



CHEMICAL PRODUCT SAFETY DATA SHEET

Prepared in accordance with GB/T 16483 and GB/T 17519.

Product name: 4X Fragmentation Buffer

Issue date: 02-August-2022

Revision date: -

Version #: 01

SECTION 1 Chemical product and company identification

Chinese name of chemical	4X 裂解缓冲液
English name of chemical	4X Fragmentation Buffer
Company Name	UltraVision Technology Limited
Address	Room 1210, Unit 3, Long De Zi Jin mansion, No. 186 Li Tang Road, Changping district, Beijing ,PR China
Telephone	17717469190
Website	dovetailgenomics.com
Emergency phone number	+86 4001 2001 74
Access code	334943

Recommended use and Limitations on use

Recommended use	Molecular Biology Kit.
Limitations on use	Use in accordance with manufacturer's recommendations.
Issue date	02-August-2022
Revision date	-
Supersedes date	-

SECTION 2 Hazards identification

Emergency overview	Harmful if inhaled. May be harmful in contact with skin. May be harmful if swallowed. May cause cancer. Causes serious eye irritation. May cause reproductive effects. Prolonged exposure may cause chronic effects.
--------------------	--

GHS hazard categories

Physical hazards	Not classified.
Health hazards	Acute toxicity, oral Category 5 Acute toxicity, dermal Category 5 Acute toxicity, inhalation Category 4 Serious eye damage/eye irritation Category 2 Carcinogenicity Category 1B Reproductive toxicity Category 1B
Environmental hazards	Not classified.

Label elements

Pictograms



Signal word	Danger
-------------	--------

Hazard statement

H303	May be harmful if swallowed.
H313	May be harmful in contact with skin.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H350	May cause cancer.
H360	May damage fertility or the unborn child.

Precautionary statement

Prevention	
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing vapors.
P264	Wash thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P308 + P313 IF exposed or concerned: Get medical advice/attention.
 P337 + P313 If eye irritation persists: Get medical advice/attention.

Safety storage

P405 Store locked up.

Disposal

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Physical and chemical hazards The product is stable and non-reactive under normal conditions of use, storage and transport. No unusual fire or explosion hazards noted.

Health hazards Harmful if inhaled. May be harmful in contact with skin. May be harmful if swallowed. Causes serious eye irritation.

Environmental hazards The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Supplemental information None.

SECTION 3 Composition/information on ingredients

Substance/mixture Mixture

Chemical name	Concentration (%)	CAS Number
N,N-二甲基甲酰胺 N,N-Dimethylformamide	64	68-12-2

Composition comments All concentrations are in percent by weight unless otherwise indicated.
 Components not listed are either non-hazardous or are below reportable limits.

SECTION 4 First aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Call a poison center or doctor/physician if you feel unwell.

Skin contact Wash off with soap and water. Get medical advice/attention if you feel unwell. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.

Most important symptoms and health effects Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Personal protection for first-aid responders IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

Notes to physician Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

SECTION 5 Fire-fighting measures

Extinguishing media Alcohol resistant foam. Powder. Carbon dioxide (CO2).

Extinguishing media to avoid Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards During fire, gases hazardous to health may be formed.

Special fire fighting procedures Move containers from fire area if you can do so without risk.

Protection of fire-fighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

General fire hazards No unusual fire or explosion hazards noted.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of vapors and spray mists. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

For emergency responders Keep unnecessary personnel away. Ensure adequate ventilation. Avoid inhalation of vapors and spray mists. Local authorities should be advised if significant spillages cannot be contained. Use personal protection recommended in Section 8 of the SDS.

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

Clean-up methods and materials and containment measures Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.

Prevention of secondary hazards Avoid release to the environment.

SECTION 7 Handling and storage

Handling Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not taste or swallow. Avoid inhalation of vapors and spray mists. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. When using, do not eat, drink or smoke. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.

Storage Store locked up. Store in tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

SECTION 8 Exposure controls/personal protection

Exposure limits

China

Components

N,N-Dimethylformamide (CAS 68-12-2)

Type

PC-TWA

Value

20 mg/m³

Biological limit values

China. Biological limit values for occupational exposure (WS/T 110 to 115, 239 to 243, and 264 to 267)

Components	Value	Determinant	Specimen	Sampling Time
N,N-Dimethylformamide (CAS 68-12-2)	135 nmol/g	N- methylcarbonyl hemoglobin adduct	Hemoglobin in blood	*

* - For sampling details, please see the source document.

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
N,N-Dimethylformamide (CAS 68-12-2)	40 mg/l	N-Acetyl-S-(N-methylcarbonyl) cysteine		*
	30 mg/l	Sum of N-Methylformamide and N-(Hydroxymethyl)-N-Methylformamide	Urine	*
	30 mg/l	N-Acetyl-S-(N-methylcarbonyl) cysteine	Urine	*
	15 mg/l	N-Methylformamide		*

* - For sampling details, please see the source document.

Exposure guidelines

China OELs. Occupational Exposure Limits for Hazardous Agents in the Workplace, Chemical Hazardous Agents (GBZ 2.1-2019): Skin designation

DIMETHYLFORMAMIDE (DMF) (CAS 68-12-2)

Can be absorbed through the skin.

Monitoring methods

Follow standard monitoring procedures.

Engineering measures

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.

Personal protective equipment**Respiratory protection**

Chemical respirator with organic vapor cartridge and full facepiece.

