

Material Safety Data Sheet

Printing date 02/24/2012

Reviewed on 11/21/2011

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

- **Product identifier**
- **Trade name:** dsDNA TMB Substrate
- **Catalog or product number:** 425-1717
- **Application of the substance / the preparation** In-vitro laboratory reagent or component
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Bio-Rad Laboratories, Diagnostic Group
4000 Alfred Nobel Drive
Hercules, California 94547
1(510)724-7000
- **Information department:**
Technical services, customer support
TechsupportUSSD@bio-rad.com
- **Emergency telephone number:**
1(800) 424-9300 Use only in the event of a CHEMICAL EMERGENCY involving a SPILL, LEAK, FIRE, EXPLOSION, or ACCIDENT.

2 Composition/information on ingredients

- **Description:** Mixture of the substances listed below with non-hazardous additions.

- **Listing of dangerous and non-hazardous components:**

7732-18-5	water		50-100%
68-12-2	N,N-dimethylformamide	T Repr. Cat. 2 R61 Xn R20/21 Xi R36	2.5-5%
54827-17-7	3,3',5,5'-tetramethylbenzidine	T R23/24/25	0.01-0.1%

- **Additional information** For the wording of the listed risk phrases refer to section 15.

3 Hazards identification

- **Classification of the substance or mixture**
 - **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**
Contains a component that may be fetotoxic and/or teratogenic.
T; Toxic
R61: May cause harm to the unborn child.
 - **Information concerning particular hazards for human and environment:**
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
 - **Classification system:**
The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.
The classification was made according to OSHA 29CFR 1910.1200 and 1910.1030, and is expanded upon from company and/or literature information.
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- **Label elements**
 - **Labelling according to EU guidelines:**
The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials

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· **Code letter and hazard designation of product:**

T Toxic

· **Hazard-determining components of labelling:**

N,N-dimethylformamide

· **Risk phrases:**

61 May cause harm to the unborn child

· **Safety phrases:**

53 Avoid exposure - obtain special instructions before use.

20 When using do not eat or drink.

36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

45 In case of accident or if you feel unwell, seek medical advice immediately.

· **Classification system**· **NFPA ratings (scale 0-4)**

Health = 0

Fire = 2

Reactivity = 0

* **4 First aid measures**

- **After inhalation** Supply fresh air; consult doctor in case of complaints.
- **After skin contact** Generally the product does not irritate the skin.
- **After eye contact** Rinse opened eye for several minutes under running water.
- **After swallowing** Induce vomiting and call for medical help.

* **5 Firefighting measures**

- **Suitable extinguishing agents**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Protective equipment:** Wear self-contained respiratory protective device.

* **6 Accidental release measures**

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment (See section 8). Keep unprotected persons away.
- **Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
- **Reference to other sections**
See Section 8 for information on personal protection equipment.

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See Section 13 for disposal information.

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7 Handling and storage

- **Handling**
- **Precautions for safe handling** Open and handle receptacle with care.
- **Information about protection against explosions and fires:** Keep respiratory protective device available.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** According to product specification
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

- **Components with limit values that require monitoring at the workplace:**

68-12-2 N,N-dimethylformamide

PEL (United States)	30 mg/m ³ , 10 ppm Skin
REL (United States)	30 mg/m ³ , 10 ppm Skin
TLV (United States)	30 mg/m ³ , 10 ppm Skin; BEI

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment**
- **General protective and hygienic measures**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Store protective clothing separately.
- **Breathing equipment:** Not required.
- **Protection of hands:** Protective gloves.
- **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
Synthetic gloves
- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Safety glasses

9 Physical and chemical properties

- **General Information**
- **Appearance:**
Form: Liquid
Color: Yellow tint

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· Odor:	Alcohol-like
· pH-value at 20°C:	3.5
· Change in condition Melting point/Melting range: undetermined Boiling point/Boiling range: 100°C	
· Flash point:	> 55°C
· Ignition temperature:	440°C
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Vapor pressure at 20°C:	23 hPa
· Density:	Not determined
· Solubility in / Miscibility with Water:	Fully miscible
· Solvent content: Organic solvents: Water:	0.0 % 94.8 %
· Solids content:	0.3 %
· Other information	No further relevant information available.

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known

11 Toxicological information

· **Acute toxicity:**

· **LD/LC50 values for hazardous components per OSHA criteria:**

68-12-2 N,N-dimethylformamide

Oral	LD50	7600 mg/kg (rat)
Dermal	LD50	5000 mg/kg (rbt)
Inhalative	LC50/4 h	9400 mg/l (mus)

· **Primary irritant effect:**

- **on the skin:** No irritant effect.
- **on the eye:** No irritant effect.
- **Sensitization:** No sensitizing effects known.

· **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

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The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

12 Ecological information

- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
 Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.
 Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**
 Hand over to hazardous waste disposers.
 Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· UN-Number	
· DOT	UN1993
· ADR, IMDG, IATA	1993
· UN proper shipping name	
· ADR	1993 FLAMMABLE LIQUID, N.O.S. (not viscous) (N,N-DIMETHYLFORMAMIDE)
· IMDG, IATA	FLAMMABLE LIQUID, N.O.S. (N,N-DIMETHYLFORMAMIDE)
· Transport hazard class(es)	
· DOT	
· Label	3
· ADR	
· Class	3 Flammable liquids
· Label	3
· IMDG, IATA	
· Class	3 Flammable liquids.
· Label	3
· Packing group	
· DOT, ADR, IMDG, IATA	III

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· Environmental hazards:	
· Marine pollutant:	No
· Special precautions for user	Warning: Flammable liquids
· Danger code (Kemler):	30
· EMS Number:	F-E, <u>S-E</u>
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· IATA	
· Remarks:	This package contains dangerous goods in small quantities and is in all respects in compliance with the applicable international and national government regulations and the IATA Dangerous Goods Regulations.

15 Regulatory information

· **SARA (Superfund Amendments and Reauthorization Act of 1986 - USA)**

· **Section 302/304 (40CFR355.30 / 40CFR355.40):**

None of the ingredients is listed.

· **Section 313 (40CFR372.65):**

68-12-2 | N,N-dimethylformamide

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

· **Carcinogenic categories**

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

68-12-2 | N,N-dimethylformamide

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· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

· **National regulations**

· **Technical instructions (air):**

Class	Share in %
I	0.01-0.1
NK	2.5-5

· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

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· **Department issuing MSDS:** Environmental Health and Safety.

· **Contact:**

Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000

Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000

· * **Data compared to the previous version altered.**

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