

Page 1/8

## **Safety Data Sheet** acc. to OSHA HCS

Date of issue: 03/06/2025 Revision date 03/06/2025

### 1 Identification

· Product identifier

· Trade name: LNP Dilution Buffer B (1X)

· Other means of identification

· Article number: 400772

· Application of the substance / the mixture

This product is for research use - Not for human or veterinary diagnostic or therapeutic use.

Details of the supplier of the safety data sheet

Manufacturer/Supplier: Cayman Chemical Co. 1180 E. Ellsworth Rd. Ann Arbor, MI 48108

USA

· Information department: Product safety department

· Emergency telephone number:

During normal opening times: +1 (734) 971-3335

US/CANADA: 800-424-9300

Outside US/CANADA: 703-741-5970

## 2 Hazard(s) identification

· Classification of the substance or mixture

The product is not classified, according to the Globally Harmonized System (GHS).

- · Label elements
- · GHS label elements None
- · Hazard pictograms None
- · Signal word None
- · Hazard statements None
- · Information pertaining to particular dangers for man and environment:
- · Classification system:
- · NFPA ratings (scale 0 4)



Health = 0Fire = 0

Reactivity = 0

· HMIS-ratings (scale 0 - 4)



Health = 0

Fire = 0

(Contd. on page 2)

(Contd. from page 1)

# Safety Data Sheet acc. to OSHA HCS

Date of issue: 03/06/2025 Revision date 03/06/2025

Trade name: LNP Dilution Buffer B (1X)

· Other hazards

· Results of PBT and vPvB assessment

· **PBT:** Not applicable.

· vPvB: Not applicable.

· Classification according to (d)(1)(ii) of § 1910.1200

The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.

Hazards not otherwise classified

There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

### 3 Composition/information on ingredients

- · Chemical characterization: Mixtures
- · **Description:** Mixture of the substances listed below with nonhazardous additions.
- · Dangerous components: None

· Other ingredients	
Trade Secret	>50–≤100%
Trade Secret	≤2.5%
Trade Secret	≤2.5%
Trade Secret	≤2.5%

#### · Additional information:

The specific chemical identity of composition and exact percentage is being withheld as a trade secret. The specific chemical identity and exact percentage is made available to health professionals, employees, and designated representatives in accordance with the applicable provisions of paragraph §1910.1200.

### 4 First-aid measures

- Description of first aid measures
- · General information: No special measures required.
- · After inhalation: Supply fresh air; consult doctor in case of complaints.
- · After skin contact: Generally the product does not irritate the skin.
- After eye contact: Rinse opened eye for several minutes under running water.
- · After swallowing: If symptoms persist consult doctor.
- Most important symptoms and effects, both acute and delayed

No further relevant information available.

· Indication of any immediate medical attention and special treatment needed

No further relevant information available.

## **5 Fire-fighting measures**

- · Extinguishing media
- Suitable extinguishing agents:

Use fire fighting measures that suit the environment.

A solid water stream may be inefficient.

· Special hazards arising from the substance or mixture No further relevant information available.

(Contd. on page 3)

Date of issue: 03/06/2025 Revision date 03/06/2025

Trade name: LNP Dilution Buffer B (1X)

(Contd. from page 2)

- · Advice for firefighters
- · Protective equipment: No special measures required.

#### 6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Not required.
- · Environmental precautions: Dilute with plenty of water.
- Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

**Protective Action Criteria for Chemicals** 

· PAC-1:	
Trade Secret	11 mg/m³
Trade Secret	5 ppm
· PAC-2:	
Trade Secret	120 mg/m³
Trade Secret	35 ppm
· PAC-3:	
Trade Secret	700 mg/m³
Trade Secret	250 ppm

#### Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

### 7 Handling and storage

- · Precautions for safe handling No special measures required.
- · Information about protection against explosions and fires: No special measures required.
- Conditions for safe storage, including any incompatibilities
- · Storage: Store in accordance with information listed on the product insert.
- · Requirements to be met by storerooms and receptacles: No special requirements.
- · Information about storage in one common storage facility: Not required.
- · Further information about storage conditions: None.
- · Specific end use(s) No further relevant information available.

### 8 Exposure controls/personal protection

- · Control parameters
- Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- · Additional information: The lists that were valid during the creation were used as basis.
- · Exposure controls
- · Appropriate engineering controls No further data; see section 7.
- · Personal protective equipment:
- · General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.

Breathing equipment: Not required.

(Contd. on page 4)

(Contd. from page 3)

## Safety Data Sheet acc. to OSHA HCS

Date of issue: 03/06/2025 Revision date 03/06/2025

Trade name: LNP Dilution Buffer B (1X)

· Protection of hands:

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

• Eye protection: Goggles recommended during refilling.

### 9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Physical state Liquid

· Color: According to product specification

Odorless · Odor:

· Storage Buffer

· Odor threshold: Not determined.

· Formulation

· Melting point/Melting range: 0 °C (32 °F) Boiling point/Boiling range: 100 °C (212 °F) · Flammability: Not applicable.

· Explosion limits:

· Lower: Not determined. · Upper: Not determined. · Flash point: Not applicable. **Decomposition temperature:** Not determined. · pH-value: Not determined.

· Viscosity:

· Kinematic: Not determined.

· SOLUBILITY

· Dynamic at 20 °C (68 °F): 0.952 mPas

Solubility in / Miscibility with

· Water: Fully miscible. · Partition coefficient (n-octanol/water): Not determined. · Vapor pressure at 20 °C (68 °F): 23 hPa (17.3 mm Hg)

· Vapor pressure:

Density at 20 °C (68 °F): 1 g/cm<sup>3</sup> (8.345 lbs/gal) · Relative density Not determined. · Vapor density Not determined. Particle characteristics

Not applicable.

(Contd. on page 5)

Date of issue: 03/06/2025 Revision date 03/06/2025

Trade name: LNP Dilution Buffer B (1X)

(Contd. from page 4)

· Other information

· Appearance:

· Form: Liquid

· Important information on protection of health

and environment, and on safety.

· **Ignition temperature:** Product is not selfigniting.

• Danger of explosion: Product does not present an explosion hazard.

· Solvent content:

Organic solvents: 0.0 %
 Water: 99.1 %
 VOC content: 0.01 %

0.1 g/l / 0.00 lb/gal

· Solids content: 0.9 %

· Change in condition

· Evaporation rate Not determined.

### 10 Stability and reactivity

- · Reactivity No further relevant information available.
- · Chemical stability
- Thermal decomposition / conditions to be avoided:

No decomposition if used according to specifications.

- · Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known.

### 11 Toxicological information

- Information on toxicological effects
- · Acute toxicity:
- · Primary irritant effect:
- · on the skin: No irritant effect.
- · on the eye: No irritating effect.
- · Sensitization: No sensitizing effects known.
- Additional toxicological information:

The product is not subject to classification according to internally approved calculation methods for preparations:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

· Interactive effects No interactive effects between components are known.

· Carcinogenic categories

### · IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

### · NTP (National Toxicology Program)

None of the ingredients is listed.

### · OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

(Contd. on page 6)

Date of issue: 03/06/2025 Revision date 03/06/2025

Trade name: LNP Dilution Buffer B (1X)

· Alternative sources for toxicological information

No non-standard sources for toxicological information where used.

(Contd. from page 5)

### 12 Ecological information

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- Persistence and degradability No further relevant information available.
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- Results of PBT and vPvB assessment
- · **PBT:** Not applicable.
- vPvB: Not applicable.
- Other adverse effects
- · Additional ecological information:
- · General notes: Not hazardous for water.

## 13 Disposal considerations

- · Waste treatment methods
- · Recommendation: Smaller quantities can be disposed of with household waste.
- · Uncleaned packagings:
- · Recommendation: Disposal must be made according to official regulations.
- · Recommended cleansing agent: Water, if necessary with cleansing agents.

14	rans	port in	iformatic	on

· UN-Number · DOT, IMDG, IATA	not regulated
· UN proper shipping name · DOT, IMDG, IATA	not regulated
· Transport hazard class(es)	
· DOT, ADN, IMDG, IATA · Class	not regulated
· Packing group · DOT, IMDG, IATA	not regulated
· Environmental hazards:	Not applicable.
Transport in bulk according to Annex II MARPOL73/78 and the IBC Code	of Not applicable.
· Special precautions for user	Not applicable.
· UN "Model Regulation":	not regulated

US

Date of issue: 03/06/2025 Revision date 03/06/2025

Trade name: LNP Dilution Buffer B (1X)

(Contd. from page 6)

### 15 Regulatory information

- · Safety, health and environmental regulations/legislation specific for the substance or mixture No further relevant information available.
- · Sara
- Section 355 (extremely hazardous substances):

None of the ingredients is listed.

Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act):

All components have the value ACTIVE.

· Hazardous Air Pollutants

None of the ingredients is listed.

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

- Carcinogenic categories
- · EPA (Environmental Protection Agency)

None of the ingredients is listed.

· TLV (Threshold Limit Value)

None of the ingredients is listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

### **16 Other information**

All chemicals may pose unknown hazards and should be used with caution. This SDS applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. Cayman Chemical Company assumes no responsibility for incidental or consequential damages, including lost profits, arising from the use of these data. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Cayman Chemical Company assumes no responsibility for the completeness or accuracy of the information contained herein.

- · Department issuing SDS: Environment protection department.
- Contact: -
- · Date of previous version 07/29/2024
- Date of preparation 03/06/2025
- · Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

Date of issue: 03/06/2025 Revision date 03/06/2025

Trade name: LNP Dilution Buffer B (1X)

IATA: International Air Transport Association EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

NFA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health

TLV: Threshold Limit Value PEL: Permissible Exposure Limit REL: Recommended Exposure Limit

\* Data compared to the previous version altered.

(Contd. from page 7)



Page 1/9

## **Safety Data Sheet** acc. to OSHA HCS

Date of issue: 03/06/2025 Revision date 03/06/2025

### 1 Identification

· Product identifier

· Trade name: LipidLaunch™ ALC-0315 LNP (Loadable)

· Other means of identification

· Article number: 400773

· Application of the substance / the mixture

This product is for research use - Not for human or veterinary diagnostic or therapeutic use.

- Details of the supplier of the safety data sheet
- Manufacturer/Supplier: Cayman Chemical Co. 1180 E. Ellsworth Rd. Ann Arbor, MI 48108

USA

- · Information department: Product safety department
- · Emergency telephone number:

During normal opening times: +1 (734) 971-3335

US/CANADA: 800-424-9300

Outside US/CANADA: 703-741-5970

### 2 Hazard(s) identification

· Classification of the substance or mixture



GHS07

Skin irritation 2 H315 Causes skin irritation.

Eye irritation 2A H319 Causes serious eye irritation.

Aquatic Acute 3 H402 Harmful to aquatic life.

- · Label elements
- · GHS label elements

The product is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms



- · Signal word Warning
- · Hazard statements

H315 Causes skin irritation.

H319 Causes serious eye irritation.

(Contd. on page 2)

Date of issue: 03/06/2025 Revision date 03/06/2025

Trade name: LipidLaunch™ ALC-0315 LNP (Loadable)

(Contd. from page 1)

H402 Harmful to aquatic life. **Precautionary statements** 

P264 Wash thoroughly after handling. P273 Avoid release to the environment.

Wear protective gloves / eye protection / face protection. P280

P302+P352 If on skin: Wash with plenty of water. Specific treatment (see on this label). P321

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if

present and easy to do. Continue rinsing.

P332+P313 If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. P362+P364 P337+P313 If eye irritation persists: Get medical advice/attention.

P501 Dispose of contents/container in accordance with local/regional/national/international

regulations.

- Information pertaining to particular dangers for man and environment:
- · Classification system:
- · NFPA ratings (scale 0 4)



Health = 2 Fire = 1 Reactivity = 0

· HMIS-ratings (scale 0 - 4)



Health = 2Fire = 1

- Other hazards
- · Results of PBT and vPvB assessment
- · **PBT**: Not applicable.
- vPvB: Not applicable.
- Classification according to (d)(1)(ii) of § 1910.1200

The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.

· Hazards not otherwise classified

There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

### 3 Composition/information on ingredients

- · Chemical characterization: Mixtures
- Description: Mixture of the substances listed below with nonhazardous additions.

· Dangerous components:			
Trade Secret		10%	
· Other ingredients	Other ingredients		
CAS: 7732-18-5 RTECS: ZC0110000	Water	88.957%	
	Trade Secret	≤2.5%	
	Trade Secret	≤2.5%	
CAS: 2036272-55-4	ALC-0315	0.071%	
	(Cont	d, on page 3)	

Date of issue: 03/06/2025 Revision date 03/06/2025

Trade name: LipidLaunch™ ALC-0315 LNP (Loadable)

	(Contd.	from page 2)
CAS: 816-94-4	1,2-Distearoyl-sn-glycero-3-PC	0.015%
CAS: 57-88-5 RTECS: FZ8400000	Cholesterol	0.0131%
CAS: 1849616-42-7	ALC-0159	0.0078%

#### · Additional information:

The specific chemical identity of composition and exact percentage is being withheld as a trade secret. The specific chemical identity and exact percentage is made available to health professionals, employees, and designated representatives in accordance with the applicable provisions of paragraph §1910.1200.

### 4 First-aid measures

- · Description of first aid measures
- · General information: Immediately remove any clothing soiled by the product.
- · After inhalation: In case of unconsciousness place patient stably in side position for transportation.
- · After skin contact: Immediately wash with water and soap and rinse thoroughly.
- · After eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

- After swallowing: If symptoms persist consult doctor.
- Most important symptoms and effects, both acute and delayed

No further relevant information available.

· Indication of any immediate medical attention and special treatment needed

No further relevant information available.

### **5 Fire-fighting measures**

- Extinguishing media
- Suitable extinguishing agents:

Use fire fighting measures that suit the environment.

A solid water stream may be inefficient.

- · Special hazards arising from the substance or mixture No further relevant information available.
- Advice for firefighters
- · Protective equipment: No special measures required.

### **6 Accidental release measures**

- · Personal precautions, protective equipment and emergency procedures Not required.
- · Environmental precautions:

Do not allow product to reach sewage system or any water course.

Inform respective authorities in case of seepage into water course or sewage system.

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

· Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to section 13.

**Protective Action Criteria for Chemicals** 

P	Α	C	-1	:
	_	•		

Trade Secret 11 mg/m<sup>3</sup>

(Contd. on page 4)

Date of issue: 03/06/2025 Revision date 03/06/2025

Trade name: LipidLaunch™ ALC-0315 LNP (Loadable)

(Contd. from page 3)

· PAC-2:

Trade Secret 120 mg/m<sup>3</sup>

· PAC-3:

Trade Secret 700 mg/m<sup>3</sup>

#### · Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

## 7 Handling and storage

#### · Precautions for safe handling

No special precautions are necessary if used correctly.

Avoid breathing dust/fume/gas/mist/vapours/spray.

Avoid prolonged or repeated exposure.

Keep away from sources of ignition.

Take precautionary measures against static discharge.re.

- · Information about protection against explosions and fires: No special measures required.
- · Conditions for safe storage, including any incompatibilities
- · Storage: Store in accordance with information listed on the product insert.
- Requirements to be met by storerooms and receptacles: No special requirements.
- Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Keep receptacle tightly sealed.
- · Specific end use(s) No further relevant information available.

### 8 Exposure controls/personal protection

· Control parameters

### · Components with limit values that require monitoring at the workplace:

#### **Trade Secret**

PEL Long-term value: 15\* 5\*\* mg/m³

\*total dust \*\*respirable fraction

REL Long-term value: 10\* 5\*\* mg/m³

\*total dust \*\*respirable fraction

TLV Long-term value: 10 mg/m<sup>3</sup>

A4

- · Additional information: The lists that were valid during the creation were used as basis.
- · Exposure controls
- · Appropriate engineering controls No further data; see section 7.
- · Personal protective equipment:
- General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

· Breathing equipment: Not required.

(Contd. on page 5)

(Contd. from page 4)

## Safety Data Sheet acc. to OSHA HCS

Date of issue: 03/06/2025 Revision date 03/06/2025

Trade name: LipidLaunch™ ALC-0315 LNP (Loadable)

#### · Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

#### Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

#### · Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection:



Tightly sealed goggles

### 9 Physical and chemical properties

- · Information on basic physical and chemical properties
- · General Information

· Physical state Liquid

· Color: According to product specification

· Odor: Characteristic

· Storage Buffer

· Odor threshold: Not determined.

· Formulation 200 µl of loadable ALC-0315 lipid nanoparticles

· Melting point/Melting range: Undetermined. Boiling point/Boiling range: 100 °C (212 °F) · Flammability: Not applicable.

**Explosion limits:** 

· Lower: Not determined. · Upper: Not determined. · Flash point: 345.4 °C (653.7 °F) · Decomposition temperature: Not determined. · pH-value: Not determined.

· Viscosity:

· Kinematic: Not determined.

· SOLUBILITY

· Dynamic: Not determined.

· Solubility in / Miscibility with

· Water: Fully miscible. · Partition coefficient (n-octanol/water): Not determined.

· Vapor pressure at 20 °C (68 °F): 23 hPa (17.3 mm Hg)

(Contd. on page 6)

Date of issue: 03/06/2025 Revision date 03/06/2025

Trade name: LipidLaunch™ ALC-0315 LNP (Loadable)

(Contd. from page 5)

Vapor pressure:

Density: Not determined.
 Relative density Not determined.
 Vapor density Not determined.
 Particle characteristics Not applicable.

· Other information

· Appearance:

· Form: Liquid

· Important information on protection of health

and environment, and on safety.

· **Ignition temperature:** Product is not selfigniting.

• Danger of explosion: Product does not present an explosion hazard.

Solvent content:

• Water: 89.0 % • VOC content: 0.00 %

0.0 g/l / 0.00 lb/gal

· Solids content: 11.0 %

· Change in condition

· Evaporation rate Not determined.

### 10 Stability and reactivity

- · Reactivity No further relevant information available.
- · Chemical stability
- Thermal decomposition / conditions to be avoided:

No decomposition if used according to specifications.

- · Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available.
- · **Incompatible materials:** No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known.

### 11 Toxicological information

- Information on toxicological effects
- · Acute toxicity:

Tuede Ceeust

#### LD/LC50 values that are relevant for classification:

Trade Secret			
	Oral	LD50	29,700 mg/kg (rat)
		TDLO	2 mg/kg (mouse)
			14,000 mg/kg (mouse)

Primary irritant effect:

- on the skin: Irritant to skin and mucous membranes.
- on the eye: Irritating effect.
- · Sensitization: No sensitizing effects known.
- · Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations:

Irritant

(Contd. on page 7)

Date of issue: 03/06/2025 Revision date 03/06/2025

Trade name: LipidLaunch™ ALC-0315 LNP (Loadable)

(Contd. from page 6)

- · Interactive effects No interactive effects between components are known.
- · Carcinogenic categories

IARC (International Agency for Research on Cancer)

57-88-5 Cholesterol

3

· NTP (National Toxicology Program)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

· Alternative sources for toxicological information

No non-standard sources for toxicological information where used.

### 12 Ecological information

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- Results of PBT and vPvB assessment
- · PBT: Not applicable.
- vPvB: Not applicable.
- · Other adverse effects
- Additional ecological information:
- · General notes:

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

## 13 Disposal considerations

- · Waste treatment methods
- Recommendation:

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- · Uncleaned packagings:
- · **Recommendation:** Disposal must be made according to official regulations.
- · Recommended cleansing agent: Water, if necessary with cleansing agents.

## **14 Transport information**

- · UN-Number
- · DOT, IMDG, IATA not regulated
- · UN proper shipping name
- DOT, IMDG, IATA not regulated

(Contd. on page 8)

Date of issue: 03/06/2025 Revision date 03/06/2025

Trade name: LipidLaunch™ ALC-0315 LNP (Loadable)

		(Contd. from page 7
· Transport hazard class(es)		
· DOT, ADN, IMDG, IATA		
· Class	not regulated	
· Packing group		
· DOT, IMDG, IATA	not regulated	
· Environmental hazards:	Not applicable.	
· Transport in bulk according to Annex	( II of	
MARPOL73/78 and the IBC Code	Not applicable.	
· Special precautions for user	Not applicable.	
· UN "Model Regulation":	not regulated	

### 15 Regulatory information

- · Safety, health and environmental regulations/legislation specific for the substance or mixture No further relevant information available.
- · Sara

· Section 355 (extremely	hazardous substances):
--------------------------	------------------------

None of the ingredients is listed.

Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act):		
7732-18-5	Water	ACTIVE
	Trade Secret	ACTIVE
	Trade Secret	ACTIVE
		ACTIVE
57-88-5	Cholesterol	ACTIVE

#### · Hazardous Air Pollutants

None of the ingredients is listed.

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

· Carcinogenic categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

· TLV (Threshold Limit Value)

Trade Secret A4

(Contd. on page 9)

Date of issue: 03/06/2025 Revision date 03/06/2025

Trade name: LipidLaunch™ ALC-0315 LNP (Loadable)

(Contd. from page 8)

#### · NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

## 16 Other information

All chemicals may pose unknown hazards and should be used with caution. This SDS applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. Cayman Chemical Company assumes no responsibility for incidental or consequential damages, including lost profits, arising from the use of these data. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Cayman Chemical Company assumes no responsibility for the completeness or accuracy of the information contained herein.

- · Department issuing SDS: Environment protection department.
- Contact: -
- · Date of previous version 07/29/2024
- · Date of preparation 03/06/2025
- Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transport Association

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Skin irritation 2: Skin corrosion/irritation – Category 2

Eye irritation 2A: Serious eye damage/eye irritation - Category 2A

Aquatic Acute 3: Hazardous to the aquatic environment - acute aquatic hazard - Category 3

\* Data compared to the previous version altered.



Page 1/10

## Safety Data Sheet acc. to OSHA HCS

Date of issue: 03/06/2025 Revision date 03/06/2025

### 1 Identification

· Product identifier

Trade name: LNP Encapsulation Buffer Tablet

Other means of identification

· Article number: 400812

· Application of the substance / the mixture

This product is for research use - Not for human or veterinary diagnostic or therapeutic use.

· Details of the supplier of the safety data sheet

• Manufacturer/Supplier: Cayman Chemical Co. 1180 E. Ellsworth Rd. Ann Arbor, MI 48108

USA

· Information department: Product safety department

· Emergency telephone number:

During normal opening times: +1 (734) 971-3335

US/CANADA: 800-424-9300

Outside US/CANADA: 703-741-5970

### 2 Hazard(s) identification

· Classification of the substance or mixture



GHS08 Health hazard

Specific target organ toxicity (repeated exposure) 2 H373 May cause damage to organs through prolonged or repeated exposure.



Skin irritation 2 H315 Causes skin irritation.

Eye irritation 2A H319 Causes serious eye irritation.

Specific target organ toxicity (single exposure) 3 H335 May cause respiratory irritation.

- · Label elements
- · GHS label elements

The product is classified and labeled according to the Globally Harmonized System (GHS).

(Contd. on page 2)

(Contd. from page 1)

# Safety Data Sheet acc. to OSHA HCS

Date of issue: 03/06/2025 Revision date 03/06/2025

Trade name: LNP Encapsulation Buffer Tablet

· Hazard pictograms





GHS07 GHS08

#### · Signal word Warning

### · Hazard-determining components of labeling:

Trade Secret

#### · Hazard statements

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H373 May cause damage to organs through prolonged or repeated exposure.

### **Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P264 Wash thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves / eye protection / face protection.

P302+P352 If on skin: Wash with plenty of water.

P304+P340 If inhaled: Remove person to fresh air and keep comfortable for breathing.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if

present and easy to do. Continue rinsing.

P312 Call a poison center/doctor if you feel unwell.

P321 Specific treatment (see on this label).

P314 Get medical advice/attention if you feel unwell.

P362+P364 Take off contaminated clothing and wash it before reuse.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international

regulations.

- Information pertaining to particular dangers for man and environment:
- · Classification system:
- NFPA ratings (scale 0 4)



Health = 2 Fire = 0 Reactivity = 0

## · HMIS-ratings (scale 0 - 4)



Health = \*2 Fire = 0 Reactivity = 0

- · Other hazards
- · Results of PBT and vPvB assessment
- · **PBT:** Not applicable.
- · vPvB: Not applicable.
- Classification according to (d)(1)(ii) of § 1910.1200

The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.

(Contd. on page 3)

Date of issue: 03/06/2025 Revision date 03/06/2025

**Trade name: LNP Encapsulation Buffer Tablet** 

· Hazards not otherwise classified

(Contd. from page 2)

There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

### 3 Composition/information on ingredients

- · Chemical characterization: Mixtures
- Description: Mixture of the substances listed below with nonhazardous additions.

· Dangerous components:	
Trade Secret	>50–≤100%
Trade Secret	≥1–≤2.5%
· Other ingredients	
Trade Secret	>10–≤25%
Trade Secret	≤2.5%

#### · Additional information:

The specific chemical identity of composition and exact percentage is being withheld as a trade secret. The specific chemical identity and exact percentage is made available to health professionals, employees, and designated representatives in accordance with the applicable provisions of paragraph §1910.1200.

### 4 First-aid measures

- · Description of first aid measures
- · General information:

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

- · After inhalation: In case of unconsciousness place patient stably in side position for transportation.
- · After skin contact: Immediately wash with water and soap and rinse thoroughly.
- · After eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

- · After swallowing: If symptoms persist consult doctor.
- Most important symptoms and effects, both acute and delayed

No further relevant information available.

· Indication of any immediate medical attention and special treatment needed

No further relevant information available.

### 5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents:

Use fire fighting measures that suit the environment.

A solid water stream may be inefficient.

Special hazards arising from the substance or mixture

67-56-1During heating or in case of fire poisonous gases are produced.

- · Advice for firefighters
- · Protective equipment: Mouth respiratory protective device.

US

Date of issue: 03/06/2025 Revision date 03/06/2025

**Trade name: LNP Encapsulation Buffer Tablet** 

(Contd. from page 3)

### 6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
- Mount respiratory protective device.
- Environmental precautions: Do not allow to enter sewers/ surface or ground water.
- · Methods and material for containment and cleaning up:

Dispose contaminated material as waste according to section 13.

Ensure adequate ventilation.

· Protective Action Criteria for Chemicals

· PAC-1:	
Trade Secret	9.6 mg/m³
· PAC-2:	
Trade Secret	110 mg/m³
· PAC-3:	
Trade Secret	630 mg/m³
· Reference to other sections	

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

## 7 Handling and storage

- Precautions for safe handling Ensure good ventilation/exhaustion at the workplace.
- · Information about protection against explosions and fires:

Keep respiratory protective device available.

- · Conditions for safe storage, including any incompatibilities
- · Storage: Store in accordance with information listed on the product insert.
- Requirements to be met by storerooms and receptacles: No special requirements.
- · Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Keep receptacle tightly sealed.
- · Specific end use(s) No further relevant information available.

### 8 Exposure controls/personal protection

- · Control parameters
- · Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- Additional information: The lists that were valid during the creation were used as basis.
- · Exposure controls
- Appropriate engineering controls No further data; see section 7.
- Personal protective equipment:
- · General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

(Contd. on page 5)

(Contd. from page 4)

# Safety Data Sheet acc. to OSHA HCS

Date of issue: 03/06/2025 Revision date 03/06/2025

Trade name: LNP Encapsulation Buffer Tablet

### · Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

#### Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

#### · Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eve protection:



Tightly sealed goggles

### 9 Physical and chemical properties

- · Information on basic physical and chemical properties
- · General Information

· Physical state Solid

· Color: According to product specification

· Odor: Characteristic

· Storage Buffer

· Odor threshold: Not determined.

· Formulation

Melting point/Melting range:
 Boiling point/Boiling range:
 Flammability:
 Undetermined.
 Not determined.

Explosion limits:

Lower: Not determined.
Upper: Not determined.
Flash point: Not applicable.
Decomposition temperature: Not determined.
pH-value: Not applicable.

· Viscosity:

· **Kinematic:** Not applicable.

· SOLUBILITY

· **Dynamic:** Not applicable.

(Contd. on page 6)

Date of issue: 03/06/2025 Revision date 03/06/2025

Trade name: LNP Encapsulation Buffer Tablet

(Contd. from page 5)

· Solubility in / Miscibility with

Water: Insoluble.
 Partition coefficient (n-octanol/water): Not determined.
 Vapor pressure: Not applicable.

Vapor pressure:

Density: Not determined.
 Relative density Not determined.
 Vapor density Not applicable.
 Particle characteristics Not determined.

· Other information

· Appearance:

· Form: Solid

· Important information on protection of health

and environment, and on safety.

· **Ignition temperature:** Product is not selfigniting.

• **Danger of explosion:** Product does not present an explosion hazard.

· Solvent content:

· VOC content: 0.00 % · Solids content: 100.0 %

· Change in condition

• Evaporation rate Not applicable.

## 10 Stability and reactivity

- · Reactivity No further relevant information available.
- · Chemical stability
- · Thermal decomposition / conditions to be avoided:

No decomposition if used according to specifications.

- · Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known.

## 11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:

· LD/LC50 values that are relevant for classification: Trade Secret				
	TDLO	650 ml/kg (man)		
	LD50	4,000 mg/kg (mouse)		
		3,000 mg/kg (rat)		
	LD50	4 g/kg (mouse)		
Inhalative	LC50	320 mg/m³ (mouse)		
	TCLO	0.63 mg/m³ (human)		
	LCLO	29,300 mg/m³/7h (mouse)		

(Contd. on page 7)

Date of issue: 03/06/2025 Revision date 03/06/2025

#### Trade name: LNP Encapsulation Buffer Tablet

		(Contd. from page 6)		
Irritation of skin	Irritation	500 mg/24h (rabbit) mild		
Irritation of eyes	Irritation	100 mg/24h (rabbit) moderate		
	Intraperitoneal LD50	2,602 mg/kg (mouse)		
	Subcutaneous LD50	31.6 mg/kg (rat)		
	Intravenous LD50	59.5 mg/kg (rat)		
	Data	15 mg/3D (human) mild		
	Subcutaneous LD50	3 g/kg (mouse)		
Trade Secret				
Oral	LDLO	4,640 mg/kg (rat)		

- · Primary irritant effect:
- on the skin: Irritant to skin and mucous membranes.
- on the eye: Irritating effect.
- · Sensitization: No sensitizing effects known.
- · Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations:

İrritant

- · Interactive effects No interactive effects between components are known.
- · Carcinogenic categories
- · IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

Alternative sources for toxicological information

No non-standard sources for toxicological information where used.

### 12 Ecological information

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- · Results of PBT and vPvB assessment
- · **PBT:** Not applicable.
- vPvB: Not applicable.
- · Other adverse effects
- · Additional ecological information:
- · General notes:

Water hazard class 1 (Self-assessment): slightly hazardous for water

(Contd. on page 8)

Date of issue: 03/06/2025 Revision date 03/06/2025

Trade name: LNP Encapsulation Buffer Tablet

(Contd. from page 7)

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

## 13 Disposal considerations

- · Waste treatment methods
- Recommendation:

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- · Uncleaned packagings:
- · Recommendation: Disposal must be made according to official regulations.

## **14 Transport information**

· UN-Number · DOT, IMDG, IATA	not regulated	
· UN proper shipping name · DOT, IMDG, IATA	not regulated	
· Transport hazard class(es)		
· DOT, ADN, IMDG, IATA · Class	not regulated	
· Packing group · DOT, IMDG, IATA	not regulated	
· Environmental hazards:	Not applicable.	
Transport in bulk according to Annex II of  MARPOL73/78 and the IBC Code  Not applicable.		
· Special precautions for user	Not applicable.	
· UN "Model Regulation":	not regulated	

### 15 Regulatory information

- · Safety, health and environmental regulations/legislation specific for the substance or mixture No further relevant information available.
- · Sara
- · Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act):

All components have the value ACTIVE.

· Hazardous Air Pollutants

None of the ingredients is listed.

(Contd. on page 9)

Date of issue: 03/06/2025 Revision date 03/06/2025

Trade name: LNP Encapsulation Buffer Tablet

(Contd. from page 8)

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

Carcinogenic categories

EPA (Environmental Protection Agency)

None of the ingredients is listed.

TLV (Threshold Limit Value)

None of the ingredients is listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

### 16 Other information

All chemicals may pose unknown hazards and should be used with caution. This SDS applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. Cayman Chemical Company assumes no responsibility for incidental or consequential damages, including lost profits, arising from the use of these data. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Cayman Chemical Company assumes no responsibility for the completeness or accuracy of the information contained herein.

- · Department issuing SDS: Environment protection department.
- · Contact:
- · Date of previous version 10/02/2024
- · Date of preparation 03/06/2025
- · Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Skin irritation 2: Skin corrosion/irritation – Category 2

Eye irritation 2A: Serious eye damage/eye irritation - Category 2A

Specific target organ toxicity (single exposure) 3: Specific target organ toxicity (single exposure) – Category 3

(Contd. on page 10)

Date of issue: 03/06/2025 Revision date 03/06/2025

Trade name: LNP Encapsulation Buffer Tablet

(Contd. from page 9)
Specific target organ toxicity (repeated exposure) 2: Specific target organ toxicity (repeated exposure) – Category 2

\* Data compared to the previous version altered.