



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
REACH Regulation (EC) No 1907/2006, as retained in UK law by (SI 2019/758 as amended)

Revision date 25-Nov-2024

Version 1

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

### 1.1. Product identifier

**Product name** NEBNext Second Strand Synthesis Reaction Buffer

**Product No** E7427

**Pure substance/mixture** Mixture

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

**Recommended use** This product is for research and development only

**Uses advised against** No information available

### 1.3. Details of the supplier of the safety data sheet

#### Supplier

New England BioLabs  
240 County Road  
Ipswich, MA 01938  
USA

#### For further information, please contact

**Contact Point** 978-927-5054, 800-632-5227 (toll free)

**E-mail address** info@neb.com

### 1.4. Emergency telephone number

**Emergency Telephone** Chemtrec +44 20 3885 0382

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

**GB CLP (SI 2020/1567 as amended)**

Not classified

### 2.2. Label elements

Not classified

#### Hazard statements

Not classified.

EUH210 - Safety data sheet available on request.

### 2.3. Other hazards

#### Other hazards

No information available.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

Chemical name	Weight-%	EC No (EU Index No)	UK REACH registration number	Classification according to GB CLP (SI 2020/1567 as amended)	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)	Notes
Ammonium Sulfate 7783-20-2	0 - 10%	231-984-1	-	-	-	-	-	-

**Full text of H- and EUH-phrases: see section 16**

#### Acute Toxicity Estimate

In the absence of LD50/LC50 data, the conversion value (converted acute toxicity point estimate) may be indicated here; please note that these values do not represent test results

Chemical name	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapor - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Ammonium Sulfate 7783-20-2	2840	2000	No data available	No data available	No data available

This product does not contain candidate substances of very high concern at a concentration  $\geq 0.1\%$  (UK REACH Article 59)

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

<b>Inhalation</b>	Remove to fresh air.
<b>Eye contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
<b>Skin contact</b>	Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.
<b>Ingestion</b>	Rinse mouth.

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

**Symptoms** No information available.

Effects of Exposure No information available.

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

Note to physicians Treat symptomatically.

**SECTION 5: Firefighting measures**

**5.1. Extinguishing media**

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

**5.2. Special hazards arising from the substance or mixture**

Specific hazards arising from the chemical No information available.

**5.3. Advice for firefighters**

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

**SECTION 6: Accidental release measures**

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

Personal precautions Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

**6.2. Environmental precautions**

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 Take up mechanically, placing in appropriate containers for disposal.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

**6.4. Reference to other sections**

Reference to other sections See section 8 for more information. See section 13 for more information.

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling****Advice on safe handling** Ensure adequate ventilation.**General hygiene considerations** Wash hands before breaks and immediately after handling the product.**7.2. Conditions for safe storage, including any incompatibilities****Storage Conditions** Keep container tightly closed in a dry and well-ventilated place.**7.3. Specific end use(s)****Risk management methods [RMM]** The information required is contained in this Safety Data Sheet.**SECTION 8: Exposure controls/personal protection****8.1. Control parameters****Exposure Limits** This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.**Biological occupational exposure limits** This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.**Derived No Effect Level (DNEL) - Workers**

Chemical name	Oral	Dermal	Inhalation
Tris-HCl 1185-53-1		216.6 mg/kg bw/day [4] [6]	152.8 mg/m <sup>3</sup> [4] [6]

**Notes**

[4] Systemic health effects.  
[6] Long term.

**Derived No Effect Level (DNEL) - General Public**

Chemical name	Oral	Dermal	Inhalation
Tris-HCl 1185-53-1	10.8 mg/kg bw/day [4] [6]		37.7 mg/m <sup>3</sup> [4] [6]
Magnesium Chloride 7786-30-3	7 mg/kg bw/day [4] [6]		

**Notes**

[4] Systemic health effects.  
[6] Long term.

**Predicted No Effect Concentration (PNEC)**

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
Magnesium Chloride 7786-30-3	3.21 mg/L	5.48 mg/L	0.32 mg/L		

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
Magnesium Chloride 7786-30-3	288.9 mg/kg sediment dw	28.89 mg/kg sediment dw	90 mg/L	662.77 mg/kg soil dw	

**8.2. Exposure controls**

**Engineering controls** No information available.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** No special protective equipment required.

