LIONEX Diagnostics

MSDS (Material Safety Data Sheet / Sicherheitsdatenblatt)

DO 619

| DO 619 Revision /Fassung Nr.: 2.0 | Gültig ab: 03.07.2017 | QMH – Ábschnitt: 5.5 | Seiten: 1 von 10 |
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| Ausgefülltes Dokument: Revision /Fassung Nr.: 2.0 | Gültig ab: 07.09.2018 | Produktname: LIODetect®TB-ST Tuberculosis Rapid Test | Katolog –Nr.: 3010_EN / 3020_EN |

EG Material Safety Data Sheet according to

Safety Data Sheet according to Regulation (EG) 2015/830 Regulation, (EU) No. 1272/2008 (+ Subsequent ATPs) and

REACH Regulation 1907/2006 EC (+ Subsequent Regulations)

Date: 07.09.2018

Rev. 2.0

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

1.1. 1.1. Product identifier: LIODetect®TB-ST Tuberculosis Rapid Test (Art.-No. 3010 / 3020)

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

In-Vitro Diagnostics for the detection of antibodies to active Tuberculosis. For professional use. Not for personal use. Contains 2 components (test cassette and diluent buffer) as liquids or solid phase.

1.3. Details of the supplier of the safety data sheet

Lionex GmbH Salzdahlumer Str. 196, Geb. 1A D-38126 Braunschweig Tel. +49(0)531 / 2601266 Contact person: Prof. Dr. Singh:

<u>www.lionex.de</u> FAX +49(0)531 / 6180654 **Tel. +49(0)175 / 594 2291**

e-mail: info@lionex.de

1.4. Emergency telephone number

Germany:

Giftinformationszentrum-Nord der Länder Bremen, Hamburg, Niedersachsen und Schleswig-Holstein Robert-Koch-Straße 40 37075 Göttingen **Tel.: .+49**

Tel.: .+49(0)0551 / 19240

International:

| Belgien / Belgium: | +32(70) 245 245 | Polen / Poland: | +48 (42) 657 99 00 |
|------------------------|---------------------|---------------------------------|------------------------|
| Bulgarien / Bulgaria: | +359 (2) 515 32 34 | Portugal / Portogal: | +351 (1) 795 01 43 |
| Dänemark / Denmark: | +45 (35) 316 060 | Russische – Föderation / Russia | +7 (95) 928 16 47 |
| Finnland / Finland: | +358 (9) 471 977 | Schweden / Sweden: | +46 (8) 736 03 84 |
| Frankreich / France: | +33 (3) 883 737 37 | Schweiz / Switzerland: | +41 (1) 251 51 51 |
| Griechenland / Greece: | +30 (1) 799 37 77 | Slowakei / Slovakia: | +00421 (17) 547 741 66 |
| Großbritannien / GB: | +44 (171) 635 91 91 | Slowenien / Slovenia: | +386 (61) 302 457 |
| Holland / Dutch: | +31 (30) 274 88 88 | Spanien / Spain: | +34 (91) 562 84 69 |
| Israel / Israel: | +972 (4) 852 92 05 | Tschechien / Czech Republik: | +42 (02) 249 192 93 |
| Italien / Italia: | +39 (6) 490 663 | Türkei / Turkey: | +90 (312) 433 70 01 |
| Kroatien / Croatia: | +385 (1) 222 302 | Ungarn / Hungary: | +36 (1) 215 215 |
| Litauen / Lithuania: | +370 (2) 269 583 | Österreich / Austria: | +43 (1) 406 43 43 |
| Norwegen / Norway: | +47 (22) 591 300 | | |

SECTION 2. Hazards identification

2.1. Classification of the substance or mixture

Classification of components of the whole preparation according to Regulation (EG) No. 1272/2008: Not hazardous for human health or the environment in any way.

2.2. Label elements

Labelling and hazard notes according to Regulation (EG) No. 1272/2008: Not hazardous. Labelling not required.

Signal word: none

Precautionary statements: none

Additionally Statements: -



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2.3. Other hazards

Use the product by following the standard safety precautions in a lab.



Use appropriate protective clothing (gloves, lab coat, work shoes, safety goggles). Behavior in the lab: DO NOT SMOKE! DO NOT DRINK! DO NOT EAT!

PBT: not applicable. / vPvB: not applicable.

SECTION 3. Composition/information on ingredients

3.1. Substances

Not applicable. Mixtures from substances listed below contain non hazardous components like water or proteins. / Gemische welche die unten aufgeführten Substanzen enthalten ungefährliche Beimengungen wie Wasser oder Proteine.

