

## SAFETY DATA SHEET (SDS)

### SECTION 1: IDENTIFICATION OF PRODUCT (MIXTURE) AND SUPPLIER

**Product Name:** EIA Substrate Buffer

**Product Number:** 26181 (120 mL)

**Intended Use:** These are **replacement** or **separately purchased** components, identical to those found in the kits, which are to be used exclusively with these Bio-Rad Laboratories products:  
 GS HIV-1/HIV-2 *PLUS O* EIA, Catalog Number 32588, 32589, 25256  
 GS HBsAg EIA 3.0, Catalog Number 32591, 32592, 25258  
 GS HIV Combo Ag/Ab EIA, Catalog Number 26217, 26218  
 GS HIV-2 EIA, Catalog Number 32536  
 MONOLISA™ Anti-HBc IgM EIA, Catalog Number 26174  
 MONOLISA™ Anti-HBc EIA, Catalog Number 26186  
 MONOLISA™ Anti-HBs EIA, Catalog Number 26220  
 MONOLISA™ Anti-HAV IgM, Catalog Number 72495  
 MONOLISA™ Anti-HAV, Catalog Number 72496  
 Refer to the Bio-Rad Laboratories product SDSs and kit instructions for safe handling of this kit optional material in the assay process.

**Manufactured by:** Bio-Rad Laboratories, Inc.

**Address:** 6565 185th Avenue NE  
Redmond, WA 98052-5039, USA

**Website:** [www.bio-rad.com](http://www.bio-rad.com)

**Phone Number:** 1-800-2-BIORAD (1-800-224-6723); or 1-425-881-8300 (daytime PT)

**SDS e-mail contact:** [ro-sds@bio-rad.com](mailto:ro-sds@bio-rad.com)

**Technical Information Contacts:** Bio-Rad provides a toll free line for technical assistance, available 24 hours a day, 7 days a week. In the United States of America and Puerto Rico, call toll free 1-800-2-BIORAD (1-800-224-6723). Outside the U.S.A., please contact your regional Bio-Rad office for assistance. *Refer to section 16 for non-US local Bio-Rad agent contact information.*

**Authorized Representative in the European Community:** *FRANCE: Bio-Rad*  
 3 boulevard Raymond Poincaré  
 92430 Marnes-la-Coquette  
 Phone: +33 (0) 1 47 95 60 00 / Fax: +33 (0) 1 47 41 91 33  
[\[fds-msds.fr@bio-rad.com\]](mailto:fds-msds.fr@bio-rad.com)

**Emergency Phone Number:** **This SDS is listed with CHEMTREC 1-800-424-9300 (US) / 001-703-527-3887** (international – can be called collect). Use only in the event of a CHEMICAL EMERGENCY involving a SPILL, LEAK, FIRE, EXPLOSION, or ACCIDENT with this product.

### SECTION 2: HAZARDS IDENTIFICATION -- HAZARDOUS COMPONENTS

This test kit should be handled only by qualified personnel trained in laboratory procedures and familiar with their potential hazards. Specific warnings are given in the instructions for use. The absence of a specific warning should not be interpreted as an indication of safety. The following information is furnished for those product hazardous constituents that require regulatory control or disclosure at the concentration found in the product. Refer to Section 16 for the full text of any solely abbreviated or coded hazard statements provided below and for the Key / legend to abbreviations and acronyms.

Component	Content
<b>Substrate Buffer,</b> 1 bottle (120 mL)	<ul style="list-style-type: none"> <li>- Dilute <b>citric acid</b> (C<sub>6</sub>H<sub>8</sub>O<sub>7</sub>, CAS# 79-92-9, EC No 201-069-1) / <b>sodium acetate buffer</b>, [pH ~ 4.0, clear liquid].</li> <li>- &lt; <b>5% dimethylsulfoxide</b> [DMSO - C<sub>2</sub>H<sub>6</sub>OS], CAS# 67-68-5, EC No 200-644-3.</li> <li>- &lt; <b>0.1% hydrogen peroxide</b> [H<sub>2</sub>O<sub>2</sub>], CAS# 7722-84-1, EC No 231-765-0.</li> </ul> Not subject to GHS, US HCS, EC CLP and analogous global GHS-based regulatory requirements in this product mixture and concentration.

**Markings according to the *United Nations (UN) Globally Harmonized System (GHS), United States Hazard Communication Standard (US HCS), and European Community (EC) 2008/1272/EC (EC CLP) guidelines and analogous GHS-based global regulations:***

The chemical dilutions in this product are not subject to classification or labeling according United Nations (UN) GHS, United States Hazard Communication Standard (US HCS), related European Community (EC) 2008/1272/EC (EC CLP) (EC CLP) guidelines and applicable analogous GHS-based global regulations.

