Safety Data Sheet

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)
Classification according to Regulation (EC) No. 1272/2008 [CLP]

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

Product identifier

Product code	100002324
Product name	E. coli DNA Ligase 100 U (10 U/uL)
Unique Formula Identifier (UFI)	Not Applicable
Chemical Name	Not Applicable
REACH registration number	No registration number is given yet for this substance / substances in this mixture since the annual import quantity is less than one tonnage per annum or the transition period for its registration according to Article 23 of REACH has not yet expired.

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

Relevant identified uses	For research use only
Use Description Code	SU22 - Professional uses: Public domain (administration, education, entertainment, services, craftsmen), PROC15 - Use as laboratory reagent, PC21 - Laboratory chemicals, SU24 - Scientific research and development
Uses advised against	Not for consumer use.

Details of the supplier of the safety data sheet

Manufacturer / Supplier

LIFE TECHNOLOGIES EUROPE BV
KWARTSWEG 2
2665 NN BLEISWIJK
NETHERLANDS
31-(0)180 392 400
Email: MSDS@lifetech.com

Life Technologies Limited
3 Fountain Drive
Inchinnan Business Park
Paisley
PA4 9RF, UK
+44 (0)141 814 6100

Emergency telephone number

24 hour Emergency Response for Hazardous Materials [or Dangerous Goods] Incident. Spill, Leak, Fire, Exposure, or Accident. Call CHEMTREC

Within the USA + Canada: 1-800-424-9300 and 1-703-527-3887
Outside the USA + Canada: 1-703-741-5970

Country Specific Emergency Number (if available):

CHEMTREC Ireland (Dublin) +(353)-19014670 (Greeting Language: English and Irish)
CHEMTREC UK (London) +(44)-870-8200418 (Greeting Language: English)

SECTION 2: Hazards identification

Classification of the substance or mixture

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

Physical hazards
Not Hazardous

Health hazards
Not Hazardous

Environmental hazards
Not Hazardous

Additional information
Not Applicable

Label elements

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

Hazard pictograms
None

Signal Word
None

Hazard Statements
Not Applicable

EU Specific Hazard Statements
Not Applicable

Precautionary Statements

Prevention
Not Applicable

Response
Not Applicable

Storage
Not Applicable

Disposal

Not Applicable

Other hazards
Contains a known or suspected endocrine disruptor.

SECTION 3: Composition/information on ingredients

Mixtures

We recommend handling all chemicals with caution.

Chemical Name	CAS No	EINECS-No.	Weight-%	REACH registration number	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	9002-93-1	618-344-0	>=0.1 - <0.99	-	Acute Tox. 4 - H302 Eye Dam. 1 - H318 Chronic Aquatic 2 - H411
Glycerin	56-81-5	200-289-5	45-55	01-2119471987-18-XXXX	Not classified

Chemical Name	Specific concentration limit (SCL)	M-Factor	Acute Toxicity Estimate
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	-	-	-
Glycerin	-	-	-

SECTION 4: First aid measures

Description of first aid measures

Skin contact Rinse skin with water. Immediate medical attention is not required.
Eye contact Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Ingestion Not expected to present a significant ingestion hazard under anticipated conditions of normal use. If you feel unwell, seek medical advice.
Inhalation Not expected to be an inhalation hazard under anticipated conditions of normal use of this material. Consult a physician if necessary.
Notes to Physician Treat symptomatically.

Most important symptoms and effects, both acute and delayed
Not Applicable

Indication of any immediate medical attention and special treatment needed
None.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media	Water spray. Carbon dioxide (CO_2). Foam. Dry chemical.
Unsuitable extinguishing media	No information available.

Special hazards arising from the substance or mixture Not known

Hazardous Combustion Products	None under normal use conditions.

Advice for firefighters Standard procedure for chemical fires.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures
Ensure adequate ventilation
Always wear recommended Personal Protective Equipment
Use personal protection equipment
See section 8 for more information

Environmental precautions
Prevent product from entering drains. Do not allow material to contaminate ground water system.

Methods and material for containment and cleaning up
Soak up with inert absorbent material.

Reference to other sections
See section 8 for more information.

SECTION 7: Handling and storage

Precautions for safe handling
Use personal protective equipment as required. No special handling advices are necessary.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feedingstuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and immediately after handling the product.

Conditions for safe storage, including any incompatibilities
Keep in a dry, cool and well-ventilated place. Keep in properly labelled containers.

Specific end use(s)
For research use only.

