



PROTEINS FOR SUSTAINABILITY

# 10X Buffer T4 DNA Ligase

## Safety Data Sheet

According to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)  
Issue date: 23/09/2025 Version: 01

### SECTION 1 Identification

#### 1.1. Product identifier

Product form : Mixture  
Trade name : 10X Buffer T4 DNA Ligase

#### 1.2. Other means of identification

No additional information available

#### 1.3. Recommended use of the chemical and restrictions on use

Use of the substance/mixture : Use as buffer for T4 DNA Ligase for molecular biology applications such as in vitro transcription for mRNA expression or DNA analysis in gene sequencing  
Restrictions on use : For research purpose only, not for use in diagnostic or therapeutic procedures.

#### 1.4. Supplier's details

##### Supplier

Cocoon Bioscience S.L.  
Parque Científico y Tecnológico de Bizkaia, 802.  
Derio, Bizkaia 48160  
Spain  
T 0034 608 454 632  
[support@cocoonbio.com](mailto:support@cocoonbio.com)

##### Distributor

Cocoon Bio  
987 Old Eagle School Rd Ste 709  
Wayne, PA 19087  
T (484) 368-3558

#### 1.5. Emergency phone number

Emergency number : (484) 368-3558 (Business hours: 9 AM – 5 PM)

### SECTION 2 Hazard Identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

Not classified

#### 2.2. Label elements

##### GHS US labeling

No labeling applicable

#### 2.3. Hazards associated with known or reasonably anticipated uses

No additional information available

#### 2.4. Hazards not otherwise classified

No additional information available

#### 2.5. Unknown acute toxicity

No additional information available

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### SECTION 3 Composition/information on ingredients

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

| Name                 | Product identifier | %    | GHS US classification                                                                                                       |
|----------------------|--------------------|------|-----------------------------------------------------------------------------------------------------------------------------|
| Dithiothreitol (DTT) | CAS-No.: 3483-12-3 | <1.5 | Acute Tox. 4 (Oral), H302<br>Skin Irrit. 2, H315<br>Eye Irrit. 2A, H319<br>Aquatic Acute 2, H401<br>Aquatic Chronic 2, H411 |

\*Chemical name, CAS number and/or exact concentration have been withheld as a trade secret

Full text of hazard classes and H-statements : see section 16

### SECTION 4 First aid measures

#### 4.1. Description of necessary first-aid measures

|                                       |                                                                                                                                                                                                                                                                                                                |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| First-aid measures general            | : First aider: Pay attention to self-protection. Never give anything by mouth to an unconscious person. Give artificial respiration if necessary. Induce artificial respiration with mask fitted with one-way valve or other suitable device but, not mouth-to-mouth. If you feel unwell, seek medical advice. |
| First-aid measures after inhalation   | : Remove person to fresh air and keep comfortable for breathing. Get medical advice/attention if you feel unwell.                                                                                                                                                                                              |
| First-aid measures after skin contact | : Remove affected clothing and wash all exposed skin areas with mild soap and water, followed by warm water rinse. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.                                                                                           |
| First-aid measures after eye contact  | : Rinse eyes with water as a precaution. If eye irritation persists: Get medical advice/attention.                                                                                                                                                                                                             |
| First-aid measures after ingestion    | : Rinse mouth out with water. Do NOT induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Call a poison center/doctor/physician if you feel unwell.                                                                                                        |

#### 4.2. Most important symptoms/effects, acute and delayed

|                                     |                                                                                                        |
|-------------------------------------|--------------------------------------------------------------------------------------------------------|
| Symptoms/effects after inhalation   | : Not expected to present a significant hazard under anticipated conditions of normal use.             |
| Symptoms/effects after skin contact | : Not expected to present a significant skin hazard under anticipated conditions of normal use.        |
| Symptoms/effects after eye contact  | : Not expected to present a significant eye contact hazard under anticipated conditions of normal use. |
| Symptoms/effects after ingestion    | : Not expected to present a significant ingestion hazard under anticipated conditions of normal use.   |

#### 4.3. Indication of immediate medical attention and special treatment needed, if necessary

|                                   |                          |
|-----------------------------------|--------------------------|
| Other medical advice or treatment | : Treat symptomatically. |
|-----------------------------------|--------------------------|

### SECTION 5: Fire-fighting measures

#### 5.1. Suitable (and unsuitable) extinguishing media

|                                |                                                            |
|--------------------------------|------------------------------------------------------------|
| Suitable extinguishing media   | : Dry chemical, CO2, alcohol-resistant foam or waterspray. |
| Unsuitable extinguishing media | : Do not use a heavy water stream.                         |

#### 5.2. Specific hazards arising from the chemical

|             |                   |
|-------------|-------------------|
| Fire hazard | : No fire hazard. |
|-------------|-------------------|

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Hazardous decomposition products in case of fire : Toxic fumes may be released. Carbon monoxide. Carbon dioxide.

