







**SAFETY DATA SHEET (SDS)****SECTION 1: IDENTIFICATION OF PRODUCT (MIXTURE) AND SUPPLIER**

<b>Product Name:</b>	<b>GS HIV-1 Western Blot HUMAN IMMUNODEFICIENCY VIRUS TYPE I</b>
<b>Product Number:</b>	<b>32508</b> (40 tests) Catalog number(s) for replacement components that can be obtained for use with this kit, and which are covered by this SDS include: <b>32574</b> (refer to Section 2).
<b>Intended Use:</b>	The GS HIV-1 Western Blot Kit is an <i>in vitro</i> qualitative assay for the detection and identification of antibodies to Human Immunodeficiency Virus Type 1 (HIV-1) in human serum, plasma or dried blood spots. It is intended for use with persons of unknown risk as an additional, more specific test on human serum, plasma or dried blood spot specimens found to be repeatedly reactive using a screening procedure, such as Enzyme-Linked Immunosorbent Assay (ELISA), and as an additional, more specific test for use with serum, plasma or dried blood spot specimens obtained from subjects found to be reactive using rapid HIV-1 tests. For <i>in vitro</i> diagnostic use.
<b>Manufactured by:</b>	<b>Bio-Rad Laboratories, Inc.</b>
<b>Address:</b>	6565 185th Avenue NE Redmond, WA 98052-5039, USA
<b>Website:</b>	<a href="http://www.bio-rad.com">www.bio-rad.com</a>
<b>Phone Number:</b>	1-800-2-BIORAD (1-800-224-6723); or 1-425-881-8300 (daytime PT)
<b>SDS e-mail contact:</b>	<a href="mailto:ro-sds@bio-rad.com">ro-sds@bio-rad.com</a>
<b>Technical Information Contacts:</b>	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. <i>Refer to section 16 for non-US local Bio-Rad agent contact information.</i>
<b>Authorized Representative in the European Community:</b>	<b>FRANCE: Bio-Rad</b> 3 boulevard Raymond Poincaré 92430 Marnes-la-Coquette Phone: +33 (0) 1 47 95 60 00 / Fax: +33 (0) 1 47 41 91 33 <a href="mailto:fds-msds.fr@bio-rad.com">[fds-msds.fr@bio-rad.com]</a>
<b>Emergency Phone Number:</b>	<b>This SDS is listed with CHEMTREC 1-800-424-9300 (US) / 001-703-527-3887</b> (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.

<b>Component*</b>	<b>Contents</b>
<b>R1. HIV-1 Western Blot Strips (40),</b> 2 packages of 20 strips    <b>WARNING</b>	- Package contains 20 strips, sufficient for 20 tests. Nitrocellulose strips preblotted with resolved HIV-1 viral proteins. - Blotting paper buffer is preserved with: - Preserved with <b>0.1% ProClin 300</b> (0.003% active ingredient), EC Index No 613-167-00-5 with CAS# 55965-84-9. GHS \ US HCS \ EC CLP Classification: WARNING; H317; P280; P302 + P352, P333 + P313; P501. - Preserved with <b>0.1% sodium azide</b> [NaN <sub>3</sub> ], CAS# 26628-22-8 and EC No 247-852-1. Not subject to GHS, US HCS, EC CLP and analogous global GHS-based regulatory requirements without Cat 5 Acute Toxic designations in this product mixture and concentration.