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS -- HAZARDOUS COMPONENTS**

The following information is furnished for those product hazardous constituents that require regulatory control or disclosure regardless of the concentration found in the product. Note that the information here is often based on data from the chemical raw material safety data sheet and literature (LD<sub>50</sub>, exposure limits, etc.). Chemical constituents that do not require regulatory disclosure are not generally included here. This product contains a significantly diluted concentration in an aqueous solution; thus the assessment below has not considered the dilution reduction effect on the hazard. That hazard communication information is provided in Section 2 above. Some components were tested at the concentration found in the kit. In that case, the assessment is provided for the chemical dilution tested, and the tested concentration will be provided at the beginning of the *Chemical Ingredient Data/Information* box. The GHS, US HCS, EC CLP, and analogous GHS-based global regulation classifications were made according to the existing editions and expanded upon from company and literature data. Refer to section 16 for the full text of any *Comprehensive GHS-based Classification* statements coded below, for the list of sources utilized in the assessment and for the Key / legend to abbreviations and acronyms.

**Chemical Ingredient Data / Information**

**Chemical Ingredient: Dimethyl-sulfoxide [DMSO]**

Chemical concentrations found in this product: **≤ 5% in an aqueous solution**

**Data for Concentrated / 100% chemical used in the product mixture (concentration tested):**

CAS#: 67-68-5 (100%)	LD <sub>50</sub> (oral-rat): 14500 mg/kg (100%)
EC No: 200-644-3 (100%)	LC <sub>50</sub> (inhalation-rat): 1600 mg/m <sup>3</sup> (4 hr) (100%)
RTECS#: PV6210000 (100%)	LD <sub>50</sub> (skin-rabbit): >5000 mg/m <sup>3</sup> (100%)
Index No: NA (100%)	LC <sub>50</sub> (96 hr-fish): NE mg/L (100%)
Chemical Formula: C <sub>2</sub> H <sub>6</sub> OS (100%)	Flash point: 188-192°F / 86.7-88.9°C (100%)
Molecular weight: 78.13 g/mol (100%)	Flammable limits: LEL/LFL is 3.5%; UEL/UFL is 42% vv in air (100%)

Synonyms/Trade Names: Dimethyl sulfoxide; Dimethyl sulphoxide; Dimexide; Dipirartril-tropico; DMS-70; DMS-90; DMSO; Dolicur; Domoso; Dromisol; Durasorb; A 10846; Deltan; Demeso; Demasorb; Demavet; Demsodrox; Dermasorb; Gamasol 90; Hyadur; Infiltrina; M 176, Methane, sulfinylbis-; Methylsulfinylmethane; Somipront; SQ 9453, Topsym; NSC-763; Rimso-50; Sulfinylbis(methane); Syntexan

**Raw Material GHS / US HCS / EC CLP Classification (100%): No Pictogram required**

**WARNING**

Fla. Liq. Cat. 4  
H227  
P210, P280, P370 + P378, P403 + P235, P501

[Source: Raw Material vendor SDS, CCOHS databases and regulatory research]

**Chemical Ingredient Data / Information**

**Chemical Ingredient: Citric acid**

Chemical concentrations found in this product: **<1.5% w/v**

**Data for Concentrated / 100% chemical used in the product mixture (concentration tested):**

CAS#: 77-92-9 (100%)	LD <sub>50</sub> (oral-rat): 5400 mg/kg (100%)
EC No: 201-069-1 (100%)	LC <sub>50</sub> (inhalation-rat): NE
RTECS#: GE7350000 (100%)	LD <sub>50</sub> (skin-rabbit): >2000 mg/kg (100%)
Index No: NA (100%)	
Toxicity to fish mortality LC <sub>50</sub> - Leuciscus idus melanotus - 440 mg/l - 48 h Method: OECD Test Guideline 203	
Chemical Formula: C <sub>6</sub> H <sub>8</sub> O <sub>7</sub> (100%)	pH value: 1.8 at ca.50 g/l at 25 °C (77 °F) (100%)
Molecular weight: 192.12 g/mol (100%)	
Synonyms/Trade Names: Aciletten; Anhydrous citric acid; Citretten; Citro; 2-Hydroxy-1,2,3-propanetricarboxylic acid; beta-Hydroxytricarballic acid; Kyselina citronova	
Skin corrosion/irritation: Skin - rabbit - Mild skin irritation - OECD Test Guideline 404	
Serious eye damage/eye irritation: Eyes - rabbit - Irritating to eyes. - OECD Test Guideline 405	
Respiratory or skin sensitization: Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.	

**Raw Material GHS / US HCS / EC CLP Classification (100%):**

**WARNING**

Acute Tox. – skn Cat. 5, Skin Irrit. Cat. 1, Eye Irrit. Cat. 2A  
H313, H316, H319  
P264, P280, P305 + P351 + P338, P337 + P313



[Source: Raw Material vendor SDS, CCOHS databases and regulatory research]

**Related product information:**

- ◆ Refer to Section 16 for the full text of any *Comprehensive GHS-based Classification* statements coded above. Refer to Section 16 for the list of sources utilized in the assessment and the Key / legend to abbreviations and acronyms.
- ◆ No significant adverse health effects are expected by any route for the miscellaneous salts, **<0.1% hydrogen peroxide** [H<sub>2</sub>O<sub>2</sub>, CAS# 7722-84-1], water and sodium acetate solution in the kit volumes and concentrations present [chemical or dilution is not subject to GHS, EC CLP, or GHS-based hazard labeling]:
- ◆ Do not eat, drink or smoke when using this product.
- ◆ Wear protective gloves / protective clothing / eye protection / face protection. Take off contaminated clothing and wash before reuse.