### 5.3. Special protective equipment and precautions for fire-fighters

- Firefighting instructions : Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection. Move containers from fire area if it can be done without personal risk. Use extinguishing media appropriate for surrounding fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

## SECTION 6 Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Avoid all personal contact including breathing in the mist, spray, vapors. Do not take actions involving personal risks. Absorb spillage to prevent material-damage. Stop leak if safe to do so. Notify authorities if product enters sewers or public waters.
- For non-emergency personnel**
- Protective equipment : Wear recommended personal protective equipment.
- Emergency procedures : Evacuate the danger area. If outdoors, move to an area upwind of the danger area. If possible without taking personal risks, Remove ignition sources, ventilate area. Prevent other non-emergency personnel from entering the danger area.
- For emergency responders**
- Protective equipment : Wear the recommended personal protective equipment.
- Emergency procedures : Evacuate unnecessary personnel. Ventilate spillage area. Stop leak if safe to do so. Remove all sources of ignition.
- Environmental precautions : Avoid release to the environment.

### 6.2. Methods and materials for containment and cleaning up

- For containment : Stop leak, if possible without risk. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Absorb spilled material with sand or earth.
- Methods for cleaning up : Take up in non-combustible inert absorbent and place into container for disposal. Decontaminate surfaces and equipment with water and detergent. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

For further information refer to section 8: "Exposure controls/personal protection",For further information refer to section 13

## SECTION 7 Handling and storage

### 7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing mist, spray, vapors. Take precautionary measures against static discharge.
- Hygiene measures : Always wash hands after handling the product. Wash contaminated clothing before reuse.
- Additional hazards when processed : Not expected to present a significant hazard under anticipated conditions of normal use.

### 7.2. Conditions for safe storage, including incompatibilities

- Technical measures : Comply with applicable regulations.
- Storage conditions : Store in a cool, dry and well-ventilated area away from incompatible substances. Store carefully closed containers upright to prevent any leaks. Keep container closed when not in use.
- Incompatible products : Strong acids. Strong bases. Strong oxidizers.

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|                     |                                                                             |
|---------------------|-----------------------------------------------------------------------------|
| Storage temperature | : -20 °C                                                                    |
| Specific end uses   | : Laboratory chemicals.                                                     |
| Packaging materials | : Store always product in container of same material as original container. |

### SECTION 8 Exposure controls/personal protection

#### 8.1. Control parameters

No additional information available

#### 8.2. Appropriate engineering controls

|                                  |                                                                                                                                                                                                                                                  |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Appropriate engineering controls | : Ensure good ventilation of the work station. Handle in accordance with good industrial hygiene and safety procedures. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. |
| Environmental exposure controls  | : Avoid release to the environment. Take measures to reduce or limit air emissions and releases to soil and the aquatic environment.                                                                                                             |

#### 8.3. Individual protection measures, such as personal protective equipment

##### Personal protective equipment:

Personal protective equipment should be chosen according to national standards and in discussion with the supplier of the protective equipment. Wear recommended personal protective equipment.

|                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Hand protection:</b>                                                                                                                                                                                                        |
| Chemically impervious gloves as described by OSHA's hand protection regulations in 29 CFR 1910.138. The following materials are suitable for protective gloves: Neoprene/natural rubber, Butyl rubber, Polyvinylchloride (PVC) |
| <b>Eye protection:</b>                                                                                                                                                                                                         |
| Safety glasses with side shields                                                                                                                                                                                               |
| <b>Skin and body protection:</b>                                                                                                                                                                                               |
| Body protection should be chosen depending on activity and possible exposure. Body protection may include: Lab coat, Chemical-resistant apron                                                                                  |
| <b>Respiratory protection:</b>                                                                                                                                                                                                 |
| No respiratory protection needed under normal use conditions. In case of insufficient ventilation, wear suitable respiratory equipment                                                                                         |

### SECTION 9 Physical and chemical properties

#### 9.1. Basic physical and chemical properties

|                                |                     |
|--------------------------------|---------------------|
| Physical state                 | : Liquid            |
| Appearance                     | : Solution in vial. |
| Color                          | : Transparent       |
| Odor                           | : No data available |
| Odor threshold                 | : No data available |
| pH                             | : No data available |
| Melting point                  | : No data available |
| Freezing point                 | : No data available |
| Boiling point                  | : No data available |
| Flash point                    | : No data available |
| Flammability (solid, gas)      | : Not applicable.   |
| Vapor pressure                 | : No data available |
| Relative vapor density at 20°C | : No data available |
| Relative density               | : No data available |
| Solubility                     | : No data available |

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|                                                 |                     |
|-------------------------------------------------|---------------------|
| Partition coefficient n-octanol/water (Log Pow) | : No data available |
| Auto-ignition temperature                       | : No data available |
| Decomposition temperature                       | : No data available |
| Viscosity, kinematic                            | : No data available |
| Explosion limits                                | : No data available |
| Particle characteristics                        | : No data available |

### 9.2. Data relevant with regard to physical hazard classes (supplemental)

No additional information available

## SECTION 10 Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions of use.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

Incompatible materials.

### 10.5. Incompatible materials

Strong acids, strong bases and strong oxidants.

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Thermal decomposition generates: Carbon monoxide. Carbon dioxide.

