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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING**Product identifier****Product Name** MS#-LMX1, LINEARIZATION MIX READ 1**Other means of identification****Product Code(s)** 15023305**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 not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements**Emergency Overview****Signal word**

None

Hazard statements

Not Hazardous

The product contains no substances which at their given concentration, are considered to be hazardous to health

Appearance colorless liquid**Physical state** Liquid**Odor** Odorless**Precautionary Statements - Prevention**

Handle in accordance with good industrial hygiene and safety practice

Precautionary Statements - Storage

Store away from incompatible materials

Precautionary Statements - Disposal

Dispose of in accordance with federal, state and local regulations

Hazards not otherwise classified (HNOC)

Not applicable

Other Information

Unknown acute toxicity 10.3 % of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

The product contains no substances which at their given concentration, are considered to be hazardous to health.

Chemical name	CAS No	Weight-%	Trade Secret
Sucrose	57-50-1	5 - 10	*

4. FIRST AID MEASURES**Description of first aid measures****General advice**

Use first aid treatment according to the nature of the injury.

Eye contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

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.

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**

No information available.

Indication of any immediate medical attention and special treatment needed**Note to physicians**

Treat symptomatically.

5. FIRE-FIGHTING MEASURES**Suitable extinguishing media**

Water, Water spray (fog), Foam, Dry chemical, Carbon dioxide (CO2)

Unsuitable extinguishing media

None known.

Specific hazards arising from the chemical

None known.

Hazardous combustion products

No information available.

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 Use personal protective equipment as required.

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

Environmental precautions

Environmental precautions 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. Dike far ahead of liquid spill for later disposal.

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.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. 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
Sucrose 57-50-1	-	-	TWA 10 mg/m ³ (total) TWA 5 mg/m ³ (resp)
Glycerol 56-81-5	-	TWA: 15 mg/m ³ mist, total particulate TWA: 5 mg/m ³ mist, respirable fraction (vacated) TWA: 10 mg/m ³ mist, total particulate (vacated) TWA: 5 mg/m ³ mist, respirable fraction	-

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

Eye/face 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 Handle in accordance with good industrial hygiene and safety practice. Wash after handling this material and before eating, drinking and/or smoking. 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 Odorless
Color colorless
Odor threshold No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</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	
<u>Other information</u>		
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	Low hazard for usual industrial or commercial handling by trained personnel
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
Sucrose 57-50-1	= 29700 mg/kg (Rat)	-	-

Information on toxicological effects

Symptoms None known.

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.
Skin sensitization	No information available.
Respiratory sensitization	Not classified
Germ cell mutagenicity	Not classified.
Carcinogenicity	This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP
Reproductive toxicity	Not classified.
STOT - single exposure	Not classified.
STOT - repeated exposure	Not classified.
Aspiration hazard	Not classified.
Other adverse effects	No information available.

Numerical measures of toxicity - Product Information

Unknown acute toxicity 10.3 % of the mixture consists of ingredient(s) of unknown toxicity

12. ECOLOGICAL INFORMATION

Ecotoxicity

0.4 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical name	Algae/aquatic plants	Fish	Crustacea
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 -	340.7 - 469.2 mg/L: EC50 48 h Daphnia magna Static 1000 mg/L: EC50 48 h Daphnia magna

		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	
Glycerol 56-81-5	-	51 - 57 mL/L: LC50 96 h Oncorhynchus mykiss static	500 mg/L: EC50 24 h Daphnia magna
Potassium chloride 7447-40-7	2500 mg/L: EC50 72 h Desmodemus subspicatus	750 - 1020 mg/L: LC50 96 h Pimephales promelas static 1060 mg/L: LC50 96 h Lepomis macrochirus static	825 mg/L: EC50 48 h Daphnia magna 83 mg/L: EC50 48 h Daphnia magna Static

Persistence and degradability
Not a PBT or vPvB substance or mixture.

Bioaccumulation
No data available

Mobility
No data available.

Other adverse effects
No data available

- Ozone**
Not classified
- Ozone depletion potential (ODP)**
No information 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
- IMDG** Not regulated

RID Not regulated
ADR Not regulated
ADN Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA Does not comply
DSL/NDSL Does not comply
EINECS/ELINCS Does not comply
ENCS Does not comply
IECSC Does not comply
KECL Does not comply
PICCS Does not comply
AICS Does not comply
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	No
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

This product does not contain any substances regulated by state right-to-know regulations

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

<u>NFPA</u>	Health hazards 0	Flammability 0	Instability 0	Physical and Chemical Properties -
<u>HMIS</u>	Health hazards 0	Flammability 0	Physical hazards 0	Personal protection X

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End of Safety Data Sheet