**SECTION 4: EMERGENCY FIRST AID MEASURES**

Health Effects:	Symptoms of over exposure may include mild non-specific irritation. Skin contact may result in dermatitis.
Eye Contact:	Flush eyes with copious water for at least 15 minutes. Ensure adequate flushing by separating the eyelids with fingers while flushing with water. OBTAIN MEDICAL ATTENTION.
Skin Contact:	Remove contaminated clothing. Flush skin with copious water and wash affected area with soap and water. If blood-to-blood contact occurs, or if more severe symptoms develop, consult a physician.
Inhalation:	Remove person from exposure area to fresh air. Generally, this aqueous product is not a significant inhalation hazard in the kit volumes and concentrations present. If breathing becomes difficult, immediately call for emergency medical assistance. Treat symptomatically and supportively.
If Swallowed:	If ingested, rinse out mouth thoroughly with water, provided the person is conscious, and OBTAIN MEDICAL ATTENTION. Call a physician or the local poison control center. Treat symptomatically and supportively. If vomiting occurs, keep head lower than hips to prevent aspiration.
Notes to Physician	According to the OSHA Bloodborne Pathogens Standard (29 CFR 1910.1030), Universal Precautions apply. Persons handling human blood source samples should be offered hepatitis B vaccination prior to working with human source material.

**SECTION 5: FIREFIGHTING MEASURES**

Extinguishing Media:	Use extinguishing media appropriate for the surrounding fire.
Hazardous Combustion Products:	Oxides of carbon or nitrogen may form when heated to decomposition.
Special Firefighting Procedures:	Conventional firefighting full protective equipment (with NIOSH-approved self-contained breathing apparatus) and procedures appropriate for the surrounding fire should be sufficient.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

- ◆ Avoid direct contact with skin, eyes, mucous membranes, and clothing by wearing appropriate lab Personal Protective Equipment (PPE), including gloves, lab coat, and eye/face protection.
- ◆ In the event of a hazardous material spill, contain the spill if it is safe to do so and immediately move to a safe area, free from potential aerosols, to decontaminate and/or safely remove any contaminated clothing, as necessary. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Isolate the hazard area and ventilate if appropriate. Ensure that appropriate spill cleanup materials and PPE are available and used.
- ◆ Prevent material from entering sewers, waterways, or confined spaces.
- ◆ Follow established laboratory policy and applicable CDC/NIH biosafety and/or OSHA/WISHA hazardous material spill and/or NFPA/Fire Code guidelines for appropriate hazardous chemical and/or biological material spill response and cleanup. Avoid release to the environment.
- ◆ Wear appropriate PPE. Clean the spill area with water and wipe dry. Spills can also be absorbed with an appropriate inert material (e.g., spill pillows, absorbent pads), which are secured in an appropriate, labeled, sealed container. Material used to absorb the spill may require hazardous material waste disposal. Infectious, Chemical, and Laboratory wastes must be handled and discarded in accordance with all local, regional, national, and international regulations.
- ◆ Refer to Sections 8 and 13 for more specifics.

**SECTION 7: HANDLING AND STORAGE INFORMATION**

Handling:	<p>This test kit should be handled only by qualified personnel trained in laboratory procedures and familiar with their potential hazards. Follow proper Good Laboratory Practices and safety guidelines for handling chemical, biological, and laboratory hazards.</p> <p>Do not smoke, eat, or drink in areas where patient samples and kit reagents are handled. Wash your hands after use. Wear appropriate personal protective equipment (PPE) including gloves, lab coat or equivalent, and eye/face protection.</p> <p>Keep containers tightly closed; avoid splashing, spills, and the generation of aerosols.</p> <p>Handle all human source materials, specimens, and equipment used to perform the operations as though they were capable of transmitting infectious disease, as per <i>Standard</i> and <i>Universal Precautions</i>.</p> <p>All personal protective equipment should be removed before leaving the work area. Refer to Section 8 for more specifics.</p> <p>Avoid release to the environment. Do not allow undiluted product hazardous chemical ingredient or large quantities of it to reach ground water or water course.</p> <p>Consult with your Environmental Health &amp; Safety Office for assistance..</p>
Storage:	Store according to product and label instructions (generally at 2-8 °C).
Caution, consult accompanying documents. Read and follow all the precautions and warnings in the kit product instructions for use.	
These are separately purchased components, identical to those found in the kits, which are to be used exclusively with the Bio-Rad Laboratories products listed in Section 1.	

### SECTION 8: EXPOSURE CONTROL / PERSONAL PROTECTION MEASURES

**Control Parameters – Component chemicals with limit values that require monitoring at the workplace:** The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Chemical	CAS-No.	Value	Control parameter	Update	Basis
<i>Hydrogen peroxide</i>	7722-84-1	TWA – TLV	1 ppm	2007-01-01	USA. ACGIH Threshold Limit Values (TLV)
		TWA – PEL	1.4 mg/m <sup>3</sup> * 1 ppm	1997-08-04	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		REL IDLH	1.4 mg/m <sup>3</sup> 1 ppm 75 ppm	2005-149 [SEP-2007]	USA. National Institute for Occupational Safety and Health (NIOSH)
<p>* The value in mg/m<sup>3</sup> is approximate  <b>Remarks:</b> TLV CARCINOGENICITY DESIGNATION A3 – Animal Carcinogen: Substance is carcinogenic in laboratory animals under conditions that are not considered relevant to worker exposure. Available human studies and evidence suggest that the substance is not likely to cause cancer in humans except under unusual or unlikely routes or levels of exposure. Worker exposure to an A3 carcinogen should be controlled to levels as low as reasonably achievable below the TLV.</p>					
<i>Dimethyl sulfoxide</i>	67-68-5	TWA-WEEL	250 ppm	2014	USA: Workplace Environmental Exposure Levels
		MAK	50 ppm (160 mg/m <sup>3</sup> )	2011	GERMANY:
<i>Source: RTECS September 2013 Update and Raw Material Vendor Safety Data Sheet</i>					