## SECTION 11 Toxicological information

### 11.1. Information on toxicological effects

|                             |                  |
|-----------------------------|------------------|
| Acute toxicity (oral)       | : Not classified |
| Acute toxicity (dermal)     | : Not classified |
| Acute toxicity (inhalation) | : Not classified |

| Dithiothreitol (DTT) |                       |
|----------------------|-----------------------|
| LD50 oral rat        | 400 mg/kg body weight |

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitization : Not classified

| Dithiothreitol (DTT)                            |          |
|-------------------------------------------------|----------|
| Skin sensitizationLocal Lymph Node Assay, mouse | Negative |

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

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|                                     |                                                                                                        |
|-------------------------------------|--------------------------------------------------------------------------------------------------------|
| Reproductive toxicity               | : Not classified                                                                                       |
| STOT-single exposure                | : Not classified                                                                                       |
| STOT-repeated exposure              | : Not classified                                                                                       |
| Aspiration hazard                   | : Not classified                                                                                       |
| Symptoms/effects after inhalation   | : Not expected to present a significant hazard under anticipated conditions of normal use.             |
| Symptoms/effects after skin contact | : Not expected to present a significant skin hazard under anticipated conditions of normal use.        |
| Symptoms/effects after eye contact  | : Not expected to present a significant eye contact hazard under anticipated conditions of normal use. |
| Symptoms/effects after ingestion    | : Not expected to present a significant ingestion hazard under anticipated conditions of normal use.   |

### SECTION 12 Ecological information

#### 12.1. Ecotoxicity

|                                                           |                                                                                                                        |
|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Ecology - general                                         | : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment. |
| Hazardous to the aquatic environment, short-term (acute)  | : Not classified                                                                                                       |
| Hazardous to the aquatic environment, long-term (chronic) | : Not classified                                                                                                       |

| Dithiothreitol (DTT) |           |
|----------------------|-----------|
| EC50 - Crustacea [1] | 34.8 mg/l |
| EC50 72h - Algae [1] | 24.3 mg/l |
| EC50 72h - Algae [2] | 8.66 mg/l |

#### 12.2. Persistence and degradability

| 10X Buffer T4 DNA Ligase      |                  |
|-------------------------------|------------------|
| Persistence and degradability | Not established. |
| Dithiothreitol (DTT)          |                  |
| Persistence and degradability | Not established. |

#### 12.3. Bioaccumulative potential

| 10X Buffer T4 DNA Ligase  |                  |
|---------------------------|------------------|
| Bioaccumulative potential | Not established. |

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

|                              |                  |
|------------------------------|------------------|
| Ozone                        | : Not classified |
| Fluorinated greenhouse gases | : No             |

### SECTION 13 Disposal considerations

|                           |                                                                                               |
|---------------------------|-----------------------------------------------------------------------------------------------|
| Regional waste regulation | : Disposal must be done according to official regulations.                                    |
| Waste treatment methods   | : Dispose of contents/container in accordance with licensed collector's sorting instructions. |

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|                                            |                                                                                                                                                 |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Sewage disposal recommendations            | : Disposal must be done according to official regulations.                                                                                      |
| Product/Packaging disposal recommendations | : Disposal must be done according to official regulations. Refer to all applicable national, international and local regulations or provisions. |
| Additional information                     | : Do not re-use empty containers.                                                                                                               |
| Ecological waste information               | : Avoid release to the environment.                                                                                                             |

### SECTION 14 Transport information

In accordance with DOT / IMDG / IATA

| DOT                                     | IMDG          | IATA          |
|-----------------------------------------|---------------|---------------|
| <b>14.1. UN number</b>                  |               |               |
| Not regulated for transport             |               |               |
| <b>14.2. Proper Shipping Name</b>       |               |               |
| Not regulated                           | Not regulated | Not regulated |
| <b>14.3. Transport hazard class(es)</b> |               |               |
| Not regulated                           | Not regulated | Not regulated |
| <b>14.4. Packing group</b>              |               |               |
| Not regulated                           | Not regulated | Not regulated |
| <b>14.5. Environmental hazards</b>      |               |               |
|                                         | Not regulated |               |
| No supplementary information available  |               |               |

#### 14.6. Transport in bulk

Not applicable

#### 14.7. Special precautions for user

**DOT**  
Not regulated

**IMDG**  
Not regulated

**IATA**  
Not regulated

### SECTION 15 Regulatory information

#### 15.1. Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

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### 15.2. International regulations

#### CANADA

##### Dithiothreitol (DTT) (3483-12-3)

Listed on the Canadian DSL (Domestic Substances List)

#### EU-Regulations

No additional information available

#### National regulations

No additional information available

### 15.3. State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

## SECTION 16 Other information

According to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)

Issue date : 9/23/2025

| Full text of hazard classes and H-statements |                                                 |
|----------------------------------------------|-------------------------------------------------|
| H302                                         | Harmful if swallowed                            |
| H315                                         | Causes skin irritation                          |
| H319                                         | Causes serious eye irritation                   |
| H401                                         | Toxic to aquatic life                           |
| H411                                         | Toxic to aquatic life with long lasting effects |

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.