

# Safety Data Sheet



Revision Date 2025-01-14

Revision Number 10

## 1. Identification

### Product identifier

**Product Name** Assay Buffer

### Other means of identification

**Product Code** S0457

**UN number or ID number** UN3082

**Synonyms** No information available

### Recommended use of the chemical and restrictions on use

**Identified uses** For research use only. Not for use in diagnostic procedures

**Restrictions on use** No information available

### Details of the supplier of the safety data sheet

#### Supplier

USA:

Takara Bio USA, Inc.

2560 Orchard Parkway

San Jose, CA 95131, USA

Phone: 800.662.2566/888.251.6618

Web: www.takarabio.com

### Emergency telephone number

**Emergency telephone** In case of emergency, call PERS (Professional Emergency Resource Services) 1-800-633-8253 (US) or 801-629-0667 (international).

## 2. Hazard(s) identification

### Product Classification Data

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Carcinogenicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 2

### Hazards not otherwise classified (HNOC)

Not applicable

### Label elements

**Danger**

**Hazard statements**

Causes skin irritation  
 Causes serious eye damage  
 May cause an allergic skin reaction  
 Suspected of causing cancer  
 May cause damage to organs through prolonged or repeated exposure

**Appearance** Clear, colorless**Physical state** Liquid**Odor** Characteristic**Precautionary Statements - Prevention**

Obtain special instructions before use  
 Do not handle until all safety precautions have been read and understood  
 Wear protective gloves/clothing and eye/face protection  
 Wash face, hands and any exposed skin thoroughly after handling  
 Contaminated work clothing must not be allowed out of the workplace  
 Do not breathe dust/fume/gas/mist/vapors/spray

**Precautionary Statements - Response**

Specific treatment (see supplemental first aid instructions on this label)  
 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  
 Immediately call a POISON CENTER or doctor  
 IF ON SKIN: Wash with plenty of water and soap  
 Take off contaminated clothing and wash it before reuse  
 If skin irritation or rash occurs: Get medical advice/attention

**Precautionary Statements - Storage**

Store locked up

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Other information**

May be harmful if swallowed. Harmful to aquatic life with long lasting effects. Harmful to aquatic life.

### 3. Composition/information on ingredients

**Substance**

Not applicable.

**Mixture**

Chemical name	CAS No.	Weight-%
DIETHANOL AMINE	111-42-2	20 - 30

### 4. First-aid measures

**Description of first aid measures**

<b>General advice</b>	Immediate medical attention is required. Show this safety data sheet to the doctor in attendance. IF exposed or concerned: Get medical advice/attention.
<b>Inhalation</b>	Remove to fresh air. Get medical attention immediately if symptoms occur.
<b>Eye contact</b>	Get immediate medical attention. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water for at least 15 minutes. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a physician.
<b>Ingestion</b>	Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.
<b>Self-protection of the first aider</b>	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).
<b><u>Most important symptoms and effects, both acute and delayed</u></b>	
<b>Symptoms</b>	Burning sensation. Itching. Rashes. Hives.
<b><u>Indication of any immediate medical attention and special treatment needed</u></b>	
<b>Note to physicians</b>	May cause sensitization in susceptible persons. Treat symptomatically.

## 5. Fire-fighting measures

<b>Suitable Extinguishing Media</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<b>Large Fire</b>	CAUTION: Use of water spray when fighting fire may be inefficient.
<b>Unsuitable extinguishing media</b>	Do not scatter spilled material with high pressure water streams.
<b>Specific hazards arising from the chemical</b>	Product is or contains a sensitizer. May cause sensitization by skin contact.
<b>Explosion Data</b>	
<b>Sensitivity to mechanical impact</b>	None.
<b>Sensitivity to static discharge</b>	None.
<b>Special protective equipment and precautions for fire-fighters</b>	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

## 6. Accidental release measures

### **Personal precautions, protective equipment and emergency procedures**

<b>Personal precautions</b>	Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
<b>Other information</b>	Refer to protective measures listed in Sections 7 and 8.

### **Methods and material for containment and cleaning up**

<b>Methods for containment</b>	Prevent further leakage or spillage if safe to do so.
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**Methods for cleaning up** Pick up and transfer to properly labeled containers.

## 7. Handling and storage

### Precautions for safe handling

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Take off contaminated clothing and wash before reuse.

### Conditions for safe storage, including any incompatibilities

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children.