*Additional information:* The lists that were valid during the creation were used as basis.

The following personal protective equipment (PPE) is recommended to prevent blood or other potentially infectious or hazardous materials from reaching the user's work or street clothes, skin, mouth, mucous membranes and eyes, or hazard inhalation, under normal conditions of use and for the time during which the protective equipment is utilized:

Ventilation:	Adequate lab ventilation is required.
Eye / Face Protection:	Wear ANSI approved safety glasses, goggles, or face shield with safety glasses or goggles. Contact lenses should not be worn when handling lab hazards.
Protective Gloves:	Suitable gloves must be worn at all times when handling kit reagents or patient samples to provide skin protection from splash and intermittent contact. Synthetic gloves, such as Nitrile, Neoprene, and Vinyl, are recommended because they are sturdy, effective, and contain no natural latex ingredients associated with latex glove allergic reactions. Disposable (single use) gloves should be changed often and never be reused. Wash hands thoroughly after removing gloves.
Protective Clothing:	Wear a lab coat, clinic jacket, gown, apron, and/or smock. Disposable clothing is strongly recommended when handling biohazardous material. If reusable clothing is used, procedures for handling potentially infectious laundry under the OSHA Bloodborne Pathogens Standard (29 CFR 1910.1030) are required.
Respiratory Protection:	Do not breathe mist / vapors/vapours / spray.
Other:	All personal protective equipment should be removed before leaving the work area and placed in an appropriately designated area or container for storage, processing, decontamination or disposal.

### SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Clear aqueous liquid.		
<b>Odor / odour:</b>	No applicable information was found.	<b>Odor/odour threshold:</b>	Not Established.
<b>pH:</b>	pH~4		
<b>Boiling point:</b>	Undetermined.	<b>Melting point:</b>	Undetermined.

<b>Flash point:</b>	Not Applicable. Flammable limits: LEL/LFL is <u>Not Applicable</u> ; UEL/UFL is <u>Not Applicable</u>
<b>Evaporation rate:</b>	No applicable information was found.
<b>Fire hazard:</b>	Although the components have not been tested for fire hazard and explosion data, being water-based, they are not expected to be fire hazards, but some of the kit packaging materials may burn under fire conditions.
<b>Vapor/vapour pressure:</b>	No applicable information was found.
<b>Vapor/vapour density:</b>	No applicable information was found.
<b>Relative density:</b>	Approximately 1.
<b>Solubility:</b>	Miscible in water.
<b>Partition coefficient (n-octanol/water):</b>	No applicable information was found.
<b>Auto igniting:</b>	Product is not known to be self-igniting.
<b>Decomposition temperature:</b>	No applicable information was found.
<b>Viscosity:</b>	No applicable information was found.
<b>Danger of explosion:</b>	Product is not known to present an explosion hazard.
No other standard characteristics applicable to the identification or hazards of the product are known.	

### SECTION 10: STABILITY AND REACTIVITY INFORMATION

NOTE: Chemical reactions that could result in a hazardous situation (e.g., generation of flammable or toxic chemicals, fire, or detonation) are listed here. Although not intended to be complete, an overview of important reactions involving common chemicals is provided to assist in the development of safe work practices.

Chemical Stability / Reactivity:	Components are stable with no known inherent significant reactivity.
Conditions to Avoid:	None known when used as intended.
Materials to Avoid:	None known when used as intended.
Hazardous Decomposition Products:	Oxides of carbon or nitrogen may form when heated to decomposition.
Hazardous Polymerization:	Has not been reported to occur.

### SECTION 11: TOXICOLOGICAL INFORMATION -- GENERAL COMPOSITE

Refer to Sections 2 and 3 for the kit component concentrations. The composite toxicological information for this product is:

#### Acute Health Effects

Acute Toxicity:	No significant toxic effect known.
Primary Irritant Effect:	No significant irritant effect known.
Serious Eye Damage / Irritation:	No applicable information was found.
STOT-Single Exposure:	No applicable information was found.
Aspiration Hazard:	No applicable information was found.
Other Acute Health Effects:	No significant other acute health effect known.

#### Chronic Toxicity

Respiratory or Skin Sensitization:	No sensitization effect known.
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Carcinogenicity:	No carcinogenic effect known. No component, mixture or constituent has been classified as a carcinogen by NTP, IARC, or OSHA.
Germ Cell Mutagenicity:	No applicable information was found.
Reproductive hazard:	No reproductive toxic effect known.
STOT-Repeated Exposure:	No applicable information was found.