**Skin and body protection** No special protective equipment required.

**Respiratory protection** No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

**SECTION 9: Physical and chemical properties**

**9.1. Information on basic physical and chemical properties**

<b>Physical state</b>	Liquid
<b>Appearance</b>	Colorless
<b>Color</b>	No information available
<b>Odor</b>	Mild.
<b>Odor threshold</b>	No information available

<b>Property</b>	<b>Values</b>	<b>Remarks • Method</b>
<b>Melting point / freezing point</b>	No data available	None known
<b>Initial boiling point and boiling range</b>	No data available	None known
<b>Flammability (solid, gas)</b>	No data available	None known
<b>Flammability Limit in Air</b>		None known
<b>Upper flammability or explosive limits</b>	No data available	
<b>Lower flammability or explosive limits</b>	No data available	
<b>Flash point</b>	No data available	None known
<b>Autoignition temperature</b>	No data available	None known
<b>Decomposition temperature</b>		None known
<b>pH</b>	7.4	
<b>pH (as aqueous solution)</b>	No data available	None known

Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Water solubility	No data available	None known
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Vapor pressure	No data available	None known
Relative density	No data available	None known
Bulk density	No data available	
Liquid Density	No data available	
Vapor density	No data available	None known
Particle characteristics		
Particle Size	No information available	
Particle Size Distribution	No information available	
Explosive properties	No information available	
Oxidizing properties	No information available	

9.2. Other information

**SECTION 10: Stability and reactivity**

10.1. Reactivity

Reactivity No information available.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid None known based on information supplied.

10.5. Incompatible materials

Incompatible materials None known based on information supplied.

10.6. Hazardous decomposition products

Hazardous decomposition products None known based on information supplied.

**SECTION 11: Toxicological information**

11.1. Toxicological information

Information on likely routes of exposure

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

**Skin contact** Specific test data for the substance or mixture is not available.

**Ingestion** Specific test data for the substance or mixture is not available.

**Symptoms related to the physical, chemical and toxicological characteristics**

**Symptoms** No information available.

**Acute toxicity** No information available.

**Numerical measures of toxicity**

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	177,500.00 mg/kg
ATEmix (dermal)	125,000.00 mg/kg
ATEmix (inhalation-gas)	99,999.00 ppm
ATEmix (inhalation-vapor)	99,999.00 mg/l
ATEmix (inhalation-dust/mist)	99,999.00 mg/l

**Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Ammonium Sulfate	= 2840 mg/kg ( Rat )	> 2000 mg/kg ( Rat )	-

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Skin corrosion/irritation** No information available.

**Serious eye damage/eye irritation** No information available.

**Respiratory or skin sensitization** No information available.

**Germ cell mutagenicity** No information available.

**Carcinogenicity** No information available.

**Reproductive toxicity** No information available.

**STOT - single exposure** No information available.

**STOT - repeated exposure** No information available.

**Aspiration hazard** No information available.

**Other adverse effects** No information available.

**SECTION 12: Ecological information**

**12.1. Toxicity**  
**Ecotoxicity**

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Ammonium Sulfate	-	LC50: =250mg/L (96h, Brachydanio rerio) LC50: =480mg/L (96h, Brachydanio rerio) LC50: =420mg/L (96h, Brachydanio rerio) LC50: =18mg/L (96h, Cyprinus carpio) LC50: 32.2 - 41.9mg/L (96h, Oncorhynchus mykiss) LC50: 5.2 - 8.2mg/L (96h, Oncorhynchus mykiss) LC50: >100mg/L (96h, Pimephales promelas) LC50: 123 - 128mg/L (96h, Poecilia reticulata) LC50: =126mg/L (96h, Poecilia reticulata)	-	LC50: =14mg/L (48h, Daphnia magna)

**12.2. Persistence and degradability**

**Persistence and degradability** No information available.

**12.3. Bioaccumulative potential**

**Bioaccumulation**

**Component Information**

Chemical name	Partition coefficient
Ammonium Sulfate	-5.1

**12.4. Mobility in soil**

**Mobility in soil** No information available.

**12.5. Results of PBT and vPvB assessment**

**PBT and vPvB assessment** The product does not contain any substance(s) classified as PBT or vPvB above the threshold of declaration.

Chemical name	PBT and vPvB assessment
Ammonium Sulfate	The substance is not PBT / vPvB

**12.6. Other adverse effects**

No information available.

