IMMAGINA BIOTECHNOLOGY srl
Via Sommarive 18, 38123 Trento, Italy
Tel: +39 04611787270, info@immaginabiotech.com

LACEseq kit (#LS001-12) consist of tubes containing aqueous solutions, salts enzymes, and oligos.
Components list:

- Buffer BL1 (BL1)
- L1 enzyme (L1)
- ATP (10 mM)
- Buffer L2 (BL2)
- L2 enzyme (L2)
- MnCl2
- GTP
- Linker MC
- Buffer L3 (BL3)
- Enzyme L3 (L3)
- PEG 8000 (PEG)
- Primer RT_T (RT_T)
- Buffer L4 (BL4)
- L4 Enzyme (L4)
- dNTPs
- DTT
- L5 enzyme (L5)
- Fw PCR1 (F1)
- Rev PCR1 (R1)
- TR buffer (TR)
- 3P-RNA 1 µM (RNA)

A Safety Data Sheet is provided for Peg8000 and DTT.
L1 enzyme (L1), L2 enzyme (L2), enzyme L3 (L3), L4 Enzyme (L4), L5 enzyme (L5), GTP, dNTPs, ATP (10 mM), Buffer BL1 (BL1), Buffer BL2 (BL2), Buffer BL3 (BL3), Buffer BL4 (BL4), TR buffer (TR) are classified as not hazardous according to regulation (EC) 1272/2008 [GHS]. Linker MC, Primer RT_T (RT_T), Fw PCR1 (F1), Rev PCR1 (R1) and 3P-RNA 1 µM (RNA) are oligos and are classified as not hazardous according to regulation (EC) 1272/2008 [GHS].
LACEseq kit (#LS001-12) doesn't contain any animal or biological material.

IMMAGINA BIOTECHNOLOGY srl recommends all normal precautions. We recommend always wearing gloves and avoiding direct contact with skin and eyes when handling biochemical and chemical reagents and solutions. Information in this MSDS is from available published sources and is believed to be accurate. No warranty, express or implied, is made and IMMAGINA BOTECHNOLOGY srl assumes no liability resulting from the use of this MSDS. The user must determine suitability of this information for his application.

Section 1: Company and Chemical Identification

IMMAGINA BIOTECHNOLOGY srl, Via Sommative 18, 38123 Trento, Italy, Tel: +390461312018, info@immaginabiotech.com

Chemical Name: Peg8000 (#IBT0251)

Section 2: Composition and Information on Hazardous Ingredients

Component	CAS No	Weight %
Peg8000	25322-68-3	30 - 60

Section 3: Hazards Identification

Classification

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)
This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard

Label Elements

None required

Hazards not otherwise classified (HNOC)

None identified

Section 4: First Aid Measures

4.1. Description of first aid measures

General advice

Immediate medical attention is required. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Remove from exposure, lie down. Do not breathe dust/fume/gas/mist/vapors/spray.

Eye contact

Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact

Wash skin with soap and water.

Inhalation

Remove to fresh air.

Ingestion

Clean mouth with water and drink afterwards plenty of water.

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

No information available

Section 5: Fire Fighting Measures

5.1. Extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media CAUTION: Use of water spray when fighting fire may be inefficient.

5.2. Special hazards arising from the substance or mixture
No information available
5.3. Advice for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Section 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures
Personal precautions
Ensure adequate ventilation, especially in confined areas. For emergency responders Use personal protection recommended in Section 8.
6.2. Environmental precautions
See Section 12 for additional Ecological Information.
6.3. Methods and material for containment and cleaning up
Methods for containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. This material and its container must be disposed of as hazardous waste.

Section 7: Handling and Storage

7.1. Precautions for safe handling
Handle in accordance with good industrial hygiene and safety practice.
7.2. Conditions for safe storage, including any incompatibilities
Storage temperature
Refer to protocol.

Storage Conditions
Keep/store only in original container.

Incompatible materials
None known based on information supplied.

-

Section 8: Exposure Controls/Personal Protection

8.1. Control parameters Exposure
Exposure Limits

Chemical Name	European Union	United Kingdom	France	Spain	Germany
Peg 8000 25322-68-3	-	-	-	-	TWA: 1000 mg/m³ Ceiling / Peak: 8000 mg/m³
Chemical Name	**Austria**	**Switzerland**	**Poland**	**Norway**	**Ireland**
Peg 8000 25322-68-3	STEL 4000 mg/m³ TWA: 1000 mg/m³	TWA: 1000 mg/m³	-	-	-

8.2. Exposure controls
Engineering controls
Showers. Eyewash stations.
Individual protection measures, such as personal protective equipment
Eye/face protection Wear safety glasses with side shields (or goggles). Skin and body protection Wear suitable protective clothing and gloves.
Respiratory protection
Use in well ventilated areas.
General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

Section 9: Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Colorless
Odor	Mild
Odor threshold	No information available

Section 10: Stability and Reactivity

10.1. Reactivity
No data available.
10.2. Chemical stability
Stable under normal conditions.
10.3. Possibility of hazardous reactions
Can react briskly with oxidizers - danger of explosion.
10.4. Conditions to avoid
Incompatible materials. Ignition sources. Heat.
10.5. Incompatible materials
Strong oxidizing agents.
10.6. Hazardous decomposition products
Thermal decomposition can lead to release of irritating and toxic gases and vapors. Carbon monoxide. Carbon dioxide (CO_2).