Additional Toxicological Information: To the best of our knowledge, the chemical, physical, and toxicological properties have NOT been thoroughly investigated for some of the component chemicals and/or mixtures.

### SECTION 12: ECOLOGICAL INFORMATION

This product was not tested. The following assessment is based on information for the ingredients.	
Ecotoxicity:	<p><b>Concentrated Citric acid</b> [CAS#: 77-92-9]*:</p> <p>Toxicity to fish mortality LC<sub>50</sub> - <i>Leuciscus idus melanotus</i> - 440 mg/l - 48 h            Method: OECD Test Guideline 203</p> <p>Toxicity to daphnia and other aquatic invertebrates: static test - <i>Daphnia magna</i> (Water flea) - 1,535 mg/l - 24 h  <i>*Source: Raw Material vendor SDS, CCOHS databases and/or regulatory research</i></p>
Persistence and degradability:	This information is not available.
Bioaccumulation potential:	This information is not available.
Mobility in soil:	This information is not available.
PBT and vPvB assessment:	This information is not available.
Other adverse effects:	May be hazardous for drinking water and toxic to aquatic organisms by pH modification if not neutralized. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Avoid release to the environment.

### SECTION 13: DISPOSAL CONSIDERATIONS

Disposal of hazardous and/or laboratory wastes, product, or packaging must be conducted in accordance with all applicable local, regional, national, and international regulations. This section specifies the general and United States RCRA requirements. Processing, use, or contamination of the kit components may change waste management requirements and options. Contact your Environmental Health & Safety Office for your specific disposal procedures.

**Recommended Product Disposal:** *Substrate Buffer* (pH ~4.0) wastes should be neutralized to pH 6-8 for safe sewer disposal; check your local, regional, national, and international ordinances accordingly. If the final pH measures ≤ 2, it requires disposal as a corrosive material in a RCRA approved waste facility (or equivalent); the US RCRA Waste disposal Code for this waste, if not neutralized, is D002; check your international, national, and regional ordinances accordingly.

Do not allow undiluted product or large quantities of it to reach ground water or water course.

**Recommended Unclean Packaging Disposal:** Dispose in accordance with all applicable local, regional, national, and international regulations.

### SECTION 14: TRANSPORT INFORMATION

Shipping of product, packaging, and waste must be conducted in accordance with all applicable local, regional, national, and international regulations. Processing, use, or contamination of the kit components may change shipping requirements and options. Contact your Environmental Health & Safety Office for your specific shipping procedures.

**Recommended Product Multi-Modal Transportation:** According to US DOT, IMDG, IATA, and UN “Model Regulations”, the product must be transported as follows: No known transport restrictions.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable.

**SECTION 15: REGULATORY INFORMATION**

**Composite HMIS Rating:** Health: 1 Flammability: 0 Reactivity: 0

**Carcinogenicity Categories:**

No component, mixture, or constituent has been classified as a carcinogen by NTP (National Toxicity Program), IARC (International Agency for Research on Cancer), TLV-CAR (Threshold Limit Value established by ACGIH), or OSHA (Occupational Health and Safety Administration, U.S. Department of Labor).

**National Regulations – Other Domestic / Foreign Laws:**

**Hazard communication compliance** – This SDS contains the required information for preparation in accordance with the following GHS-based global regulations:

1. **United States** – Occupational Safety Health Administration *Hazard Communication Standard 29 CFR 1910.1200 (US HCS)*
2. **Taiwan** – Regulation **Lao-An-3-Tzu-No. 0960145703** / Published National Standard **CNS 15030**
3. **People’s Republic of China** – National Standard **GB/T 17519-2013, GB 30000-2013**
4. **New Zealand** – *Hazardous Substances and New Organisms Act 1996 (HSNO), Hazardous Substances (Classification) Regulations 2001 and Thresholds and Classifications January 2012* (as published in 2008)  
*Composite HSNO Hazard Class:* Based on available data, the classification criteria are not met.
5. **Mexico** – **Standard NMX-R-019-SCFI-2011**
6. **Korea** – **Public Notice 2013-37 Standard for Classification and Labeling of Chemical Substances and Material Safety Data Sheets**
7. **Japan** – Industrial Safety and Health Law (ISHL) National Standard **JIS Z7252, JIS Z7253**
8. **European Community (EC)** – applicable **CLP** related regulations (**2010/453/EC, 2008/1272/EC, 2006/1907/EC** etc.)
9. **Canada** – Standard *Workplace Hazardous Materials Information System (WHMIS-GHS) Canadian Standard* for the hazard classification criteria for this product.  
*Composite WHMIS Hazards:* Based on available data, the classification criteria are not met.
10. **Brazil** – Regulation **NRB 14725**
11. **Australia** – Code of Practice *Preparation of Safety Data Sheets for Hazardous Chemicals* under Section 274 of the **Work Health and Safety (WHS) Act**.
12. Analogous GHS-based global regulations

**Inventory status**

<b>Country(s) or region</b>	<b>Inventory name</b>	<b>In Compliance (yes/no)*</b>
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS) or Europe European List of Notified Chemical Substances (ELINCS)	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	inventory (CSNN):	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\* A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**Regulation (EC) No. 1907/2006 (REACH):**

*Chemicals included in the Candidate List of Substances of Very High Concern (SVHC):* None

*REACH No.:* A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.



