

## 1. Identification of the substance/mixture and of the company/undertaking

### Identification of the substance/preparation

**Product code** N7167COMPC  
**Product name** 3,3'-DIAMINOBENZIDINE, TETRAHY

### Company/Undertaking Identification

Life Technologies  
5791 Van Allen Way  
PO Box 6482  
Carlsbad, CA 92008  
+1 760 603 7200

LIFE TECHNOLOGIES LIMITED  
3 FOUNTAIN DRIVE  
INCHINNAN BUSINESS PARK  
PAISLEY, PA4 9RF  
SCOTLAND  
44-141 814-6100

### 24 hour Emergency Response:

866-536-0631  
301-431-8585  
Outside of the U.S. ++1-301-431-8585

**For research use only. Not intended for human or animal diagnostic or therapeutic uses.**

## 2. Hazards identification

### In accordance with local and national regulations,

The product is classified and labelled in accordance with Directive 1999/45/EC. REGULATION (EC) No 1272/2008  
Classification according to EU Directives 67/548/EEC or 1999/45/EC.

### GHS - Classification

#### Signal word

**Danger**



### Health hazard

Carcinogenicity	Category 1B
Mutagenicity	Mutagenic Category 2

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### **Physical hazards**

not hazardous

### **Hazard statements**

H341 - Suspected of causing genetic defects

H350 - May cause cancer

### **Precautionary statements**

P201 - Obtain special instructions before use

P202 - Do not handle until all safety precautions have been read and understood

P281 - Use personal protective equipment as required

P308 + P313 - IF exposed or concerned: Get medical advice/attention

### **European Union**



### **EU Specific Hazard Statements**

#### **R-phrase(s)**

R68 - Possible risk of irreversible effects

R45 - May cause cancer

#### **S-phrase(s)**

S22 - Do not breathe dust

S36/37 - Wear suitable protective clothing and gloves.

### **Principle Routes of Exposure/**

#### **Potential Health effects**

**Eyes**

May cause eye irritation with susceptible persons.

**Skin**

May cause skin irritation in susceptible persons.

**Inhalation**

May be harmful by inhalation.

**Ingestion**

May be harmful if swallowed.

#### **Specific effects**

**Carcinogenic effects**

R45 - May cause cancer

**Mutagenic effects**

Contains a known or suspected mutagen.

**Reproductive toxicity**

none

**Sensitisation**

none

**Target Organ Effects**

No known effects under normal use conditions

### 3. Composition/information on ingredients

Chemical Name	CAS-No.	EINECS-No.	Weight percent
3,3-Diaminobenzidine tetrahydrochloride	7411-49-6	231-018-9	60-100

We recommend handling all chemicals with caution.

### 4. FIRST AID MEASURES

<b>Skin contact</b>	Rinse with plenty of water. If symptoms arise, call a physician.
<b>Eye contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician.
<b>Ingestion</b>	Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Do not induce vomiting without medical advice.
<b>Inhalation</b>	Move to fresh air. If symptoms persist, call a physician. If not breathing, give artificial respiration.
<b>Notes to physician</b>	Treat symptomatically.

### 5. FIRE-FIGHTING MEASURES

<b>Suitable extinguishing media</b>	Water spray. Carbon dioxide (CO <sub>2</sub> ). Foam. Dry chemical.
<b>Special protective equipment for firefighters</b>	Wear self-contained breathing apparatus and protective suit.

### 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions</b>	Use personal protective equipment.
<b>Methods for cleaning up</b>	Take up mechanically and collect in suitable container for disposal.

#### Environmental precautions

Prevent further leakage or spillage if safe to do so.

See Section 12 for additional information.

### 7. HANDLING AND STORAGE

<b>Handling</b>	Avoid contact with skin, eyes and clothing. Wear personal protective equipment.
<b>Storage</b>	Keep in a dry, cool and well-ventilated place.