SECTION 8: Exposure controls/personal protection

Control parameters

Chemical Name	EU OEL (TWA)	EU OEL (STEL)	EU Skin Notation
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy- 9002-93-1	None	None	None
Glycerin 56-81-5	None	None	None

Chemical Name	Austria	Belgium (TWA)	Czech Republic
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy- 9002-93-1	None	None	None
Glycerin 56-81-5	None	10 mg/m³	10 mg/m³ TWA 15 mg/m³ Ceiling

Chemical Name	Denmark (TWA)	Finland OEL (TWA)	France OEL (VME)
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy- 9002-93-1	None	None	None
Glycerin 56-81-5	None	None	10 mg/m³

Chemical Name	Germany OEL (TWA)	Ireland (TWA)	Italy OEL (TWA)
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy- 9002-93-1	None	None	None
Glycerin 56-81-5	200 mg/m³ exposure factor 2	None	None

Chemical Name	Lithuania OEL (TWA)	Netherlands OEL (MAC)	Norway
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy- 9002-93-1	None	None	None
Glycerin 56-81-5	None	None	None

Chemical Name	Poland	Portugal	Spain OEL (TWA)
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy- 9002-93-1	None	None	None
Glycerin 56-81-5	10 mg/m³ TWA	10 mg/m³ TWA	10 mg/m³

Chemical Name	Sweden - Occupational Exposure Limits - TLVs (LLVs)	Switzerland	United Kingdom
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy- 9002-93-1	None	None	None
Glycerin 56-81-5	None	100 mg/m³ STEL 50 mg/m³ TWA	10 mg/m³ TWA

Derived No Effect Level (DNEL)

See table for values

Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy- 9002-93-1 (>=0.1 - <0.99)	None	None	None	None
Glycerin 56-81-5 (45-55)	None	None	None	None

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy- 9002-93-1 (>=0.1 - <0.99)	None	None	None	None
Glycerin 56-81-5 (45-55)	None	None	DNEL = 56mg/m³	None

Predicted No Effect Concentration (PNEC)
See table for values

Chemical Name	Fresh water sediment	Fresh water	Water Intermittent	Microorganisms in sewage treatment	Soil (Agriculture)
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethyl butyl)phenyl]-.omega.-hydroxy - 9002-93-1	None	None	None	None	None
Glycerin 56-81-5	PNEC = 3.3mg/kg sediment dw	None	PNEC = 8.85mg/L	PNEC = 1000mg/L	PNEC = 0.141mg/kg soil dw

Component	Marine water	Marine water sediment	Marine water Intermittent	Food chain	Air
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethyl butyl)phenyl]-.omega.-hydroxy - 9002-93-1 (>=0.1 - <0.99)	None	None	None	None	None
Glycerin 56-81-5 (45-55)	PNEC = 0.0885mg/L	PNEC = 0.33mg/kg sediment dw	None	None	None

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Exposure controls

Personal protection equipment

Respiratory protection In case of insufficient ventilation wear respirators and components tested and approved under appropriate government standards.

Hand protection Wear suitable gloves Glove material: Compatible chemical-resistant gloves.

Eye protection Tight sealing safety goggles.

Skin and Body Protection Wear suitable protective clothing.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feedingstuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the

inside, before re-use. Wash hands before breaks and immediately after handling the product.

Environmental exposure controls
Prevent product from entering drains. Do not allow material to contaminate ground water system.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	liquid	
Colour	No data	
Odour	No data	
Molecular Weight	No data	
Melting point / melting range	**°C** No data	**°F** No data
Boiling point / boiling range	**°C** No data	**°F** No data
Flammability (solid, gas)	No data	
Lower explosion limit	No data	
Upper explosion limit	No data	
Flash point	**°C** No data	**°F** No data
Autoignition Temperature	**°C** No data	**°F** No data
Decomposition temperature	**°C** No data	**°F** No data
pH	No data	
Evaporation rate	No data	
Viscosity	No data	
Solubility	No data	
Partition coefficient: n-octanol/water	No data	
Vapour Pressure	No data	
Specific gravity	No data	
Relative density	No data	
Vapour density	No data	
Explosive properties	No data	
Oxidising properties	No data	
Particle characteristics	No data	

Other information

Information with regards to physical hazard classes
No information available

Other safety characteristics
No information available

SECTION 10: Stability and reactivity

Reactivity	None known.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Hazardous reaction has not been reported.
Conditions to avoid	No information available.
Incompatible materials	No dangerous reaction known under conditions of normal use.
Hazardous decomposition products	None under normal use conditions.

SECTION 11: Toxicological information

Information on hazard classes as defined in Regulation (EC) No 1272/2008

Product Information No acute toxicity information is available for this product

Acute Toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	= 1800 mg/kg (Rat)	No data available	No data available
Glycerin	= 12600 mg/kg (Rat)	> 10 g/kg(Rabbit)	>570mg/m³(Rat)

Principal Routes of Exposure

Skin corrosion/irritation Data are conclusive but insufficient for classification

Serious eye damage/irritation Data are conclusive but insufficient for classification

Respiratory or skin sensitisation Data are conclusive but insufficient for classification

Specific target organ toxicity (STOT) – single exposure Data are conclusive but insufficient for classification

Specific target organ toxicity (STOT) – repeated exposure Data are conclusive but insufficient for classification

Carcinogenicity Data are conclusive but insufficient for classification

Germ cell mutagenicity Data are conclusive but insufficient for classification

Reproductive Toxicity Data are conclusive but insufficient for classification

Aspiration Hazard Data are conclusive but insufficient for classification

Information on other hazards

Endocrine disrupting properties Contains a known or suspected endocrine disruptor.

SECTION 12: Ecological information

Toxicity
The environmental impact of this product has not been fully investigated.