### United States SARA:

*SARA 302 (extremely hazardous substance) components:* The following components are subject to reporting levels established by SARA Title III, Section 302: **Hydrogen peroxide**, CAS# 7722-84-1; Revision Date: 1993-04-24 (< 0.1%)

*SARA 313 components:* This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**California Proposition 65:** The Product does not contain listed substances.

## SECTION 16: OTHER INFORMATION

### Hazard statement abbreviation(s):

Acute Tox. – skn.	Acute toxicity – skin contact (dermal)
Skin Irrit.	Skin irritation
Eye Irrit.	Eye irritation
Fla. Liq.	Flammable liquid
Cat.	Category
H227	Combustible Liquid.
H313	May be harmful in contact with skin.
H316	Causes mild skin irritation.
H319	Causes serious eye irritation.
P210	Keep away from heat.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P403 + P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents and container in accordance to local, regional, national and international regulations.
P501	Dispose of contents/ container to an approved waste disposal plant.

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This test kit should be handled only by qualified personnel trained in laboratory procedures and familiar with their potential hazards. Specific warnings are given in the instructions for use. The absence of a specific warning should not be interpreted as an indication of safety.

These are Replacement, optional or separately purchased component, identical to those found in the products, which are to be used exclusively with the Bio-Rad Laboratories products listed in Section 1.

**Chemical safety assessment:** Mixtures covered in this SDS were classified using the US HCS, EC CLP, and/or UN Globally Harmonized System of Classification and Labeling of Chemicals (GHS) Fourth edition unless otherwise specified.

Sources of key data used to compile the Safety Data Sheet:

Raw Material Vendor Safety Data Sheets  
 United Nations (UN) Globally Harmonized System (GHS)  
 United States OSHA Hazard Communication Standard (US HCS) 1910.1200  
 Canadian Workplace Hazardous Materials Information System (WHMIS)  
 Mexican Standard (NMX-R-019-SCFI-2011) [regulatory translation and summaries]  
 European Commission (EC) Regulations 2008/1272/EC, 2010/453/EC, 2006/1907/EC (EC CLP)  
 Australian Code of Practice – Preparation of Safety Data Sheets for Hazardous Chemicals (Section 274 of the *Work Health and Safety Act*)  
 New Zealand – Hazardous Substances and New Organisms Act 1996 (HSNO)  
 The People's Republic of China National Standard GB/T 17519-2013, GB 30000-2013 [regulatory translation if available and summaries]  
 Taiwan Regulation Lao-An-3-Tzu-No. 0960145703 / Published National Standard CNS 15030 [regulatory translation if available / summaries]  
 Korean Public Notice 2008-26 [regulatory translation if available and summaries]  
 Japanese Industrial Standard JIS Z7252, JIS Z7253 [regulatory translation if available and summaries]  
 Registry of Toxic Effects of Chemical Substances (RTECS)  
 Canadian Centre for Occupational Health and Safety (CCOHS) *CHEMINFO databases, etc.*  
 International Agency for Research on Cancer (IARC)  
 American Conference of Governmental Industrial Hygienists (ACGIH)  
 Occupational Safety and Health Administration, U.S. Department of Labor (OSHA)  
 National Toxicity Program (NTP)  
 National Institute for Occupational Safety and Health (NIOSH)  
 World Health Organization. *Laboratory Biosafety Manual*  
 CDC/NIH *Biosafety in Microbiological and Biomedical Laboratories*

*Australian Inventory of Chemical Substances (ACIS) Listing  
California Proposition 65*

Key / legend to abbreviations and acronyms used in the safety data sheet:

ACGIH – American Conference of Governmental Industrial Hygienists  
 ACIS – Australian Inventory of Chemical Substances  
 ANSI – American National Standards Institute  
 CAS – Chemical Abstracts Service  
 CCOHS – Canadian Centre for Occupational Health and Safety  
 CDC – Centers for Disease Control, USA  
 CNS – Central Nervous System  
 DGSM – Dangerous Goods Safety Management Act  
 DOT – Department of Transportation, USA  
 EC<sub>50</sub> – half maximal effective concentration  
 EC CLP – European Commission regulation for the Classification, Labeling and Packaging of chemical substances and mixtures  
 EU – European Union  
 GHS – Globally Harmonized System  
 HNO – Hazard Not Otherwise Classified  
 HSNO – Hazardous Substances and New Organisms Act 1996 (New Zealand)  
 IARC – International Agency for Research on Cancer  
 IATA – International Air Transport Association  
 ICAO – International Civil Aviation Organization  
 IDLH – Immediately Dangerous to Life or Health  
 IMDG – International Maritime Dangerous Goods  
 IPCS – International Programme on Chemical Safety  
 ISHA – Industrial Safety and Health Act  
 LC<sub>50</sub> – median lethal concentration, 50%  
 LD<sub>50</sub> – median lethal dose, 50%  
 MSDS – Material Safety Data Sheet  
 NIOSH – National Institute for Occupational Safety and Health  
 NTP – National Toxicity Program  
 OEL – Occupational Exposure Limit  
 PEL – Permissible Exposure Limit  
 ppm – parts per million  
 RTECS – Registry of Toxic Effects of Chemical Substances  
 SDS – Safety Data Sheet  
 STEL – Short Term Exposure Limit  
 STOT – Specific Target Organ Toxicity  
 TCCA – Toxic Chemical Control Act  
 TLV/TWA – Threshold Limit Value / Time-Weighted Average  
 UN – United Nations  
 US EPA – United States Environmental Protection Agency, USA  
 US HCS – Hazard Communication Standard, USA  
 US OSHA – Occupational Safety and Health Administration, U.S. Department of Labor  
 WHMIS – Workplace Hazardous Materials Information System, Canada  
 WHO – World Health Organization (United Nations)

*Additional information:* The lists that were valid during the creation were used as basis.