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

**Waste from residues/unused products** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

**SECTION 14: Transport information**

IATA



14.1 UN number or ID number Not regulated  
 14.2  
 14.3 Transport hazard class(es) Not regulated  
 14.4 Packing group Not regulated  
 14.5 Environmental hazard Not applicable  
 14.6 Special precautions for user  
 Special Provisions None

**IMDG**

14.1 UN number or ID number Not regulated  
 14.2  
 14.3 Transport hazard class(es) Not regulated  
 14.4 Packing group Not regulated  
 14.5 Environmental hazard Not applicable  
 14.6 Special precautions for user  
 Special Provisions None  
 14.7 Maritime transport in bulk according to IMO instruments No information available

**RID**

14.1 UN number or ID number Not regulated  
 14.2  
 14.3 Transport hazard class(es) Not regulated  
 14.4 Packing group Not regulated  
 14.5 Environmental hazard Not applicable  
 14.6 Special precautions for user  
 Special Provisions None

**ADR**

14.1 UN number or ID number Not regulated  
 14.2  
 14.3 Transport hazard class(es) Not regulated  
 14.4 Packing group Not regulated  
 14.5 Environmental hazard Not applicable  
 14.6 Special precautions for user  
 Special Provisions None

**SECTION 15: Regulatory information**

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

**Authorizations and/or restrictions on use:**

This product contains one or more substances subject to restriction (UK REACH - Annex XVII).

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorization per REACH Annex XIV
Ammonium Sulfate - 7783-20-2	Use restricted. See item 65.	-

**Persistent Organic Pollutants**

Not applicable

**Export Notification requirements**

Not applicable

**Named dangerous substances per COMAH (SI 2015/483 as amended)**

Not applicable

**The Ozone-Depleting Substances Regulations 2015**

Not applicable

**The Biocidal Products Regulations 2001 (as amended)**

Not applicable

**The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (as amended)**

Not applicable

**Poisons and Explosive Precursors**

Not applicable

**International Inventories**

<b>TSCA</b>	Contact supplier for inventory compliance status
<b>DSL/NDSL</b>	Contact supplier for inventory compliance status
<b>EINECS/ELINCS</b>	Contact supplier for inventory compliance status
<b>ENCS</b>	Contact supplier for inventory compliance status
<b>IECSC</b>	Contact supplier for inventory compliance status
<b>KECL</b>	Contact supplier for inventory compliance status
<b>PICCS</b>	Contact supplier for inventory compliance status
<b>AIC</b>	Contact supplier for inventory compliance status
<b>NZIoC</b>	Contact supplier for inventory compliance status
<b>TCSI</b>	Contact supplier for inventory compliance status

**Legend:**

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

**15.2. Chemical safety assessment**

**Chemical Safety Report** No information available

**SECTION 16: Other information**

**Key or legend to abbreviations and acronyms used in the safety data sheet**

**Legend**

- SVHC: Substances of Very High Concern for Authorization:
- PBT: Persistent, Bioaccumulative, and Toxic (PBT) Substances
- vPvB: Very Persistent and very Bioaccumulative (vPvB) Substances
- STOT: Specific Target Organ Toxicity
- ATE: Acute Toxicity Estimate
- LC50: 50% Lethal Concentration
- LD50: 50% Lethal Dose

**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
+	Sensitizers		

**Classification procedure**

Classification according to GB CLP (SI 2020/1567 as amended)

Method Used

Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - vapor	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitization	Calculation method
Skin sensitization	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method

**Key literature references and sources for data used to compile the SDS**

Agency for Toxic Substances and Disease Registry (ATSDR)  
U.S. Environmental Protection Agency ChemView Database  
European Food Safety Authority (EFSA)  
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA\_RAC)  
European Chemicals Agency (ECHA) (ECHA\_API)  
Environmental Protection Agency  
Acute Exposure Guideline Level(s) (AEGl(s))  
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
U.S. Environmental Protection Agency High Production Volume Chemicals  
Food Research Journal  
Hazardous Substance Database  
International Uniform Chemical Information Database (IUCLID)  
National Institute of Technology and Evaluation (NITE)  
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)  
NIOSH (National Institute for Occupational Safety and Health)  
National Library of Medicine's ChemID Plus (NLM CIP)  
National Library of Medicine's PubMed database (NLM PUBMED)  
U.S. National Toxicology Program (NTP)  
New Zealand's Chemical Classification and Information Database (CCID)  
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organization for Economic Co-operation and Development High Production Volume Chemicals Program  
Organization for Economic Co-operation and Development Screening Information Data Set  
World Health Organization

**Revision date** 25-Nov-2024

**Further information** SDS is valid 3 years from revision date. Contact info@neb.com for latest revision

**This SDS complies with the requirements of UK REACH Regulations SI 2019/758 (as amended)**

**Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work**

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge and belief at the date of publication. This information is intended only as a guide for safe handling, use, processing, storage, transportation, disposal and release and should not be taken as a warranty or quality specification. The information relates only to the specific material and may not be valid for such material used in combination with any other materials or in any process unless expressly specified in the text. New England Biolabs will not be liable for any damages resulting from handling or contact with the product.

**End of Safety Data Sheet**