3.2. Mixtures

Composition of the substances in the mixtures:

| Kit Component | Substance | CAS No. | EC No. | Concentration in the mixture | H rules | P rules |
|----------------|--|------------|-----------|------------------------------|----------------------|---------|
| Test cassette | 5-Bromo-5-Nitro-1,3-Dioxane $C_4H_6BrNO_4$ | 30007-47-7 | 250-001-7 | ≤ 0,01 % | H302 H315 | P280 |
| | Nitrocellulose | 9004-70-0 | - | ≤ 0,1 % | - | - |
| | Sodium hydrogenphosphate Dihydrate | 13472-35-0 | 231-449-2 | ≤ 0,01 % | H319 H335 H315 | P280 |
| Diluent Buffer | 5-Bromo-5-Nitro-1,3-Dioxane $C_4H_6BrNO_4$ | 30007-47-7 | 250-001-7 | 0,05 % | H302 H315 | P280 |

Full description of H- and P-rules: refer to section 16.

Substances, which are listed in the "Candidate List of Substances of Very High Concern (SVHC) for authorisation" of European Chemicals Agency (ECHA) are not intended to be part of this product. Therefore it is not expected that the concentration of such substances is > 0.1 % in the product.

SECTION 4. First-aid measures



4.1. Description of first-aid measures

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out the dangerous area. Hand out the medical doctor this MSDS.

Skin contact (and hair): Take off immediately all contaminated clothing. Instantly wash with water and rinse thoroughly. Remove any clothing contaminated by the product. Seek medical advice, if irritations arise. Wash contaminated clothes before reuse. Call the doctor.

Eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical advice.

If swallowed: If swallowed rinse mouth for several minutes under running water. Do not swallow! If swallowed the Stop solution rinse mouthe by water. Do not induce vomitting. Seek medical or contact emergency call.

If inhaled: Inhaling is not possible. If there should occur any troubles (e.g. shortness of breath): land the person on fresh air. In case of breathing difficulties transmit oxygen. Consult a doctor. Remove person to fresh air and keep comfortable for breathing.

Increased troubles because of excessive reaction: During recurring or continual reaction there is no expected aggravation of state of health.



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

Skin contact: no symptoms expected.

Eye contact: no symptoms expected.

If swallowed: no symptoms expected.

If inhaled: it is not possible to inhale the test components under normal conditions of use. No symptoms expected.

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

Not available.

SECTION 5. Fire fighting measures

5.1. Extinguishing media

Every extinguishing agent, which is suitable for the controlling fire. Gear extinguishing agent to the surrounding.

5.2. Special hazards arising from the substance or mixture

There are not known special risks, which can caused by the substance or the mixture. Generally: toxic vapours can be released in case of fire (see 10.1)

5.3. Advice for firefighters

Wear self-contained breathing apparatus and suitable protective clothing for fighting against a fire, whereby chemicals are involved.

Move container from fire area if it can be done without risk. Use water spray to keep fire exposed containers cool.

Evacuate area. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire.

Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

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

SECTION 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use suitable personal protective equipment (safty glasses, white coat, gloves). Avoid breathing dust or aerosols. Ensure adequate ventilation and clean well the affected area after complete elimination of the material.

6.2. Environmental precautions

Avoid entering major volumes of buffer solution in sewerage. Wipe up the liquid with an absorbent material (paper).

6.3. Methods and material for containment and cleaning up

Dam liquid and absorb with suitable material (paper) and dispose it carefully in closed containers. Rinse with high volumes of water.

6.4. Reference to other sections

Applicable limits for occupational exposition are listed in section 8. For disposal refer to section 13.

SECTION 7. Handling and storage

7.1. Precautions for safe handling

Advice for safe handling: Store buffer solution locked.

Close containers immediately after use to avoid spillage. Wear protective clothing (gloves / safety clothes / goggles). Hygiene measures: Do not smoke, drink or eat in the laboratory. Wash hands after use, put off contaminated clothes and protective equipment before entering a break room.

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7.2. Conditions for safe storage, including any incompatibilities

No specific measures for prevention of explosive atmospheres necessary.

No risk of corrosion known

The solutions are not flammable.