## 8. Exposure controls/personal protection

### Control parameters

#### Exposure Limits

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
DIETHANOL AMINE 111-42-2	TWA: 1 mg/m <sup>3</sup> inhalable fraction and vapor Sk*	(vacated) TWA: 3 ppm (vacated) TWA: 15 mg/m <sup>3</sup>	TWA: 3 ppm TWA: 15 mg/m <sup>3</sup>

### Appropriate engineering controls

**Engineering controls** Showers  
Eyewash stations  
Ventilation systems.

### Individual protection measures, such as personal protective equipment

**Eye/face protection** Tight sealing safety goggles.

**Hand protection** Wear suitable gloves. Impervious gloves.

**Skin and body protection** Wear suitable protective clothing. Long sleeved clothing.

**Respiratory protection** No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

**General hygiene considerations** Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

**Physical state** Liquid

<b>Appearance</b>	Clear, colorless
<b>Color</b>	No information available
<b>Odor</b>	Characteristic
<b>Odor Threshold</b>	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>pH</b>	No data available	None known
<b>Melting point / freezing point</b>	No data available	None known
<b>Boiling point/boiling range (°C)</b>	No data available	None known
<b>Flash point</b>	No data available	Open cup
<b>Evaporation Rate</b>	No data available	None known
<b>Flammability (solid, gas)</b>	No data available	None known
<b>Flammability Limit in Air</b>		None known
<b>Upper flammability limit:</b>	No data available	
<b>Lower flammability limit:</b>	No data available	
<b>Vapor pressure</b>	No data available	None known
<b>Vapor density</b>	No data available	None known
<b>Relative density</b>	No data available	None known
<b>Water solubility</b>	No data available	None known
<b>Solubility in other solvents</b>	No data available	None known
<b>Partition coefficient</b>	No data available	None known
<b>Autoignition temperature</b>	No data available	None known
<b>Decomposition temperature</b>		None known
<b>Kinematic viscosity</b>	No data available	None known
<b>Dynamic Viscosity</b>	No data available	None known
<b><u>Other information</u></b>		
<b>Explosive properties</b>	No information available	
<b>Oxidizing properties</b>	No information available	
<b>Softening point</b>	No information available	
<b>Molecular weight</b>	No information available	
<b>VOC content</b>	No information available	
<b>Liquid Density</b>	No information available	
<b>Bulk Density</b>	No information available	

## 10. Stability and reactivity

<b>Reactivity</b>	No information available.
<b>Chemical stability</b>	Stable under normal conditions.
<b>Possibility of hazardous reactions</b>	None under normal processing.
<b>Conditions to Avoid</b>	None known based on information supplied.
<b>Incompatible materials</b>	Strong acids. Strong bases. Strong oxidizing agents.
<b>Hazardous decomposition products</b>	None known based on information supplied.

## 11. Toxicological information

### Information on likely routes of exposure

#### **Product Information**

<b>Inhalation</b>	Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.
<b>Eye contact</b>	Specific test data for the substance or mixture is not available. Causes serious eye damage.

May cause irreversible damage to eyes.

**Skin contact**

Specific test data for the substance or mixture is not available. May cause sensitization by skin contact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components). Causes skin irritation.

**Ingestion**

Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May be harmful if swallowed.

**Symptoms related to the physical, chemical and toxicological characteristics****Symptoms**

Redness. Burning. May cause blindness. Itching. Rashes. Hives. May cause redness and tearing of the eyes.

**Acute toxicity****Numerical measures of toxicity**

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 2,162.60 mg/kg  
ATEmix (dermal) 56,375.70 mg/kg

**Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
DIETHANOL AMINE 111-42-2	= 780 mg/kg ( Rat )	= 11.9 mL/kg ( Rabbit )	> 3.35 mg/L ( Rat ) 4 h

**Delayed and immediate effects as well as chronic effects from short and long-term exposure****Skin corrosion/irritation**

Classification based on data available for ingredients. Causes skin irritation.

**Serious eye damage/eye irritation**

Classification based on data available for ingredients. Causes burns. Causes serious eye damage.

**Respiratory or skin sensitization**

May cause an allergic skin reaction.

**Germ cell mutagenicity**

No information available.

