

Issuing Date 05-Jun-2018

Revision date 22-Jan-2020

Revision Number 2.4

**1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING****Product identifier****Product Name** NX#-TD,TAGMENT DNA BUFFER**Other means of identification****Product Code(s)** 15027866**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 considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Serious eye damage/eye irritation	Category 2A
Carcinogenicity	Category 1B
Reproductive toxicity	Category 1B

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

Danger

**Hazard statements**Causes serious eye irritation  
May cause cancer  
May damage fertility or the unborn child

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

Obtain special instructions before use  
 Do not handle until all safety precautions have been read and understood  
 Use personal protective equipment as required  
 Wash face, hands and any exposed skin thoroughly after handling

**Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention

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

**Precautionary Statements - Storage**

Store locked up

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

Not applicable

**Other Information**

Unknown acute toxicity                      20 % 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
N,N-Dimethylformamide	68-12-2	10 - 30	*

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

### 4. FIRST AID MEASURES

**Description of first aid measures**

**General advice**                                      Treat symptomatically. If symptoms persist, call a physician.

<b>Eye contact</b>	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Get medical attention if irritation develops and persists. Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician. Keep eye wide open while rinsing. If symptoms persist, call a physician.
<b>Skin Contact</b>	Get medical attention if irritation develops and persists. Wash skin with soap and water. Immediate medical attention is not required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If skin irritation persists, call a physician.
<b>Inhalation</b>	If symptomatic, move to fresh air. Get medical attention if symptoms persist. Immediate medical attention is not required. Move to fresh air in case of accidental inhalation of vapors. If symptoms persist, call a physician.
<b>Ingestion</b>	Get medical advice/attention. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician. Do NOT induce vomiting.
<b>Self-protection of the first aider</b>	Use personal protective equipment as required. 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** May damage fertility or the unborn child. Causes eye irritation. May cause cancer.

**Indication of any immediate medical attention and special treatment needed**

**Note to physicians** Persons with impaired reproductive function may be more susceptible to the effects of this material. 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. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.

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

**Environmental precautions**

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses, or onto the ground. Do not flush into surface water or sanitary sewer system. Prevent product from entering drains.

**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** Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Large spill. Flush area with water. Prevent runoff from entering drains, sewers, or streams. Dike far ahead of liquid spill for later disposal. Soak up with inert absorbent material. Dam up. Pick up and transfer to properly labeled containers.

**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. Do not breathe vapor. Use with local exhaust ventilation. Do not breathe dust/fume/gas/mist/vapors/spray.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions** Keep container tightly closed. Keep/store only in original container. Store away from incompatible materials. Store at -15° C to -25° C (5° F to -13° F). Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.

**Incompatible materials** Strong oxidizing agents.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control parameters**

**Exposure Guidelines**

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
N,N-Dimethylformamide 68-12-2	TWA: 10 ppm Skin	TWA: 10 ppm TWA: 30 mg/m <sup>3</sup> (vacated) TWA: 10 ppm (vacated) TWA: 30 mg/m <sup>3</sup> (vacated) S* S*	IDLH: 500 ppm TWA: 10 ppm TWA: 30 mg/m <sup>3</sup>

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). Tight sealing safety goggles. Face protection shield.

**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** When using do not eat, drink or smoke. Wash hands thoroughly after handling. Regular cleaning of equipment, work area and clothing is recommended. Handle in accordance with good industrial hygiene and safety practice.

**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	Not applicable
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**

Carbon oxides. Nitrogen oxides (NOx).

