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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING**Product identifier****Product Name** MS#-CMS,CLEAVE MIX,50-CYCLE**Other means of identification****Product Code(s)** 15033375**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 17.1 % 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** 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

Carbon oxides. Sodium oxides.

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 in a dry, cool 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
Ethanolamine 141-43-5	-	-	IDLH: 30 ppm TWA: 3 ppm TWA: 8 mg/m ³ STEL: 6 ppm STEL: 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

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>
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 No information available.
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 17.1 % of the mixture consists of ingredient(s) of unknown toxicity

12. ECOLOGICAL INFORMATION

Ecotoxicity

0.1 % 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 - 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
Ethanolamine 141-43-5	15 mg/L: EC50 72 h Desmodesmus subspicatus	114 - 196 mg/L: LC50 96 h Oncorhynchus mykiss static 300 - 1000 mg/L: LC50 96 h Lepomis macrochirus static 227 mg/L: LC50 96 h Pimephales promelas flow-through 3684 mg/L: LC50 96 h Brachydanio rerio static 200 mg/L: LC50 96 h Oncorhynchus mykiss flow-through	65 mg/L: EC50 48 h Daphnia magna

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

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	Complies

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
Ethanolamine 141-43-5	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

<u>NFPA</u>	Health hazards 0	Flammability 1	Instability 0	Physical and Chemical Properties -
<u>HMIS</u>	Health hazards 0	Flammability 1	Physical hazards 0	Personal protection X

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End of Safety Data Sheet