SAFETY DATA SHEET

VD2020038 MS#-AMS2

Issuing Date 12-Jun-2018 **Revision Date** 18-May-2020 **Revision** A

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

Product identifier

Product Name MS#-AMS2, AMPLIFICATION MIX

Other means of identification

Product Codes(s) 15033519

Synomyms None

Recommended use of the chemical and restrictions on use

Recommended Use Use as laboratory reagent
and/or
Scientific research and development
and/or
For research use only

Uses advised against For professional use only
Use only as directed

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 25.6 % 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.

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 Mild skin irritation.

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

Carbon dioxide (CO2). Hydrocarbons.

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
Glycerol 56-81-5	-	TWA: 15 mg/m³ mist, total particulate TWA: 5 mg/m³ mist, respirable fraction (vacated) TWA: 10 mg/m³ mist, total particulate (vacated) TWA: 5 mg/m³ mist, respirable fraction	-

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

Property	**Values**	**Remarks • Methods**
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	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.

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.
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	25.6 % of the mixture consists of ingredient(s) of unknown toxicity.

12. ECOLOGICAL INFORMATION

Ecotoxicity

0.1 % of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Dimethyl sulfoxide 67-68-5	12350 - 25500 mg/L: EC50 96 h Skeletonema costatum	33 - 37 g/L: LC50 96 h Oncorhynchus mykiss static 34000 mg/L: LC50 96 h Pimephales promelas 41.7 g/L: LC50 96 h Cyprinus carpio 40 g/L: LC50 96 h Lepomis macrochirus static	7000 mg/L: EC50 24 h Daphnia species
Glycerol 56-81-5	-	51 - 57 mL/L: LC50 96 h Oncorhynchus mykiss static	500 mg/L: EC50 24 h Daphnia magna
Ammonium sulfate 7783-20-2	-	123 - 128 mg/L: LC50 96 h Poecilia reticulata semi-static 32.2 - 41.9 mg/L: LC50 96 h Oncorhynchus mykiss flow-through 460 - 1000 mg/L: LC50 96 h Leuciscus idus static 5.2 - 8.2 mg/L: LC50 96 h Oncorhynchus mykiss static 126 mg/L: LC50 96 h Poecilia reticulata 18 mg/L: LC50 96 h Cyprinus carpio 250 mg/L: LC50 96 h Brachydanio rerio 420 mg/L: LC50 96 h Brachydanio rerio semi-static 480 mg/L: LC50 96 h Brachydanio rerio flow-through 100 mg/L: LC50 96 h Pimephales promelas	14 mg/L: LC50 48 h Daphnia magna 423 mg/L: EC50 24 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

Persistence and degradability

Polyethylene glycol tert-octylphenyl ether is expected to degrade to tert-octylphenol, which may persist in the environment. No other ingredients are considered to be persistent.

Bioaccumulation

No data available.

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	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

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Dimethyl sulfoxide 67-68-5	X	-	-

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

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

Prepared By Illumina Inc.
Issuing Date 12-Jun-2018
Revision Date 18-May-2020
Revision Note Not applicable

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End of Safety Data Sheet