## 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure**

**Product Information** Reproductive toxicant May cause cancer

**Inhalation** Under normal conditions of intended use, this material is not expected to be an inhalation hazard.

**Eye contact** Causes serious eye 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
N,N-Dimethylformamide 68-12-2	= 2000 mg/kg ( Rat ) = 2800 mg/kg ( Rat )	= 1100 mg/kg ( Rat ) > 3.2 g/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** Causes serious eye irritation.  
**Skin sensitization** Not classified.  
**Respiratory sensitization** Not classified.  
**Germ cell mutagenicity** Not classified.  
**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen

Chemical name	ACGIH	IARC	NTP	OSHA
N,N-Dimethylformamide 68-12-2	-	2A	-	-

IARC (International Agency for Research on Cancer)  
 Group 2A - Probably Carcinogenic to Humans

**Reproductive toxicity** May damage fertility or the unborn child.  
**STOT - single exposure** Not classified.  
**STOT - repeated exposure** Not classified.  
**Chronic toxicity** Avoid repeated exposure. May cause adverse effects on the bone marrow and blood-forming system. May cause adverse liver effects.  
**Target organ effects** Central Vascular System (CVS), Eyes, kidney, liver, Respiratory system, Skin, blood.  
**Aspiration hazard** Not classified.  
**Other adverse effects** No information available.

Numerical measures of toxicity - Product Information

**Unknown acute toxicity** 20 % of the mixture consists of ingredient(s) of unknown toxicity

**12. ECOLOGICAL INFORMATION**Ecotoxicity

0 % of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical name	Algae/aquatic plants	Fish	Crustacea
N,N-Dimethylformamide 68-12-2	96h-EC50(Desmodesmus subspicatus):500 mg/L	96h-LC50(Oncorhynchus mykiss):9800 mg/L, 96h-LC50(Pimephales promelas):10410 mg/L, 96h-LC50(Lepomis macrochirus):6300 mg/L	48h-EC50(Daphnia magna):7500 mg/L, 48h-EC50(Daphnia magna):6800 - 13900 mg/L, 48h-EC50(Daphnia magna):8485 mg/L

Persistence and degradability

Not a PBT or vPvB substance or mixture.

Bioaccumulation

Chemical name	Partition coefficient
N,N-Dimethylformamide 68-12-2	-1.028

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**

<b>TSCA</b>	Does not comply
<b>DSL/NDSL</b>	Complies
<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>	Complies
<b>AICS</b>	Does not comply
<b>INSQ</b>	This product complies with INSQ

**Legend:**



**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDL** - 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 contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	SARA 313 - Threshold Values %
N,N-Dimethylformamide - 68-12-2	1.0

**SARA 311/312 Hazard Categories**

<b>Acute health hazard</b>	Yes
<b>Chronic Health Hazard</b>	Yes
<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**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
N,N-Dimethylformamide 68-12-2	100 lb	-	RQ 100 lb final RQ RQ 45.4 kg final RQ

**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
Water 7732-18-5	-	-	X
N,N-Dimethylformamide 68-12-2	X	X	X

**U.S. EPA Label Information**

**EPA Pesticide Registration Number** Not applicable

**16. OTHER INFORMATION**

---

<b>NFPA</b>	<b>Health hazards</b> 2	<b>Flammability</b> 0	<b>Instability</b> 0	<b>Physical and Chemical Properties</b> -
<b>HMIS</b>	<b>Health hazards</b> 2*	<b>Flammability</b> 0	<b>Physical hazards</b> 0	<b>Personal protection</b> X

Chronic Hazard Star Legend      \* = *Chronic Health Hazard*

**Prepared By** Illumina Inc.  
**Issuing Date** 05-Jun-2018  
**Revision date** 22-Jan-2020  
**Revision Note** (M)SDS sections updated, 2.

**Disclaimer**

Although reasonable care has been taken in the preparation of this document, Illumina makes no warranties or representations of any kind as to the accuracy or completeness of the information contained herein, and Illumina assumes no responsibility regarding the suitability of this information or the product for the user's intended purposes or for the consequences of use of this information or the use of the product. The user of this (M)SDS and product should make a determination as to the suitability of the information and the product for their particular purpose(s). To the extent provided by applicable law, Illumina shall not be held liable for any damage or expenses of any kind resulting from handling, use, storage, or disposal of the product.

**End of Safety Data Sheet**