Interactions of the ingredients with incompatible substances: store separate from explosive substances (hazard class 1, hazard class 4.1A), store separate from substances which develop flammable gases in contact with water (hazard class 4.3), store separate from infectious substances (hazard class 6.2) and radioactive substances (hazard class 7). **Conditions for evaporation:** no dangerous effects known

Potential sources of ignition: not present in the product

Effects of weather conditions: none known

Effects of ambient conditions: none known

Effects of the temperature: store at 2-25 °C, can be stored up to the expiration date

Effects of sunlight: non known

Effects of moisture: protect the enclosed test cassette from moisture

Effects of vibrations: non known

7.3. Specific end use(s)

none

SECTION 8. Limitation and monitoring of the exposition/ personal protective equipments

8.1. Control parameters according to German TRGS 903: none.

| Substance | CAS-No. | EC-No. | MAK (by TRGS 900) | content (%) |
|----------------------------|------------|-----------|-------------------|-------------|
| 5-Bromo-5-Nitro-1,3-Dioxan | 30007-47-7 | 250-001-7 | not listed | ≤ 0,05% |

For National exposition limits in other Countries than Germany refere to the corresponding rules!

Current recommended monitoring procedures:

In case of proper use of the product no air pollution load will be expected. Therefore no current monitoring procedures are necessary.

8.2. Exposure controls



Personal protective equipment: select personal protective equipment according to the concentration of hazardous substances on the specific work station.

Eye and face protection: wear safety goggles according to EN 166 (EU), NIOSH (US)



Skin protection: protective gloves according to EN 374 (nitrile rubber > 0,28 mm or natural latex \ge 0,22 mm and AQL 1,5). Respect allergies!



Further protective measures: wear a lab coat, closed footwear, follow the hygiene instructions in the laboratory.

Breathing protection: respirator mask is not necessary.

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SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Test cassette

| Appearance: | solid phase, test cassette (PE), contains one test strip, sealed in aluminum foil in combination with |
|---|---|
| | desiccant bag. |
| Odor: | no typical odor |
| pH-value: | not specified, solid |
| melting point/freezing point: | not specified, unknown |
| boiling point and boiling range: | not specified, solid |
| flashpoint: | not specified, solid |
| rate of vaporization: | not specified, solid |
| inflammability (solid, gaseous): | flammable in open fire |
| upper/ lower inflammability or explored | sion limit: not specified |
| Vapor pressure: | not specified, solid |
| Vapor density: | not specified, solid |
| specific gravity: | not specified, solid |
| solubility: | not specified, solid |
| distribution coefficient: | not specified, solid |
| self-ignition point: | no self-ignition possible |
| decomposition temperature: | not specified, solid |
| viscosity: | not specified, solid |
| explosive properties: | none, no explosive substances are used for production. |
| oxidizing properties: | none, no oxidizing substances are used for production. |
| | |

Sample diluent, aqueous solution

| Appearance: | liquid, 4 mL in a PE-dropper vial, transparent white |
|---|---|
| Odor: | no typical odor |
| Odor threshold: | not specified |
| pH-value: | 5.7 – 5.9 |
| melting point/freezing point: | 0°C |
| boiling point and boiling range: | 100°C |
| flashpoint: | not specified, aqueous solution without flammable ingredients |
| rate of vaporization: | not specified, like water |
| inflammability (solid, gaseous): | not flammable |
| upper/ lower inflammability or explosion li | mit: not explosive |
| vapor pressure: | not specified, aqueous solution |
| vapor density: | not specified, aqueous solution |
| specific gravity: | not specified, like water |
| solubility: | not specified, aqueous solution |
| distribution coefficient: | not specified |
| self-ignition point: | no self-ignition possible |
| decomposition temperature: | not specified |
| viscosity: | not specified, aqueous solution |
| explosive properties: | none, contains no explosive substances |
| oxidizing properties: | none, contains no oxidizing substances |

9.2. Further information

All liquid components of the preparation are infinite water-soluble. No potential for the formation of radicals. No photocatalytic properties.

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SECTION 10. Stability and reactivity

10.1. Reactivity

The application of all these components during preparation is not attendant on especial hazards. The mixture is stable under current lab conditions. Down below data of the mixture are denoted.

| Ingredients | Incompatible material | Hazardous decomposition product |
|-----------------------------|-------------------------------|------------------------------------|
| Nitrocellulose | strong oxidants, strong acids | in case of thermic decomposition: |
| | and bases | nitroses gas, carbon oxides |
| 5-Bromo-5-Nitro-1,3-Dioxane | strong oxidant | In case of thermic decomposition |
| | | carbon oxides, nitrogen oxides and |
| | | bromide can occur. |

10.2. Chemical stability

Under normal conditions of the environment, temperature and pressure all products are stable while they are stored or in use. The storage conditions of the whole preparation are remarked on the label. The preparation is stable within the expiration date which is denoted at the label.

