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Revision Number 1

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

**Product identifier**

**Product Name** TG#-AMS,AMPLIFICATION MIX

**Other means of identification**

**Product Code(s)** 15070128

**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

**Company Phone Number**

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

**E-mail address**

SDS@illumina.com

www.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).

**Label elements**

**Emergency Overview**

**Signal word**

None

**Hazard statements**

Not Hazardous

**Appearance** colorless liquid

**Physical state** Liquid

**Odor** Odorless

**Precautionary Statements - Prevention**

Handle in accordance with good industrial hygiene and safety practice

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**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.

Chemical name	CAS No.	Weight-%	Trade Secret
Dimethyl sulfoxide	67-68-5	1 - 5	*
Glycerol	56-81-5	0.1 - 1	*

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

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

<b>General advice</b>	Use first aid treatment according to the nature of the injury.
<b>Eye contact</b>	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.
<b>Skin Contact</b>	Wash skin with soap and water. Get medical attention if irritation develops and persists.
<b>Inhalation</b>	If symptomatic, move to fresh air. Get medical attention if symptoms persist.
<b>Ingestion</b>	Get medical advice/attention.
<b>Self-protection of the first aider</b>	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**

<b>Symptoms</b>	No information available.
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**Indication of any immediate medical attention and special treatment needed**

<b>Note to physicians</b>	Treat symptomatically.
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**5. FIRE-FIGHTING MEASURES**

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**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

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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/m <sup>3</sup> mist, total particulate TWA: 5 mg/m <sup>3</sup> mist, respirable fraction (vacated) TWA: 10 mg/m <sup>3</sup> mist, total particulate (vacated) TWA: 5 mg/m <sup>3</sup> 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

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>pH</b>	No data available	
<b>Melting point / freezing point</b>	No data available	

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**Boiling point / boiling range****Flash point****Evaporation rate** No data available**Flammability (solid, gas)** No data available**Flammability Limit in Air****Upper flammability limit:** No data available**Lower flammability limit:** 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**

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<b>Product Information</b>	Low hazard for usual industrial or commercial handling by trained personnel
<b>Inhalation</b>	Under normal conditions of intended use, this material is not expected to be an inhalation hazard.
<b>Eye contact</b>	Direct contact with eyes may cause temporary irritation.
<b>Skin Contact</b>	Prolonged contact may cause redness and irritation.
<b>Ingestion</b>	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**

<b>Skin corrosion/irritation</b>	Not classified.
<b>Serious eye damage/eye irritation</b>	Not classified.
<b>Sensitization</b>	Not classified.
<b>Germ cell mutagenicity</b>	Not classified.
<b>Carcinogenicity</b>	This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
<b>Reproductive toxicity</b>	Not classified.
<b>STOT - single exposure</b>	Not classified.
<b>STOT - repeated exposure</b>	Not classified.
<b>Aspiration hazard</b>	Not classified.
<b>Other adverse effects</b>	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**

25.5 % 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	14 mg/L: LC50 48 h Daphnia magna 423 mg/L: EC50 24 h Daphnia magna

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		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	
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**

Not a PBT or vPvB substance or mixture.

**Bioaccumulation**

Chemical name	Partition coefficient
Dimethyl sulfoxide 67-68-5	-2.03
Glycerol 56-81-5	-1.76

**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

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<b><u>MEX</u></b>	Not regulated
<b><u>ICAO (air)</u></b>	Not regulated
<b><u>IATA</u></b>	Not regulated
<b><u>IMDG</u></b>	Not regulated
<b><u>RID</u></b>	Not regulated
<b><u>ADR</u></b>	Not regulated
<b><u>ADN</u></b>	Not regulated

<b>15. REGULATORY INFORMATION</b>
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**International Inventories**

<b>TSCA</b>	Does not comply
<b>DSL/NDSL</b>	Does not comply
<b>EINECS/ELINCS</b>	Does not comply
<b>ENCS</b>	Does not comply
<b>IECSC</b>	Does not comply
<b>KECL</b>	Does not comply
<b>PICCS</b>	Does not comply
<b>AICS</b>	Does not comply

**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

**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**

<b>Acute health hazard</b>	No
<b>Chronic Health Hazard</b>	No
<b>Fire hazard</b>	No
<b>Sudden release of pressure hazard</b>	No
<b>Reactive Hazard</b>	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**

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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**

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

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Revision Note  
 Not applicable.

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**End of Safety Data Sheet**

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