

Safety Data Sheet

acc. to OSHA HCS




Printing date 06/15/2015

Reviewed on 06/15/2015

1 Identification

- **Product identifier**
- **Trade name:** TMB Peroxidase EIA Sub Kit Solution A
- **Catalog or product number:** 9701859, 9701173, 10042551, 10042550
- **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Bio-Rad Laboratories, Life Science Group
2000 Alfred Nobel Drive
Hercules, California 94547 (510)741-1000
- **Information department:**
Technical services, customer support
lsg_techserv_us@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.
510-741-1000

2 Hazard(s) identification

- **Classification of the substance or mixture**
Flam. Liq. 3 H226 Flammable liquid and vapour.
Acute Tox. 4 H302 Harmful if swallowed.
Eye Irrit. 2A H319 Causes serious eye irritation.
Repr. 1B H360 May damage fertility or the unborn child.
 - **Label elements**
 - **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
 - **Hazard pictograms**
- 


- GHS02 GHS07 GHS08
- **Signal word** Danger
 - **Hazard-determining components of labeling:**
N,N-dimethylformamide
3,3',5,5'-tetramethylbenzidine
 - **Hazard statements**
H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H319 Causes serious eye irritation.
H360 May damage fertility or the unborn child.
 - **Precautionary statements**
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.

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P303+P361+P353 *IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.*

P305+P351+P338 *If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*

P405 *Store locked up.*

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

· **Additional information:** Contact with acids may cause release of toxic gases

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **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	20-35%
54827-17-7	3,3',5,5'-tetramethylbenzidine	0.1-1.0%

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

4 First-aid measures

· **Description of 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.

· **Information for doctor**

· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

· **Indication of any immediate medical attention and special treatment needed** No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**

· **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.

· **Advice for firefighters**

· **Protective equipment:** No special measures required.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Wear protective clothing.

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- **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).
- **Reference to other sections**
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling**
- **Precautions for safe handling** No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **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.
- **Control parameters**

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

68-12-2 N,N-dimethylformamide

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

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures** Wash hands before breaks and at the end of work.
- **Breathing equipment:** Not required.
- **Protection of hands:** Protective gloves.
- **Material of gloves** 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.

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 · **Eye protection:** Safety glasses

9 Physical and chemical properties

 · **Information on basic physical and chemical properties**

 · **General Information**

 · **Appearance:**

Form:	Liquid
Color:	Colorless
Odor:	Odorless
Odour threshold:	Not determined.

 · **pH-value:** Not determined.

 · **Change in condition**

Melting point/Melting range:	undetermined
Boiling point/Boiling range:	100 °C

 · **Flash point:** > 55 °C

 · **Flammability (solid, gaseous)** Not applicable.

 · **Ignition temperature:** 440 °C

 · **Decomposition temperature:** Not determined.

 · **Auto igniting:** Product is not selfigniting.

 · **Danger of explosion:** Product does not present an explosion hazard.

 · **Explosion limits:**

Lower:	2.2 Vol %
Upper:	16.0 Vol %

 · **Vapor pressure at 20 °C:** 23 hPa

 · **Density at 20 °C:** 0.986 g/cm³

 · **Relative density** Not determined.

 · **Vapour density** Not determined.

 · **Evaporation rate** Not determined.

 · **Solubility in / Miscibility with**
Water: Fully miscible

 · **Partition coefficient (n-octanol/water):** Not determined.

 · **Viscosity:**

dynamic:	Not determined.
kinematic:	Not determined.

 · **Solvent content:**

Organic solvents:	0.0 %
Water:	71.8 %

 · **Other information** No further relevant information available.

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10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known

11 Toxicological information

- **Information on toxicological effects**
- **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 eye:** Irritant effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**

· **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.

12 Ecological information

- **Toxicity**
- **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.
- **Mobility in soil** 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.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.

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- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

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	UN2265
· DOT, ADR, IMDG, IATA	UN2265
· UN proper shipping name	2265 N,N-DIMETHYLFORMAMIDE, mixture
· ADR	N,N-DIMETHYLFORMAMIDE, mixture
· IMDG, IATA	N,N-DIMETHYLFORMAMIDE, mixture
· Transport hazard class(es)	
· DOT, ADR, IMDG, IATA	3 Flammable liquids
· Class	3
· Label	3
· Packing group	III
· DOT, ADR, IMDG, IATA	III
· Environmental hazards:	
· Marine pollutant:	No
· Special precautions for user	Warning: Flammable liquids
· Danger code (Kemler):	30
· EMS Number:	F-E,S-D
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Remarks:	ERG 129
· UN "Model Regulation":	UN2265; N,N-DIMETHYLFORMAMIDE, mixture; 3; III

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15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- SARA (Superfund Amendants 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**

- **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

- **TLV (Threshold Limit Value established by ACGIH)**

68-12-2 | N,N-dimethylformamide

A4

- **MAK (German Maximum Workplace Concentration)**

None of the ingredients is listed.

- **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

- **National regulations**

- **Technical instructions (air):**

Class	Share in %
I	0.1-1.0
NK	20-35

- **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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.

- **Department issuing SDS:** 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

- **Date of preparation / last revision** 06/15/2015 / -

- **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

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EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Flam. Liq. 3: Flammable liquids, Hazard Category 3
Acute Tox. 4: Acute toxicity, Hazard Category 4
Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A
Repr. 1B: Reproductive toxicity, Hazard Category 1B

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

US