Section 11: Toxicological Information

11.1. Information on toxicological effects
Acute toxicity
Product information
Product does not present an acute toxicity hazard based on known or supplied information.
Inhalation
Avoid breathing vapors or mists
May cause irritation of respiratory tract
Eye contact
Redness
May cause slight irritation
Skin contact
Prolonged contact may cause redness and irritation
Repeated exposure may cause skin dryness or cracking
Ingestion
May cause drowsiness or dizziness
Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea
Symptoms include burning sensation, coughing, wheezing, shortness of breath, headache, nausea, and vomiting

---

Section 12: Ecological Information

12.1. Toxicity
50 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Peg 8000	-	5000: 24 h Carassius auratus mg/L LC50	-

12.2. Persistence and degradability
No information available
12.3. Bioaccumulative potential
No information available
12.4. Mobility in soil
No information available

12.5. Results of PBT and vPvB assessment
No information available
12.6. Other adverse effects
No information available
Endocrine disruptor information
No information available
Ozone
No information available

Section 13: Disposal Considerations

Dispose of in accordance with Federal, State, and local regulations.

Section 14: Transport Information

US DOT

Shipping Name: Not regulated.

Section 15: Regulatory Information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
National Regulations
Occupational Illnesses (R-463-3, France)
European Union
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemi work
International Inventories
All of the components in the product are on the following Inventory lists TSCA (United States):, Canada (DSL Europe (EINECS/ELINCS), Australia (AICS), South Korea (KECL):, China (IECSC), Philippines (PICCS).

TSCA	Complies
EINECS	-
ELINCS	-
DSL	Complies
NDSL	Complies
PICCS	Complies
ENCS	-
IECSC	Complies
AICS	Complies
KECL	Complies

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Subst
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
PICCS - Philippines Inventory of Chemicals and Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
AICS - Australian Inventory of Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances

15.2. Chemical safety assessment
No information available

Section 16: Other Information

The above information is offered in good faith as accurate, but without guarantee, and should be used only as a guide. 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. It doesn't represent any guarantee of the properties of the product. IMMAGINA BIOTECHNOLOGY srl shall not be held liable for any damage resulting from handling of from contact with the above product. All risks of use of the product should be assumed by the user.

Section 1: Company and Chemical Identification

IMMAGINA BIOTECHNOLOGY srl, Via Sommative 18, 38123 Trento, Italy, Tel: +390461312018, info@immaginabiotech.com

Chemical Name: DTT (Dithiothreitol) (#IBT0291)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Acute toxicity, Oral (Category 4), H302
Long-term (chronic) aquatic hazard (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram

Signal word	Warning
Hazard statement(s)	
H302	Harmful if swallowed.
H412	Harmful to aquatic life with long lasting effects.
Precautionary statement(s)	
P273	Avoid release to the environment.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
Supplemental Hazard Statements	none

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms : threo-1,4-Dimercapto-2,3-butanediol
Cleland's reagent
DTT

Formula : $C_4H_{10}O_2S_2$
Molecular weight : 154,25 g/mol
CAS-No. : 3483-12-3
EC-No. : 222-468-7

Component	Classification	Concentration
(R*,R*)-1,4-Dimercaptobutane-2,3-diol	Acute Tox. 4; Aquatic Chronic 3; H302, H412	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

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.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media Suitable

extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Carbon oxides, Sulphur oxides

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Store in cool place. Recommended storage temperature 2 - 8 °C

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with workplace control parameters

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0,11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact Material:
Nitrile rubber
Minimum layer thickness: 0,11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator.For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU

EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: powder Colour: white
b)	Odour	unpleasant
c)	Odour Threshold	No data available
d)	pH	4,0 - 6 at 15,4 g/l at 25 °C
e)	Melting point/freezing point	Melting point/range: 41 - 44 °C No
f)	Initial boiling point and boiling range	data available
g)	Flash point	113 °C - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	No data available
n)	Water solubility	15,4 g/l at 20 °C
o)	Partition coefficient: n-octanol/water	log Pow: 0,12 at 25 °C - Bioaccumulation is not expected., (Lit.)log Pow: -0,5 at 25 °C - Bioaccumulation is not expected.
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available

10.2 Chemical stability
May decompose on exposure to moist air or water. Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Bases, Oxidizing agents, Reducing agents, Alkali metals

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Sulphur oxides
Other decomposition products - No data available In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects Acute toxicity

LD50 Oral - Rat - 400 mg/kg Remarks: (External MSDS)

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

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.

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information

RTECS: EK1610000

Nausea, Headache, Vomiting, Central nervous system depression, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Liver - Irregularities - Based on Human Evidence

SECTION 12: Ecological information

12.1 Toxicity

No data available

Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - 27 mg/l - 48 h Remarks: (ECOTOX Database)

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

Harmful to aquatic life with long lasting effects. No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods Product

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company. Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number

ADR/RID: - IMDG: - IATA: 3335

14.2 UN proper shipping name

ADR/RID: Not dangerous goods
IMDG: Not dangerous goods
IATA: Aviation regulated solid, n.o.s. ((R*,R*)-1,4-Dimercaptobutane-2,3-diol)

14.3 Transport hazard class(es)

ADR/RID: - IMDG: - IATA: 9

14.4 Packaging group

ADR/RID: - IMDG: - IATA: III

14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user

No data available

SECTION 15: Regulatory information

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

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

H302	Harmful if swallowed.
H412	Harmful to aquatic life with long lasting effects.

Further information