)
- [Sodium azide] : LD₅₀ = 5 ~ 50 mg/L

- Dermal

- [Sodium chloride] : LD₅₀ > 10000 mg/kg Rabbit
- [Phosphoric acid monopotassium salt] : LD₅₀ > 4640 mg/kg Rabbit

- Inhalation

- [Sodium chloride] : dust LC₅₀ > 10.5 mg/ℓ 4 hr Rat

11.2. Skin corrosion/irritation

- Not available

11.3. Eye corrosion/irritation

- Not available

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Mutagenicity

- Not available

11.7. Carcinogenicity**- IARC**

- Not available

- OSHA

- Not available

- ACGIH

- [Sodium azide] : A4

- NTP

- Not available

- EU CLP

- Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- Not available

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [Sodium chloride] : LC₅₀ = 1294.6 mg/ℓ 96 hr *Lepomis macrochirus*

- [Disodium hydrogenorthophosphate] : LC₅₀ 2260000000 mg/ℓ 96 hr

- [Phosphoric acid monopotassium salt] : LC₅₀ 40400000 mg/ℓ 96 hr

- [Potassium chloride] : LC₅₀ 880 mg/ℓ 96 hr *Pimephales promelas*

- [Sodium azide] : LC₅₀(96hr) ≤ 1 (mg/L)

12.1.2. Invertebrate

- [Sodium chloride] : EC₅₀ = 402.6 mg/ℓ 48 hr *Daphnia magna*

- [Disodium hydrogenorthophosphate] : LC₅₀ 3580 mg/ℓ 48 hr *Daphnia magna*

- [Phosphoric acid monopotassium salt] : LC₅₀ 2.4 mg/ℓ 28 hr

- [Potassium chloride] : EC₅₀ 177 mg/ℓ 48 hr *Daphnia magna*

- [Sodium azide] : EC₅₀(48hr) ≤ 1 (mg/L)

12.1.3. Algae

- [Disodium hydrogenorthophosphate] : EC₅₀ 564000000 mg/l 96 hr
- [Phosphoric acid monopotassium salt] : EC₅₀ 12700000 mg/l 96 hr
- [Potassium chloride] : EC₅₀ 2500 mg/l 72 hr (IUCLID)
- [Sodium azide] : ErC₅₀(72 or 96hr) ≤ 1 (mg/L)

12.2. Persistence and degradability**12.2.1. Persistence**

- [Water] : log Kow = -1.38
- [Sodium chloride] : log Kow = -0.46
- [Disodium hydrogenorthophosphate] : log Kow -5.8 (Estimates)
- [Potassium chloride] : log Kow -0.46
- [Phosphoric acid monopotassium salt] : log Kow -3.96

12.2.2. Degradability

- Not available

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- [Sodium chloride] : BCF = 3.162
- [Disodium hydrogenorthophosphate] : BCF 3.162
- [Potassium chloride] : BCF 0.47

12.3.2. Biodegradability

- Not available

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designaed waste is mixed, it is difficult to treat sepatratly, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

- Not available

14.1.2. UN No. (IMDG)

- Not available

14.1.3. UN No. (ICAO)

- Not available

14.2. UN proper shipping name

- Not available

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not available

14.3.2. ADR/RID/ADN Class

- Not available

14.3.3. ADR Label No.

- Not available

14.3.4. IMDG Class

- Not available

14.3.5. ICAO Class/Division

- Not available

14.3.6. Transport Labels

- Not available

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not available

14.4.2. IMDG Packing group

- Not available

14.4.3. ICAO Packing group

- Not available

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : Not available
- EmS SPILLAGE SCHEDULE : Not available

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not available

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****REACH Restricted substance under REACH**

- Not applicable

REACH Substances subject to authorization under REACH

- Not applicable

REACH SVHC

- Not applicable

Europe PBT

- Not applicable

European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

Germ cell mutagenicity(Mutagen)

- Not applicable
- Reproductive toxicity(Reproductive)**
- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION

16.1. Indication of changes

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EU) No. 453/2010

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorisation of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Relevant H and P statements

- See Section 2.1 for information on Classification of the mixture.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.
- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.
- It should not therefore be construed as guaranteeing any specific property of the product.