

VD2020021 FS#-PCR1

Issuing Date 19-Jan-2018

Revision Date 18-May-2020

Revision A

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

Product identifier

Product Name FS#-PCR1, ForenSeq™ PCR1 Reaction Mix

Other means of identification

Product Codes(s) 15054250

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

Causes mild skin irritation.

Unknown acute toxicity 33.6 % 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 |
|--------------------|-----------|----------|--------------|
| Glycerol | 56-81-5 | 10 - 30 | * |
| Dimethyl sulfoxide | 67-68-5 | 3 - 7 | * |
| Potassium chloride | 7447-40-7 | 1 - 5 | * |

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

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** Avoid discharge into drains, water courses, or onto the ground.

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/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 • 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 | 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 |
|---------------------------------|--|----------------------|-------------------------------------|
| Glycerol 56-81-5 | = 12600 mg/kg (Rat) | > 10 g/kg (Rabbit) | > 570 mg/m ³ (Rat) 1 h |
| Dimethyl sulfoxide 67-68-5 | = 14500 mg/kg (Rat) = 28300 mg/kg (Rat) | = 40 g/kg (Rat) | > 5.33 mg/L (Rat) 4 h |
| Potassium chloride 7447-40-7 | = 2600 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 | Not classified. |
| 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. |
| Chronic toxicity | May cause adverse effects on the bone marrow and blood-forming system. |
| Target organ effects | Eyes, Kidneys, Respiratory system, Skin, Blood |
| Aspiration hazard | Not classified. |
| Other adverse effects | No information available. |

Numerical measures of toxicity – Product Information

Unknown acute toxicity 33.6 % 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.

Persistence and degradability

Not a PBT or vPvB substance or mixture.

Bioaccumulation

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

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 |
| 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 |
|-------------------------------|-------------------|----------------------|---------------------|
| Glycerol 56-81-5 | X | X | X |
| 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 | 19-Jan-2018 |
| Revision Date | 18-May-2020 |
| Revision Note | Not applicable |

Disclaimer

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End of Safety Data Sheet