**This Revision:** Updated, reformatted, and added new GHS information.

## Bio-Rad Laboratories:

**Department issuing SDS:** Environmental Health and Safety.

**Contact for general SDS information:** Seattle Operations, Environmental Health & Safety, 6565 185th Ave. NE, Redmond, WA 98052, USA, Phone: 425-881-8300 (8 am to 5 pm PT), [ro-sds@bio-rad.com](mailto:ro-sds@bio-rad.com)

**Customer support contact:** Clinical Diagnostics Group, 4000 Alfred Nobel Drive, Hercules, CA 94547, USA  
 Phone: 1-800-224-6723, [www.bio-rad.com/diagnostics](http://www.bio-rad.com/diagnostics)

**Contact 24/7/365:** 1-800-424-9300

**Contact Local Bio-Rad Agents for general information:**

**Australia,** Bio-Rad Laboratories Pty. Ltd., Level 5, 446 Victoria Road, Gladesville NSW 2111 • Phone 61-2-9914-2800 • Telefax 61-2-9914-2888 •  
**24h/365d:** 61-2-9914-2800  
**Austria,** Bio-Rad Laboratories Ges.m.b.H., Hummelgasse 88/3-6, A-1130 Vienna • Phone 43-1-877-8901 • Telefax 43-1-876-5629 • **24h/365d:** 43-1-877-89 01  
**Belgium,** Bio-Rad S.A.-N.V. Begoniastraat 5, B-9810 Nazareth Eke • Phone 32-9-385-5511 • Telefax 32-9-385-6554 • **24h/365d:** 09-385-5511  
**Brazil,** Bio-Rad Laboratórios Brasil Ltda, Rua Alfredo Albano da Costa, 100, sl 1, 2 e 3, Lagoa Santa, CEP: 33.400-000 • Phone +55 (31)3689-6600 •  
 Telefax +55 (31)3689-6611 • **24h/365d:** (11) 99118 7957  
**Canada,** Bio-Rad Laboratories, Ltd., 2403 Guénette Street, Montréal, Québec H4R 2E9 • Phone 1-514-334-4372 • Telefax 1-514-334-4415 •  
**24h/365d:** 514-334-4372