10.3. Potential hazardous reactions

All the components of the preparation do not cause hazardous reactions at all, such as polymerisation.

10.4. Conditions to avoid

Avoid heating over a temperature of 30 °C.

Accordingly it does not provoke a hazardous reaction, however the product becoms defective.

Under normal conditions of the environment, temperature and pressure all components are stable till the expiration date has passed.

10.5. Incompatible materials

None of the components of the preparation reacts with other materials in that way, that a hazardous situation could arise.

10.6. Hazardous decomposition products

Under normal temperature and storage conditions the components of preparation do not form hazardous decompositon products.

SECTION 11. Toxicologic information

11.1. Information about toxicologic effects

The information about the toxicological effects applies to the ingredients of the preparation. The components of the preparation as a whole is categorised as non-hazardous, because the concentration of the ingredients are very low. The whole preparation, unless otherwise specified, is classified as non-toxic, non-corrosive, non-irritant, non-sensitizing, not carcinogen and not mutagenic.

Acute toxicity

| Substance | Acute toxicity / species | concentration | |
|------------------------------------|--------------------------------|---------------|--|
| 5-Bromo-5-Nitro-1,3-Dioxane | LD ₅₀ oral (rat): | 455 mg/kg | |
| | LD ₅₀ oral (mouse): | 590 mg/mg | |
| Skin corrosion/irritation: | not expected. | | |
| Eye irritation: | not expected. | | |
| Respiratory or skin sensitization: | not expected. | | |
| Toxicity at repeated exposition: | not expected. | | |
| Genetic toxicity: | not expected. | | |
| Toxicity to reproduction: | not expected. | | |
| Teratogenicity: | not expected. | | |

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Carcinogenicity (relevant component: 5-Bromo-5-Nitro-1,3-Dioxane):

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.2

Danger of aspiration: No information available.

If swallowed, contact to skin or eye: No information available.

SECTION 12. Ecological information

12.1. Toxicity

Because of the low concentration an **aquatic toxicity is not to be expected**. Hazardous effects for long term are not to be expected.

Acute toxicity of the row substances to aquatic organisms: no data available Chronic toxicity of the row substances to aquatic organisms: no data available

Terrestrial environment: date not available.

12.2. Persistence and degradability

Available information about persistence and degradability of the mixture.

| Substance | Ecological details: |
|----------------------------|---|
| 5-Bromo-5-Nitro-1,3-Dioxan | Not available. Concentration very low (≤ 0,05 %). |
| Sodium Chloride | Biologic degradable. |

12.3. Potential of bioaccumulation

Agents that are hazardous to the environment occur just in a small concentration over the entire preparation. In case of a correct application and disposal there is no reason for potential bioaccumulation. For disposal remarks refer to section 13.

12.4. Mobility in the ground

There are no data available about the mobility in the ground.

12.5. Result of PBT- and vPvB-assessment

All substances used during the preparation are not listed in the PBT- data base. No data are available concerning the mobility in the ground.

12.6. Other adverse effects

Unknown.

SECTION 13. Disposal considerations

13.1. Waste treatment methods

The disposal has to be done according to current regional, national and local laws and standards. Relevant legal basic principles for disposal: see 16.2!

Waste production should be avoided or minimised as far as possible.

Excessive and not recyclable products are not allowed to be disposed by an accepted waste disposal company. The disposal of these products as well as solutions and coproducts has to be done at any time according to the environmental requirements, disposal laws and demand of the local administration. The disposal must not take place in wastewater.

Especial measures of precaution related to the recommended solutions of waste management:

The disposal has to be done according to current regional, national and local laws and standards.

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Disposal of the outer packaging: dispose according to current regional, national and local laws and standards.

SECTION 14. Transport remarks

| 14.1. UN-Number | | | |
|------------------------------------|---------------------------|--------------------------|--|
| ADR/RIS: - | IMGD: - | IATA: - | |
| 14.2. UN proper shipping | g name | | |
| ADR/RIS: kein Gefahrgut | IMGD: no dangerous goods | IATA: no dangerous goods | |
| 14.3. Transport hazard c | lass | | |
| ADR/RIS: - | IMGD: - | IATA: - | |
| 14.4. Packing group | | | |
| ADR/RIS: - | IMGD: - | IATA: - | |
| 14.5. Environmental hazards | | | |
| ADR/RIS: nein | IMGD: Marine pollutant no | IATA: no | |
| 14.6. Special precautions for user | | | |
| None. | | | |

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

Not relevant.