<p><b>C0. Western Blot Negative Control,</b> 1 vial (0.2 mL)</p>  <p><b>WARNING</b></p>	<ul style="list-style-type: none"> <li>- Normal Human serum / plasma, non-reactive for HBsAg and antibodies to HIV1/2 and HCV.</li> <li>- Preserved with <b>0.5% ProClin 300</b> (0.015% active ingredient), EC Index No 613-167-00-5 with CAS# 55965-84-9. GHS \ US HCS \ EC CLP Classification: WARNING; GHS07; H317; P280; P302 + P352, P333 + P313; P501.</li> <li>- Preserved with <b>0.1% sodium azide</b> [NaN<sub>3</sub>], CAS# 26628-22-8 and EC No 247-852-1. Not subject to GHS, US HCS, EC CLP and analogous global GHS-based regulatory requirements without Cat 5 Acute Toxic designations in this product mixture and concentration.</li> </ul>
<p><b>C1. HIV-1 Western Blot Low Positive Control,</b> 1 vial (0.2 mL)</p>  <p><b>WARNING</b></p>	<ul style="list-style-type: none"> <li>- Heat inactivated Human serum / plasma containing antibodies reactive to HIV-1.</li> <li>- Non-reactive for HBsAg and antibody to HCV.</li> <li>- Preserved with <b>0.5% ProClin 300</b> (0.015% active ingredient), EC Index No 613-167-00-5 with CAS# 55965-84-9. GHS \ US HCS \ EC CLP Classification: WARNING; GHS07; H317; P280; P302 + P352, P333 + P313; P501.</li> <li>- Preserved with <b>0.1% sodium azide</b> [NaN<sub>3</sub>], CAS# 26628-22-8 and EC No 247-852-1. Not subject to GHS, US HCS, EC CLP and analogous global GHS-based regulatory requirements without Cat 5 Acute Toxic designations in this product mixture and concentration.</li> </ul>
<p><b>C2. HIV-1 Western Blot High Positive Control,</b> 1 vial (0.2 mL)</p>  <p><b>WARNING</b></p>	<ul style="list-style-type: none"> <li>- Heat inactivated Human serum / plasma containing antibodies reactive to HIV-1.</li> <li>- Non-reactive for HBsAg and antibody to HCV.</li> <li>- Preserved with <b>0.5% ProClin 300</b> (0.015% active ingredient), EC Index No 613-167-00-5 with CAS# 55965-84-9. GHS \ US HCS \ EC CLP Classification: WARNING; GHS07; H317; P280; P302 + P352, P333 + P313; P501.</li> <li>- Preserved with <b>0.1% sodium azide</b> [NaN<sub>3</sub>], CAS# 26628-22-8 and EC No 247-852-1. Not subject to GHS, US HCS, EC CLP and analogous global GHS-based regulatory requirements without Cat 5 Acute Toxic designations in this product mixture and concentration.</li> </ul>
<p><b>R2. Western Blot Specimen Diluent/Wash (5X),</b> 2 bottles (100 mL) Catalog No. 32574</p>  <p><b>WARNING</b></p>	<ul style="list-style-type: none"> <li>- <b>Tris buffered saline solution</b> with milk proteins, <b>Tween 20</b> [C<sub>58</sub>H<sub>114</sub>O<sub>26</sub>], CAS# 9005-64-5, EC No 585-580-06-X and dilute (≤ <b>0.2%</b>) <b>EDTA</b>, disodium salt, dihydrate, CAS# 6381-92-6, EC No 205-358-3. Not subject to GHS, US HCS, EC CLP and analogous global GHS-based regulatory requirements in this product mixture and concentration.</li> <li>- Preserved with <b>0.5% ProClin 300</b> (0.015% active ingredient), EC Index No 613-167-00-5 with CAS# 55965-84-9. GHS \ US HCS \ EC CLP Classification: WARNING; GHS07; H317; P280; P302 + P352, P333 + P313; P501.</li> </ul>
<p><b>R3. HIV-1 Western Blot Conjugate,</b> 1 bottle (80 mL)</p>  <p><b>WARNING</b></p>	<ul style="list-style-type: none"> <li>- Anti-human IgG, IgA and IgM (Goat) alkaline phosphatase conjugated solution with protein stabilizers.</li> <li>- Preserved with <b>0.5% ProClin 300</b> (0.015% active ingredient), EC Index No 613-167-00-5 with CAS# 55965-84-9. GHS \ US HCS \ EC CLP Classification: WARNING; GHS07; H317; P280; P302 + P352, P333 + P313; P501.</li> <li>- Preserved with <b>0.1% sodium azide</b> [NaN<sub>3</sub>], CAS# 26628-22-8 and EC No 247-852-1. Not subject to GHS, US HCS, EC CLP and analogous global GHS-based regulatory requirements without Cat 5 Acute Toxic designations in this product mixture and concentration.</li> </ul>
<p><b>R4. Western Blot Color Development Reagent,</b> 1 bottle (100 mL)</p>	<ul style="list-style-type: none"> <li>- <b>5-bromo-4-chloro-3-indolyl phosphate (BCIP)</b> with ≤ <b>0.5% nitro blue tetrazolium (NBT)</b> in an organic base/tris buffer with ≤ <b>5% 1,2-propanediol</b>, CAS# 57-55-6, EC No 200-338-0 [pH 9.3]. Not subject to GHS, US HCS, EC CLP and analogous global GHS-based regulatory requirements in this product mixture and concentration.</li> </ul>
<p><b>Disposable Reaction Trays</b> 8 trays</p>	<ul style="list-style-type: none"> <li>- Disposable, slotted reaction trays.</li> <li>- Lids.</li> </ul>

\* Replacement component catalog numbers are provided in this column whenever available.

**Markings according to the United Nations (UN) Globally Harmonized System (GHS), United States Hazard Communication Standard (US HCS), European Community (EC) 2008/1272/EC (EC CLP) guidelines and analogous GHS-based global regulations:** This product has been conservatively classified and labeled in accordance with applicable United Nations (UN) GHS, United States Hazard Communication Standard (US HCS), related European Community (EC) 2008/1272/EC (EC CLP) guidelines and applicable analogous GHS-based global regulations. The following regulated hazardous chemical concentrations are found in product component(s):

**Component R1 - 0.1% ProClin 300 and Component C0, C1, C2, R2, R3 - 0.5% ProClin 300** [ $\leq 0.015\%$  active ingredients – reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one (C<sub>4</sub>H<sub>4</sub>ClNOS; CAS# 26172-55-4, EC No 247-500-7) and 2-methyl-2H-isothiazol-3-one (C<sub>4</sub>H<sub>5</sub>NOS; CAS# 2682-20-4, EC No 220-239-6) (3:1)], EC Index No 613-167-00-5 with CAS# 55965-84-9.