Hand protection

Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Eye protection

Wear approved chemical safety goggles. Wear face shield if there is risk of splashes.

Skin and body protection

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Hygiene measures

Observe any medical surveillance requirements. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

SECTION 9 Physical and chemical properties**Appearance****Physical state**

Liquid.

Form

Liquid.

Color

Not available.

Odor

Not available.

pH

Not available.

Melting point/freezing point

Not available.

Boiling point, initial boiling point, and boiling range

Not available.

Flash point

Not available.

Explosive limit - lower (%)

Not available.

Explosive limit - upper (%)

Not available.

Vapor pressure

Not available.

Vapor density

Not available.

Relative density

Not available.

Density

Not available.

Solubility(ies)**Solubility (water)**

Not available.

Partition coefficient (n-octanol/water)

Not available.

Auto-ignition temperature

Not available.

Decomposition temperature

Not available.

Flammability (solid, gas)

Not applicable.

Other data**Explosive properties**

Not explosive.

Oxidizing properties

Not oxidizing.

SECTION 10 Stability and reactivity**Reactivity**

The product is stable and non-reactive under normal conditions of use, storage and transport.

Stability

Material is stable under normal conditions.

Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

Conditions to avoid

Contact with incompatible materials.

Incompatible materials

Strong oxidizing agents.

Hazardous decomposition products No hazardous decomposition products are known.

SECTION 11 Toxicological information

Acute toxicity Harmful if inhaled. May be harmful in contact with skin. May be harmful if swallowed.

Components	Species	Test Results
N,N-Dimethylformamide (CAS 68-12-2)		
<u>Acute</u>		
Oral		
LD50	Rat	3040 mg/kg
Routes of exposure	Inhalation. Ingestion. Skin contact. Eye contact.	
Symptoms	Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.	
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.	
Serious eye damage/eye irritation	Causes serious eye irritation.	
Respiratory or skin sensitization		
Respiratory sensitization	Not a respiratory sensitizer.	
Skin sensitizer	This product is not expected to cause skin sensitization.	
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
Carcinogenicity	May cause cancer.	
China OELs for hazardous agents in the workplace: Carcinogen Category		
DIMETHYLFORMAMIDE (DMF) (CAS 68-12-2)	Probable human carcinogen	
IARC Monographs. Overall Evaluation of Carcinogenicity		
N,N-Dimethylformamide (CAS 68-12-2)	2A Probably carcinogenic to humans.	
Toxic to reproduction	May damage fertility or the unborn child.	
Specific target organ toxicity following single exposure	Not classified.	
Specific target organ toxicity following repeated exposure	Not classified.	
Aspiration hazard	Not an aspiration hazard.	
Chronic effects	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.	

SECTION 12 Ecological information

Ecotoxicological data		Species		Test Results
Components				
N,N-Dimethylformamide (CAS 68-12-2)				
Aquatic				
Acute				
Algae	EC50	Scenedesmus subspicatus	> 1000 mg/l, 96 Hours	
Crustacea	EC50	Daphnia magna	> 100 mg/l, 48 Hours	
Fish	LC50	Lepomis macrochirus	7100 mg/l, 96 Hours	
Chronic				
Crustacea	NOEC	Daphnia magna	1500 mg/l, 21 days	
Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.			
Persistence and degradability	No data is available on the degradability of any ingredients in the mixture.			
Bioaccumulation				
Bioaccumulative potential				
Octanol/water partition coefficient log Kow				
N,N-Dimethylformamide (CAS 68-12-2)		-1.01		
Mobility in soil	No data available for this product.			
Other hazardous effects	No data available.			

SECTION 13 Disposal considerations

Residual waste	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.
Local disposal regulations	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14 Transport information

CNDG

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

SECTION 15 Regulatory information

Law of the People's Republic of China on Prevention and Control of Occupational Diseases

Classification of occupational disease hazards

DIMETHYLFORMAMIDE (CAS 68-12-2)

Regulations on the Control over Safety of Dangerous Chemicals

Catalog of Hazardous Chemicals

N,N-Dimethylformamide (CAS 68-12-2)

Provision on the Environmental Administration of New Chemical Substances

China Inventory of Existing Chemical Substances

Country(s) or region	Inventory name	On inventory (yes/no)*
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

Other regulations This safety data sheet conforms to the following laws, regulations and standards:
Measures for the Safe Use of Chemicals in Workplaces
General Rules for Preparation of Precautionary Labels for Chemicals (GB15258-2009)
Regulations on Labor Protection in Workplaces Where Toxic Products Are Used
Packing Symbol of Dangerous Goods(GB190-2009)
Regulations on the Control over Safety of Dangerous Chemicals
Safety Data Sheet for Chemical Products - Content and Order of Sections (GB/T 16483-2008)
Guidance on the compilation of safety data sheet for chemical products (GB/T 17519-2013).
Packing - Pictorial Marking for Handling of Goods (GB/T191-2008)

International regulations

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Montreal Protocol

Not applicable.

Kyoto protocol

Not applicable.

Basel Convention

Not applicable.

SECTION 16 Other information**References**

EPA: AQUIRE database
GB6944-2012: Classification and Code of Dangerous Goods.
GB12268-2012: List of Dangerous Goods.
IARC Monographs. Overall Evaluation of Carcinogenicity
NLM: Hazardous Substances Data Base

Disclaimer

Dovetail Genomics, LLC cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.