**Carcinogenicity**

Contains a known or suspected carcinogen. Classification based on data available for ingredients. Suspected of causing cancer.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
DIETHANOL AMINE 111-42-2	A3	Group 2B	-	X

**Legend**

**ACGIH (American Conference of Governmental Industrial Hygienists)**

A3 - Animal Carcinogen

**IARC (International Agency for Research on Cancer)**

Group 2B - Possibly Carcinogenic to Humans

**Occupational Safety and Health Administration of the US Department of Labor**

X - Present

**Reproductive toxicity**

No information available.

<b>STOT - single exposure</b>	No information available.
<b>STOT - repeated exposure</b>	May cause damage to organs through prolonged or repeated exposure.
<b>Aspiration hazard</b>	No information available.
<b>Other adverse effects</b>	No information available.
<b>Interactive effects</b>	No information available.

## 12. Ecological information

**Ecotoxicity** Harmful to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
DIETHANOL AMINE 111-42-2	EC50: =7.8mg/L (72h, Desmodemus subspicatus) EC50: 2.1 - 2.3mg/L (96h, Pseudokirchneriella subcapitata)	LC50: 4460 - 4980mg/L (96h, Pimephales promelas) LC50: 1200 - 1580mg/L (96h, Pimephales promelas) LC50: 600 - 1000mg/L (96h, Lepomis macrochirus)	-	EC50: =55mg/L (48h, Daphnia magna)

**Persistence and degradability** No information available.

**Bioaccumulation** There is no data for this product.

### Component Information

Chemical name	Partition coefficient
DIETHANOL AMINE 111-42-2	-2.46

**Other adverse effects** No information available.

## 13. Disposal considerations

### Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

## 14. Transport information

DOT**Notes**

UN number or ID number  
 Proper shipping name  
 Transport hazard class(es)  
 Packing group  
 Reportable Quantity (RQ)  
 Special Provisions  
 DOT Marine Pollutant  
 Description  
 Emergency Response Guide  
 Number

**Could not find a Marine Pollutant Name.**

UN3082  
 Environmentally hazardous substance, liquid, n.o.s.  
 9  
 III  
 (Diethanolamine: RQ (kg)= 45.40)  
 8, 146, 173, 335, 441, IB3, T4, TP1, TP29  
 I  
 UN3082, Environmentally hazardous substance, liquid, n.o.s. (DIETHANOL AMINE), 9, III,  
 Residue: Last Contained  
 171

TDG**Notes**

UN number or ID number  
 UN proper shipping name  
 Transport hazard class(es)  
 Packing group  
 Special Provisions  
 Description

**Could not find a Marine Pollutant Name.**

UN3082  
 Environmentally hazardous substance, liquid, n.o.s.  
 9  
 III  
 16, 99  
 UN3082, Environmentally hazardous substance, liquid, n.o.s. (DIETHANOL AMINE), 9, III

MEX

UN number or ID number  
 UN proper shipping name  
 Transport hazard class(es)  
 Packing group  
 Technical Name  
 Description  
 Special Provisions

UN3082  
 Environmentally hazardous substance, liquid, n.o.s.  
 9  
 III  
 DIETHANOL AMINE  
 UN3082, Environmentally hazardous substance, liquid, n.o.s. (DIETHANOL AMINE), 9, III  
 274, 331, 335

ICAO (air)**Notes**

UN number or ID number  
 UN proper shipping name  
 Transport hazard class(es)  
 Packing group  
 Description  
 Special Provisions

**Could not find a Marine Pollutant Name.**

UN3082  
 Environmentally hazardous substance, liquid, n.o.s.  
 9  
 III  
 UN3082, Environmentally hazardous substance, liquid, n.o.s. (DIETHANOL AMINE), 9, III  
 A97, A158, A197, A215

IATA**Notes**

UN number or ID number  
 UN proper shipping name  
 Transport hazard class(es)  
 Packing group  
 Technical Name  
 Description  
 Special Provisions  
 ERG Code

**Could not find a Marine Pollutant Name.**

UN3082  
 Environmentally hazardous substance, liquid, n.o.s.  
 9  
 III  
 DIETHANOL AMINE  
 UN3082, Environmentally hazardous substance, liquid, n.o.s. (DIETHANOL AMINE), 9, III  
 A97, A158, A197  
 9L

IMDG**Notes**

UN number or ID number  
 UN proper shipping name  
 Transport hazard class(es)  
 Packing group  
 EmS-No.  
 Special Provisions  
 Marine pollutant  
 Description

**Could not find a Marine Pollutant Name.**

UN3082  
 Environmentally hazardous substance, liquid, n.o.s.  
 9  
 III  
 F-A, S-F  
 274, 335, 969  
 P  
 UN3082, Environmentally hazardous substance, liquid, n.o.s., 9, III, Residue: Last



Contained

**RID****Notes**

UN number or ID number

UN proper shipping name

Transport hazard class(es)

Packing group

Classification code

Special Provisions

Description

**Could not find a Marine Pollutant Name.**

UN3082

Environmentally hazardous substance, liquid, n.o.s.