Chemical Name	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates	Toxicity to fish	Microtox Data	log Pow
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	No data available	No data available	No data available	No data available	No data available
Glycerin	No data available	No data available	No data available	No data available	logPow-1.75

Persistence and degradability No information available.

Bioaccumulative potential No information available.

Mobility in soil No information available.

Results of PBT and vPvB assessment No information available.

Endocrine disrupting properties
Contains

Chemical Name	EU - Endocrine Disrupters Candidate List
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	Group III Chemical

Other adverse effects Contains a known or suspected endocrine disruptor.
Persistent Organic Pollutant This product does not contain any known or suspected substance

Ozone depletion potential (ODP) This product does not contain any known or suspected substance

SECTION 13: Disposal considerations

Waste treatment methods
The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in according to approved disposal technique. Disposal of this product, its solutions or of any by-products, shall comply with the requirements of all applicable local, regional or national/federal regulations. Do not empty into drains. Do not dispose of waste into sewer.

SECTION 14: Transport information

IATA / ADR / DOT-US / IMDG
Not regulated in the meaning of transport regulations

UN number or ID number Not Applicable
UN proper shipping name Not Applicable

Transport hazard class(es)	Not Applicable
Packing group	Not Applicable

Environmental hazards
Not Applicable

Special precautions for user
Not Applicable

Maritime transport in bulk according to IMO instruments
Not Applicable.

SECTION 15: Regulatory information

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

Substances of Very High Concern

Chemical Name	Weight-%	EU - REACH (1907/2006) - Article 59(1) - Candidate List of Substances for Eventual Inclusion in Annex XIV
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	>=0.1 - <0.99	Reason for inclusion Endocrine disrupting properties, Article 57f - environment

Substance subject to authorisation per REACH Annex XIV
Contains:

Chemical Name	Weight-%	Substance subject to authorisation per REACH Annex XIV
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	>=0.1 - <0.99	Intrinsic properties: Endocrine disrupting properties (Article 57(f) - environment) Application date: July 4, 2019 Sunset date: January 4, 2021 Exempted uses: extended latest application and sunset date for the research, development and production of medicinal products or medical devices in view of their use for the diagnosis, treatment or prevention of the coronavirus disease (COVID-19) (42)

Restricted substances under EC 1907/2006, Annex XVII
None

Regulation (EC) No 649/2012 (Rotterdam Convention - export/import of dangerous chemicals)
None

Regulation (EU) No 2019/1021 (Stockholm Convention – persistent organic pollutants)
None

EU - Substances Depleting the Ozone layer (1005/2009)
None

German Water hazard classes (Wassergefährdungsklassen)

Chemical Name	Weight-%	Water hazard class (WGK)
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	>=0.1 - <0.99	hazard class 2 - obviously hazardous to water
Glycerin	45-55	hazard class 1 - slightly hazardous to water

Other International Inventories

Chemical Name	EINECS (European Union)	ELINCS (European List of Notified Chemical Substances)	ENCS (Japan)	PICCS (Philippines)
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	-	-	Listed	Listed
Glycerin	Listed	-	Listed	Listed

Chemical Name	AICS (Australia)	South Korea (KECL)	Canada (DSL)	NDSL
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	Listed	Listed	Listed	-
Glycerin	Listed	Listed	Listed	-

Chemical safety assessment

No Chemical safety assessment has been carried out.

SECTION 16: Other information

Reason for revision Update according to Commission Regulation EU No. 2020/878
Revision number 7
Revision date 15-Mar-2024

References
• ECHA: http://echa.europa.eu/
• TOXNET: http://toxnet.nlm.nih.gov/
• eChemPortal: http://www.echemportal.org/
• LOLI database: https://www.chemadvisor.com/loli-database

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:
Not classified

Abbreviations and acronyms
TWA - Time-Weighted Average
OELs - Occupational Exposure Limits
STEL - Short Term Exposure Limit
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
KECL - Korean Existing and Evaluated Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
CEPA - Canadian Environmental Protection Act
EPA - Environmental Protection Agency
OSHA - Occupational Safety and Health Administration of the US Department of Labour
IATA - International Air Transport Association
DOT - Department of Transportation
IMDG - International Maritime Dangerous Goods
ACGIH - American Conference of Governmental Industrial Hygienists
NIOSH - National Institute for Occupational Safety and Health
AIHA - American Industrial Hygiene Association
HMIS - Department of Defense Hazardous Materials Information System
NTP - National Toxicology Program
IARC - International Agency for Research on Cancer

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006 COMMISSION REGULATION (EU) 2020/878 amending Annex II to Regulation (EC) No 1907/2006.

"The above information was acquired by diligent search and/or investigation and the recommendations are based on prudent application of professional judgment. The information shall not be taken as being all inclusive and is to be used only as a guide. All materials and mixtures may present unknown hazards and should be used with caution. Since the Company cannot control the actual methods, volumes, or conditions of use, the Company shall not be held liable for any damages or losses resulting from the handling or from contact with the product as described herein. THE INFORMATION IN THIS SDS DOES NOT CONSTITUTE A WARRANTY, EXPRESSED OR IMPLIED,INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE"