

VD2020018 LP#-LNA1

Issuing Date 29-Nov-2017

Revision Date 18-May-2020

Revision A

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name LP#-LNA1, LIBRARY NORMALIZATION ADDITIVES 1

Other means of identification

Product Codes(s) 15025391

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use reagent

Details of the supplier of the safety data sheet

Manufacturer Address

Illumina, Inc.
5200 Illumina Way
San Diego, CA 92122 USA

www.illumina.com

Company Phone Number

1-858-809-ILMN
1-858-202-4566

E-mail address

SDS@illumina.com

Emergency telephone number

24 Hour Emergency Phone Number 1-760-476-3962

2. HAZARDS IDENTIFICATION

GHS Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Carcinogenicity	Category 2
Reproductive toxicity	Category 1B
Specific target organ toxicity (repeated exposure)	Category 2

Label elements

Emergency Overview

Signal word

Danger

Hazard statements

Suspected of causing cancer
May damage fertility or the unborn child
May cause damage to organs through prolonged or repeated exposure



Appearance Colorless liquid

Physical state Liquid

Odor Odor
Contains 2-Mercaptoethanol

Precautionary Statements – Prevention

Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Do not breathe dust/fume/gas/mist/vapors/spray.
 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary Statements – Response

IF exposed or concerned: Get medical advice/attention.

Precautionary Statements – Storage

Store locked up.

Precautionary Statements – Disposal

Dispose of contents/container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC)

Not applicable.

Other Information

Unknown acute toxicity 10.8 % of the mixture consists of ingredient(s) of unknown toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Chemical Name	CAS No.	Weight-%	Trade Secret
Formamide	75-12-7	5 - 10	*
2-Mercaptoethanol	60-24-2	< 0.1	*

* The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

General Advice	Treat symptomatically. Use first aid treatment according to the nature of the injury. Remove and isolate contaminated clothing and shoes.
Eye Contact	In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
Skin Contact	Wash skin with soap and water. Get medical attention if irritation develops and persists.
Inhalation	If symptomatic, move to fresh air. Get medical attention if symptoms persist. Move victim to fresh air.
Ingestion	Get medical advice/attention.
Self-protection of the first aider	Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Most important symptoms and effects, both acute and delayed

Symptoms	May damage fertility or the unborn child. Persons with impaired reproductive function may be more susceptible to the effects of this material. May cause cancer. May cause damage to organs through prolonged or repeated exposure.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	Persons with impaired reproductive function may be more susceptible to the effects of this material.
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5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Dry chemical, CO2, water spray or regular foam, Water spray, fog or regular foam, Move containers from fire area if you can do it without risk, Dike fire-control water for later disposal.

Unsuitable extinguishing media

Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

None known.

Hazardous combustion products

Carbon oxides. Ammonia. Nitrogen oxides (NOx). Hydrogen cyanide.

Explosion data

Sensitivity to Mechanical Impact None

Sensitivity to Static Discharge None

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Do not touch or walk through spilled material. Stop leak if you can do it without risk. Avoid breathing dust/fume/gas/mist/vapors/spray.

For emergency responders Use personal protection recommended in Section 8. Keep unnecessary personnel away.

Environmental precautions

Environmental precautions Prevent entry into waterways, sewers, basements or confined areas. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so. Prevent runoff from entering drains, sewers, or streams.

Methods for cleaning up Use personal protective equipment as required. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13). Large spill. Prevent runoff from entering drains, sewers, or streams. Dike far ahead of liquid spill for later disposal.

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

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Use personal protective equipment as required. Handle in accordance with good industrial hygiene and safety practice. Do not breathe vapor.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed. Keep/store only in original container. Store away from incompatible materials.

Incompatible materials Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Formamide 75-12-7	TWA: 10 ppm Skin	(vacated) TWA: 20 ppm (vacated) TWA: 30 mg/m ³ (vacated) STEL: 30 ppm (vacated) STEL: 45 mg/m ³	TWA: 10 ppm TWA: 15 mg/m ³

NIOSH IDLH Immediately Dangerous to Life or Health

Other Information

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering Controls

Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eyeface protection

Wear safety glasses with side shields (or goggles).

Skin and body protection

Wear chemical-resistant gloves, footwear and protective clothing appropriate for risk of exposure. Contact glove manufacturer for specific information.

Respiratory protection

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations

When using do not eat, drink or smoke. Wash hands thoroughly after handling. Handle in accordance with good industrial hygiene and safety practice. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Colorless liquid
Odor	Odor: Contains 2-Mercaptoethanol
Color	Colorless

<u>Property</u>	<u>Values</u>	<u>Remarks • Methods</u>
pH	No data available	
Melting point / freezing point	No data available	
Boiling point / boiling range		
Flash point		
Evaporation rate	No data available	
Flammability (solid, gas)	No data available	
Flammability Limit in Air		
Upper flammability or explosive limits:	No data available	
Lower flammability or explosive limits:	No data available	
Vapor pressure	No data available	
Vapor density	No data available	
Specific gravity	No data available	
Water solubility	No data available	
Solubility in other solvents	No data available	
Partition coefficient	No data available	
Autoignition temperature	No data available	
Decomposition temperature	No data available	
Kinematic viscosity	No data available	
Dynamic viscosity	No data available	
Explosive properties	No unusual fire or explosion hazards noted.	

Oxidizing properties No data available

Other Information

Softening point No data available
Molecular weight No data available
VOC content (%) No data available
Liquid density No data available
Bulk density No data available

10. STABILITY AND REACTIVITY

Reactivity

Chemical stability

Stable under normal conditions. Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous polymerization

Hazardous polymerization does not occur.

Conditions to avoid

None known.

Incompatible materials

Strong oxidizing agents.

Hazardous decomposition products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation Under normal conditions of intended use, this material is not expected to be an inhalation hazard.

Eye Contact Direct contact with eyes may cause temporary irritation.

Skin Contact Prolonged contact may cause redness and irritation.

Ingestion No harmful effects expected in amounts likely to be ingested by accident.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Formamide 75-12-7	= 5577 mg/kg (Rat) > 5000 mg/kg (Rat)	-	> 3900 ppm (Rat) 6 h

Information on toxicological effects

Symptoms Suspected of causing cancer. May damage fertility or the unborn child.

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

Skin corrosion/irritation Not classified.
Serious eye damage/eye irritation Not classified.
Sensitization Not classified.
Germ cell mutagenicity Not classified.
Carcinogenicity Suspected of causing cancer.
Reproductive toxicity May damage fertility or the unborn child.
STOT – single exposure Not classified.
STOT – repeated exposure May cause damage to organs through prolonged or repeated exposure.

Chronic toxicity	Contains a known or suspected reproductive toxin. May cause adverse effects on the bone marrow and blood-forming system.
Target organ effects	Central nervous system, Eyes, Reproductive system, Respiratory system, Skin, Blood.
Aspiration hazard	Not classified.
Other adverse effects	No information available.

Numerical measures of toxicity – Product Information

Unknown acute toxicity 10.8 % of the mixture consists of ingredient(s) of unknown toxicity.

12. ECOLOGICAL INFORMATION**Ecotoxicity**

1.7 % of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Formamide 75-12-7	500 mg/L: EC50 72 h Desmodesmus subspicatus 500 mg/L: EC50 96 h Desmodesmus subspicatus	4600 - 9300 mg/L: LC50 96 h Leuciscus idus static 9135 mg/L: LC50 96 h Brachydanio rerio static	500 mg/L: EC50 48 h Daphnia magna
Sodium chloride 7647-14-5	-	4747 - 7824 mg/L: LC50 96 h Oncorhynchus mykiss flow-through 5560 - 6080 mg/L: LC50 96 h Lepomis macrochirus flow-through 6020 - 7070 mg/L: LC50 96 h Pimephales promelas static 6420 - 6700 mg/L: LC50 96 h Pimephales promelas static 12946 mg/L: LC50 96 h Lepomis macrochirus static 7050 mg/L: LC50 96 h Pimephales promelas semi-static	340.7 - 469.2 mg/L: EC50 48 h Daphnia magna Static 1000 mg/L: EC50 48 h Daphnia magna
2-Mercaptoethanol 60-24-2	12 mg/L: EC50 72 h Desmodesmus subspicatus	46 - 100 mg/L: LC50 96 h Leuciscus idus static	1.52 mg/L: EC50 48 h Daphnia magna

Persistence and degradability

Readily biodegradable.

Bioaccumulation

Chemical Name	Partition coefficient
Formamide 75-12-7	-0.82
2-Mercaptoethanol 60-24-2	-0.056

Mobility

No data available.

Other adverse effects

No data available.

13. DISPOSAL CONSIDERATIONS**Waste treatment methods****Disposal of wastes**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging

Do not reuse container. Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

DOT	Not regulated
TDG	Not regulated
MEX	Not regulated
ICAO (air)	Not regulated
IATA	Not regulated
IMDF	Not regulated
RID	Not regulated
ADR	Not regulated
ADN	Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Does not comply
ENCS	Does not comply
IECSC	Complies
KECL	Does not comply
PICCS	Complies
AICS	Complies
INSQ	This product complies with INSQ

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 and Evaluated Chemical Substances

PICCS—Philippines Inventory of Chemicals and Chemical Substances

AICS—Australian Inventory of Chemical Substances

INSQ—Mexican National Inventory of Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute health hazard	No
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Formamide 75-12-7	X	X	X
Sodium phosphate dibasic 7558-79-4	X	X	X
2-Mercaptoethanol 60-24-2	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

NFPA	Health Hazards 2	Flammability 0	Instability 0	Physical and Chemical Properties -
HMIS	Health Hazards 2	Flammability 0	Physical Hazards 0	Personal Protection X

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End of Safety Data Sheet