9

III

M6

274, 335, 375, 601

UN3082, Environmentally hazardous substance, liquid, n.o.s. (DIETHANOL AMINE), 9, III

**ADR****Notes**

UN number or ID number

UN proper shipping name

Transport hazard class(es)

Packing group

Classification code

Tunnel restriction code

Special Provisions

Description

**Could not find a Marine Pollutant Name.**

UN3082

Environmentally hazardous substance, liquid, n.o.s.

9

III

M6

(-)

274, 335, 601, 375

UN3082, Environmentally hazardous substance, liquid, n.o.s. (DIETHANOL AMINE), 9, III,

(-)

**ADN****Notes**

UN number or ID number

UN proper shipping name

Transport hazard class(es)

Packing group

Classification code

Special Provisions

Description

Equipment Requirements

**Could not find a Marine Pollutant Name.**

UN3082

Environmentally hazardous substance, liquid, n.o.s.

9

III

M6

274, 335, 375, 601

UN3082, Environmentally hazardous substance, liquid, n.o.s. (DIETHANOL AMINE), 9, III

PP

**15. Regulatory information****International Inventories**

TSCA

-

Chemical name	CAS No.	Inventory Listing Status	Commercial Activity Designation
DIETHANOL AMINE	111-42-2	Present	Active

\*Contact supplier for details. One or more substances in this product are either not listed on the US TSCA inventory, listed on the confidential US TSCA inventory or are otherwise exempted from inventory listing requirements

DSL/NDL

-

EINECS/ELINCS

-

ENCS

-

IECSC

-

KECI

-

PICCS

-

AICS

-

**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 Chemicals Inventory

**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 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 %
DIETHANOL AMINE - 111-42-2	1.0

#### **SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

#### **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	Extremely Hazardous Substances RQs	Reportable Quantity (RQ)
DIETHANOL AMINE 111-42-2	100 lb	-	RQ 100 lb final RQ RQ 45.4 kg final RQ

### US State Regulations

#### **California Proposition 65**

This product contains the following Proposition 65 chemicals:

Chemical name	California Proposition 65
DIETHANOL AMINE - 111-42-2	Carcinogen

### U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
DIETHANOL AMINE 111-42-2	X	X	X

### U.S. EPA Label Information

**EPA Pesticide Registration Number** Not applicable

## 16. Other information

<b>NFPA</b>	<b>Health hazards</b> 3	<b>Flammability</b> 1	<b>Instability</b> 0	<b>Special hazards</b> -
<b>HMIS</b>	<b>Health hazards</b> 3*	<b>Flammability</b> 1	<b>Physical hazards</b> 0	<b>Personal protection</b> X
<i>Chronic Hazard Star Legend</i>	<i>* = Chronic Health Hazard</i>			

**Key or legend to abbreviations and acronyms used in the safety data sheet****Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	Time weighted average	STEL	Short term exposure limit
Ceiling	Maximum limit value	*	Skin designation

**Key literature references and sources for data used to compile the SDS**

Agency for Toxic Substances and Disease Registry (ATSDR)  
U.S. Environmental Protection Agency ChemView Database  
European Food Safety Authority (EFSA)  
Environmental Protection Agency  
Acute Exposure Guideline Level(s) (AEGl(s))  
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
U.S. Environmental Protection Agency High Production Volume Chemicals  
Food Research Journal  
Hazardous Substance Database  
International Uniform Chemical Information Database (IUCLID)  
National Institute of Technology and Evaluation (NITE)  
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)  
NIOSH (National Institute for Occupational Safety and Health)  
National Library of Medicine's ChemID Plus (NLM CIP)  
National Library of Medicine's PubMed database (NLM PUBMED)  
U.S. National Toxicology Program (NTP)  
New Zealand's Chemical Classification and Information Database (CCID)  
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organization for Economic Co-operation and Development High Production Volume Chemicals Program  
Organization for Economic Co-operation and Development Screening Information Data Set  
World Health Organization

**Revision Date** 2025-01-14  
**Revision Note** No information available.

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**