SECTION 15. Regulatory information

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

Safety, health and environmental regulations/legislation refer to national rules.

This material data sheet is prepared according to Regulation (EG) 2015/830, Regulation (EU) No. 1272/2008 (+ Subsequent ATPs) and REACH Regulation 1907/2006 EC (+ Subsequent Regulations). Acute toxicity (ATE) of the mixtures are calculated according to Regulation (EG) 1272/2008, Annex I. According to EG 1272/2008, Annex I the mixtures are not classified as water polluting substances.

15.2. Chemical safety assessment

For the product which was mentioned in chaper 1 no safty estimation was prepared.

SECTION 16. Other information

16.1 History of modifications

Volume 2: catalogue number completed; abbreviation of Country added.

16.2 References and data source:

REACH-Regulation (EG) Nr. 1907/2006 CLP-Regulation (EG) Nr. 1272/2008 Internet: http://www.baua.de http://publikationen.dguv.de http://gestis.itrust.de http://logkow.cisti.nrc.ca http://www.gischem.de http://echa.europa.eu/en/candidate-list-table http://echa.europa.eu/de/information-on-chemicals/registered-substances

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http://www.chemicalbook.com/

http://www.reach-clp-biozid-helpdesk.de/de/REACH/Zulassung-Beschraenkung/Beschraenkung/Anhang-XVII/Anhang17.html

PBT-Datenbank: http://ecb.jrc.ec.europa.eu/esis/index.php?PGM=pbt

Arbeitsmaterialien zur ökologischen Entsorgung für Arztpraxen und Weg zur richtigen Entsorgung. Editor: Ärztekammer Niedersachsen, authors: Dr. H.-Bernhard Behrends, H. Cremer, Dr. Claus Rink. Web page: <u>http://www.aekn.de/web_aekn/home.nsf/ContentView/1E8914148D4E37BFC1256FB70036DAF7/\$File/arbeitsmateria</u> <u>lien.pdf</u>

16.3 Hazard- and Precautionary rules

The list explains the meaning of the H rules that are given in chapter 3.1. The H rules are valid for the ingredients as a pure substance not for the preparation.

| List H rules | Meaning |
|--------------|---------------------------------------|
| H302 | Harmful if swallowed. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H335 | Can be irritant to respiratory tract. |

The list explains the meaning of the P rules that are given in chapter 3.1. The P rules are valid for the ingredients as a pure substance not for the preparation.

| List P rules | Meaning | |
|--------------|---|---------------|
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. P302 | IF ON SKIN: / |

16.4 Abbrevations

| Abbreviations | Meaning |
|-------------------------------------|--|
| IARC | International Agency for Research on Cancer |
| ACGIH | American Conference of Governmental Industrial Hygienists |
| OSHA | Occupational Safety & Health Administration |
| PBT | persistent, bio accumulative and toxic substances |
| vPvB | very persistent and very bio accumulative substances |
| CAS | Chemical Abstracts Service registration number |
| EC/EG/EWG | Europäische Gemeinschaft |
| g | Gramm |
| h | Hour |
| kg | Kilogramm |
| LD ₅₀ , LC ₅₀ | middl letale dosis of the agent for 50 % of the observed population |
| EC ₅₀ | half maximal effective concentration (dosis/concentration which induces a response halfway between |
| | the baseline and maximum after a specified exposure time) |
| IC ₅₀ | half maximal inhibitory concentration |
| NOEC | no observed effect level |
| m ³ | Kubikmeter |
| MAK | Maximale Arbeitsplatzkonzentration |
| mg | Milligramm |
| mL | Milliliter |
| % | Percent (part of 100) |

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16.5 Method which was used to evaluate hazard information for the mixtures

Hazard information's are evaluated according to Regulation (EG) 2015/830 Regulation (EU) No. 1272/2008 (+ Subsequent ATPs) and REACH Regulation 1907/2006 EC (+ Subsequent Regulations).

Method used according to Article 9 of Regulation (EG) No. 1272/2008 for Assessment of Information for Classification of the mixtures: Calculation methods

16.6 Further information's

The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. The information does not represent any guarantee of the properties of the product.