- China**, Bio-Rad Laboratories Shanghai Ltd. 3rd Floor, #18 Dong Fang Road, Bldg E, Poly Plaza, Pudong, Shanghai, PRC 200120 • Phone 86-21-61698500 • Telefax 86-21-61698599 • **24h/365d**: 86-21-63052255
- Czech Republic**, Bio-Rad spol. s r.o., Nad ostrovem 1119/7, 147 00 Prague 4 • Phone 420-241-430-532 • Telefax 420-241-431-642 • **24h/365d**: 224 919 293
- Denmark**, Bio-Rad Laboratories, Symbion Science Park, Fruebjergvej 3, DK-2100 Copenhagen East • Phone +45-4452-1000 • Telefax +45-4452-1001 • **24h/365d**: +45 4452 1000
- Finland**, Bio-Rad Laboratories, Linnanharrankuja 16, FIN-00950 Helsinki • Phone 358-9-804-22-00 • Telefax 358-9-7597-5010 • **24h/365d**: +358 9 804 2200
- France**, Bio-Rad, 3 boulevard Raymond Poincaré, 92430 Marnes-la-Coquette • Phone 33-1-47-95-60-00 • Telefax 33-1-47-41-91-33 • **24h/365d**: +33 (0)1 47 95 60 00
- Germany**, Bio-Rad Laboratories GmbH, Heidemannstrasse 164, D-80939 Munich • Phone +49-(0)89-318-840 • Telefax +49-(0)89-318-84100 • **24h/365d**: 0049-89-31884-0
- Greece**, Bio-Rad Laboratories M.E.P.E., 2-4 Mesogeion Street, Fourth Floor 115 27 Athens • Phone 30-210-7774396 • Telefax 30-210-7774376
- Hong Kong**, Bio-Rad Pacific Ltd., Unit 1101, 11/F DCH Commercial Centre, 25 Westlands Road, Quarry Bay • Phone 852-2789-3300 • Telefax 852-2789-1290 • **24h/365d**: 852-2789-3300
- Hungary**, Bio-Rad Hungary Ltd., H-1082 Budapest, Futo Street 47-53, Hungary • Phone +36-1-459-6100 • Telefax +36-1-459-6101 • **24h/365d**: 36 1 459 6100
- India**, Bio-Rad Laboratories (India) Pvt. Ltd., Bio-Rad House, 86-87, Udyog Vihar, Phase IV, Gurgaon, Haryana 122 015 • Phone 1-800-180-1224 • Telefax 91-124-2398115 • **24h/365d**: 91-124-2398112/113/114
- Israel**, Bio-Rad Laboratories Ltd., 14 Homa Street, New Industrial Area, Rishon Le Zion 75655 • Phone 972-3-9636050 • Telefax 972-3-9514129 • **24h/365d**: 972-3-951-4127
- Italy**, Bio-Rad Laboratories S.r.l., Via Cellini 18/A, 20090 Segrate, Milan • Phone +39-02-216091 • Telefax +39-02-21609553 • **24h/365d**: 02-216091
- Japan**, Bio-Rad Laboratories K.K., Tennoz Central Tower 20F, 2-2-24 Higashi-Shinagawa, Shinagawa-ku, Tokyo 140-0002 • Phone 81-3-6361-7070
- Korea**, Bio-Rad Korea Ltd., 10th Floor, Hyunjuk Building, 832-41, Gangnam-gu, Seoul 135-080 • Phone 82-2-3473-4460 • Telefax 82-2-3472-7003 • **24h/365d**: 852-2789-330
- Mexico**, Bio-Rad, S.A., Avenida Eugenia 197, Piso 10-A, Col. Narvarte, C.P. 03020 Mexico, D.F. • Phone +52 (55) 54 88 76 70 • Telefax +52 (55) 1107-7246 • **24h/365d**: + 52 1 (55) 20 46 47 77
- The Netherlands**, Bio-Rad Laboratories B.V., Fokkerstraat 2-8, 3905 KV Veenendaal • Phone +31-318-540666 • Telefax +31-318-542216 • **24h/365d**: 31-318-540666
- New Zealand**, Bio-Rad New Zealand, 189 Bush Road Unit B, Albany, Auckland • Phone 64-9-415-2280 • Telefax 64-9-415-2284 • **24h/365d**: 64-9-415-2280
- Norway**, Bio-Rad Laboratories, Nydalsveien 33, 0484 Oslo • Phone +47-23-38-41-30 • Telefax +46(0)8-5551-2780 • **24h/365d**: 47 23 38 41 30
- Poland**, Bio-Rad Polska Sp. z o.o., Nakielska Str. 3, 01-106 Warsaw • Phone 48-22-3319999 • Telefax 48-22-3319988 • **24h/365d**: 48 (22) 331 99 85
- Portugal**, Bio-Rad Laboratories, Lda., Edificio Prime, Ave. Quinta Grande, 53 – Fração 3B Alfragide 26114-521 Amadora • Phone 351-21-472-7700 • Telefax 351-21-472-7777 • **24h/365d**: 351-21-472-7700
- Russia**, Bio-Rad Laboratorii, Russian Federation, Moscow, Varshavskoe sh., 9, Bldg., 1B • Phone: +7-495-721-1404 • Telefax +7-495-721-1412
- Singapore**, Bio-Rad Laboratories (Singapore) Pte. Ltd., 27 International Business Park, #01-02 iQuest @IBP, Singapore 609924 • Phone 65-6415-3170 • Telefax 65-6415-3189 • **24h/365d**: 65-6415-3188 • **24h/365d**: 65-6415-3188
- South Africa**, Bio-Rad Laboratories (Pty) Ltd., 34 Bolton Road, Parkwood, Johannesburg 2193 • Phone 27-11-442-85-08 • Telefax 27-11-442-85-25
- Spain**, Bio-Rad Laboratories, S.A., C/ Caléndula, 95, Edificio M. Miniparc II, El Soto de la Moraleja, 28109 Madrid • Phone 34-91-590-5200 • Telefax 34-91-590-5211 • **24h/365d**: 34-91-590-5200
- Sweden**, Bio-Rad Laboratories A.B., Box 1097, Solna Strandväg 3, SE-171 54, Solna • Phone +46-8-555-127-00 • Telefax +46-8-555-127-80 • **24h/365d**: 46-8-55 51 27 00
- Switzerland**, Bio-Rad Laboratories AG, Pra Rond 23 CH-1785 Cressier • Phone +41 (0)26-674-55-05/06 • Telefax +41 (0)26-674-52-19 • Email: [swiss@bio-rad.com](mailto:swiss@bio-rad.com) • **24h/365d**: 41-61-7179555
- Taiwan**, Bio-Rad Laboratories Taiwan Ltd., 14F-B, No. 126 Nan-King East Road, Sec. 4, Taipei, Taiwan 10546 R.O.C. • Phone 886-2-2578-7189 • Telefax 886-2-2578-6890
- Thailand**, Bio-Rad Laboratories Ltd., 1st & 2nd Floor, Lumpini I Bldg., 239/2 Rajdamri Rd., Lumpini, Pathumwan, Bangkok 10330 • Phone 662-651-8311 • Telefax 662-651-8312
- United Kingdom**, Bio-Rad Laboratories Ltd., Bio-Rad House, Maxted Road, Hemel Hempstead, Herts HP2 7DX • Phone +44 (0)20-8328-2000 • Telefax +44 (0)20-8328-2550 • **24h/365d**: 020-8328-2000

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