### 8. Exposure controls/personal protection

#### Exposure limits

Chemical Name	EU OEL (TWA)	EU OEL (STEL)	EU Skin Notation
3,3-Diaminobenzidine tetrahydrochloride 7411-49-6	None	None	None

Chemical Name	Austria	Belgium (TWA)	Denmark (TWA)	Finland OEL (TWA)
3,3-Diaminobenzidine tetrahydrochloride 7411-49-6	None	None	None	None

Chemical Name	France OEL (VME)	Germany OEL (TWA)	Ireland (TWA)	Italy OEL (TWA)
3,3-Diaminobenzidine tetrahydrochloride 7411-49-6	None	None	None	None

Chemical Name	Sweden - Occupational Exposure Limits - TLVs (LLVs)	Netherlands OEL (MAC)	Spain OEL (TWA)	United Kingdom
3,3-Diaminobenzidine tetrahydrochloride 7411-49-6	none	None	None	None

Chemical Name	European Union	United Kingdom	France OEL (VME)	Germany OEL (TWA)
3,3-Diaminobenzidine tetrahydrochloride 7411-49-6	None	None	None	None

Chemical Name	Italy OEL (TWA)	Portugal	Netherlands OEL (MAC)	Finland OEL (TWA)
3,3-Diaminobenzidine tetrahydrochloride 7411-49-6	None	None	None	None

Chemical Name	Austria	Denmark	Poland	Switzerland
3,3-Diaminobenzidine tetrahydrochloride 7411-49-6	None	None	None	None

Chemical Name	Ireland	Norway	Spain OEL (TWA)
3,3-Diaminobenzidine tetrahydrochloride 7411-49-6	None	None	None

#### Engineering measures

Ensure adequate ventilation, especially in confined areas.

#### Personal protective equipment

Personal Protective Equipment requirements are dependent on the user institution's risk assessment and are specific to the risk assessment for each laboratory where this material may be used.

##### **Respiratory protection**

In case of insufficient ventilation wear suitable respiratory equipment.

##### **Hand protection**

Impervious gloves.

##### **Eye protection**

Safety glasses with side-shields.

##### **Skin and body protection**

Lightweight protective clothing.

##### **Hygiene measures**

Handle in accordance with good industrial hygiene and safety practice.

#### Environmental exposure controls

Prevent product from entering drains.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

#### General Information

##### **Form**

solid

##### **Appearance**

No information available

##### **Odour**

No information available

##### **Boiling Point/Range**

°C No data available

°F No data available

##### **Melting point/range**

°C No data available

°F No data available

Flash point	°C No data available	°F No data available
Autoignition temperature	°C No data available	°F No data available
oxidising properties	No information available	
Water solubility	No data available	

## 10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions.
Materials to avoid	No dangerous reaction known under conditions of normal use.
Hazardous decomposition products	None under normal use.
polymerisation	Hazardous polymerisation does not occur.

## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

Chemical Name	LD50 (oral,rat/mouse)	LD50 (dermal,rat/rabbit)	LC50 (inhalation,rat/mouse)
3,3-Diaminobenzidine tetrahydrochloride	No data available	No data available	No data available

### Principle Routes of Exposure/ Potential Health effects

Eyes	May cause eye irritation with susceptible persons.
Skin	May cause skin irritation in susceptible persons.
Inhalation	May be harmful by inhalation
Ingestion	May be harmful if swallowed.
Carcinogenic effects	R45 - May cause cancer
Mutagenic effects	Contains a known or suspected mutagen.
Reproductive toxicity	none
Sensitisation	none
Target Organ Effects	No known effects under normal use conditions

## 12. ECOLOGICAL INFORMATION

Ecotoxicity effects	No information available.
Mobility	No information available.
Biodegradation	Inherently biodegradable.
Bioaccumulation	Does not bioaccumulate.

## 13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with local regulations.

## 14. TRANSPORT INFORMATION

**IATA**

<b>Proper shipping name</b>	Not classified as dangerous in the meaning of transport regulations.
<b>Hazard class</b>	None
<b>Subsidiary Class</b>	None
<b>Packing group</b>	None
<b>UN-No</b>	None

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

Complies

Chemical Name	EINECS	ELINCS	ENCS	PICCS
3,3-Diaminobenzidine tetrahydrochloride	Listed	-	-	Listed

Chemical Name	AICS	KECL	DSL	NDSL
3,3-Diaminobenzidine tetrahydrochloride	Listed	-	Listed	-

**16. OTHER INFORMATION****Reason for Revision** (M)SDS sections updated

For research use only. Not intended for human or animal diagnostic or therapeutic uses.

The above information was acquired by diligent search and/or investigation and the recommendations are based on prudent application of professional judgment. The information shall not be taken as being all inclusive and is to be used only as a guide. All materials and mixtures may present unknown hazards and should be used with caution. Since the Company cannot control the actual methods, volumes, or conditions of use, the Company shall not be held liable for any damages or losses resulting from the handling or from contact with the product as described herein. THE INFORMATION IN THIS MSDS DOES NOT CONSTITUTE A WARRENTY, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PUPOSE.

**End of Safety Data Sheet**