**Comprehensive GHS Based Classification: Skin Sensitizer Category 1**



Label(s):

Signal Word: **WARNING**

Label Hazard Statements:

**H317 May cause an allergic skin reaction.**

Precautionary Statements (statements for product intended use and as codified on the product label):

P280	Wear protective gloves / protective clothing / eye protection / face protection.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P501	Dispose of contents and container in accordance to local, regional, national and international regulations.

Supplemental Precautionary Statements (additional precautions to consider relative to specific customer use):

P261	Avoid breathing mist / vapors/vapours / spray.
P272	Contaminated work clothing should not be allowed out of the workplace.

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

**NOTE:** 0.1% Sodium Azide concentration falls under the UN GHS Cat 5 Acute Toxic which is not recognized in much of the world. [Acute toxic Cat. 5 rating would be: Warning; H303, H313; P312].

**SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS**

The following information is furnished for those 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. 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: Propylene glycol**

Chemical concentrations found in this product: **≤ 5% in R4**

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

CAS#: 57-55-6 (100%)	LD <sub>50</sub> (oral-rat): 20,000 mg/kg (100%)
EC No: 200-338-0 (100%)	LC <sub>50</sub> (inhalation-rat): NE
RTECS#: TY2000000 (100%)	LD <sub>50</sub> (skin-rabbit): 20,800 mg/kg (100%)
Index No: NE	LC <sub>50</sub> (96 hr-fish): NE (100%)
Chemical Formula: C <sub>3</sub> H <sub>8</sub> O <sub>2</sub> (100%)	Flash Point: 217°F / 103°C (100%)
Molecular weight: 76.09 g/mol (100%)	Flammable limits: LEL/LFL is <u>2.6%</u> ; UEL/UFL is <u>12.5%</u> vv in air.
Synonyms/Trade Names: 1,2,-Propanediol	

**Raw Material GHS / US HCS / EC CLP Classification (100%):** Not a dangerous substance according to GHS, US HCS, EC CLP and analogous global GHS-based regulatory requirements.

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

**Chemical Ingredient: ProClin 300**

Chemical concentrations found in this product: **0.5% (0.015% active ingredient) in C0, C1, C2, R2 and R3**

Chemical concentrations found in this product: **≤ 0.1% (≤ 0.003% active ingredient) in R1**

Hazardous ingredient concentration in raw material:

**60-100% Glycols;**

**1-5% Mixture (3:1) of 5-Chloro-2-methyl-4-isothiazolin-3-one** (C<sub>4</sub>H<sub>5</sub>NOS; CAS# 2682-20-4, EC# 220-239-6)  
and **2-Methyl-2H -isothiazol-3-one** (C<sub>4</sub>H<sub>4</sub>CINOS; CAS# 26172-55-4, EC# 247-500-7)

CAS#: 55965-84-9

Index No: 613-167-00-5

**Data for chemical used in the product (concentration tested):**

RTECS#: NE

Synonyms/Trade Names: **Synonyms/Trade Names:** 5-Chloro-2-methyl-4-isothiazolin-3-one solution; Kathon 300; Isothiazolinone chloride solution

pH value: 4.1 at 100 g/L (concentrated solution)

Flash Point: 244° F / 118° C (concentrated solution)

LD<sub>50</sub> (oral-rat): 862 mg/kg (concentrated solution)

LD<sub>50</sub> (skin-rabbit): 2,800 mg/kg (concentrated solution)

LC<sub>50</sub> (inhalation-rat): NE

LD<sub>50</sub> (skin-rabbit): NE

Skin corrosion/irritation - rabbit – Corrosive (concentrated solution)

Serious eye damage/eye irritation - rabbit - Corrosive to eyes (concentrated solution)

Respiratory or skin sensitization - May cause allergic skin reaction (concentrated solution)

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

**DANGER!**

Acute Tox. – oral Cat. 4, Skin Corr. Cat. 1B, Eye Damage.1, Skin. Sens. Cat.1, Aquatic Acute Cat. 1, Aquatic Chronic Cat. 1

H302, H314, H317, H410

P261, P264, P270, P272, P273, P280, P301 + P312 + P330, P301 + P330 + P331,

P303 + P361 + P353, P305 + P351 + P338 + P310, P333 + P313, P363, P391, P405, P501



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

**Chemical Ingredient Data / Information**

**Chemical Ingredient: Sodium azide**

Chemical concentrations found in this product: **0.1% in Co, C1, C2, R1 and R3.**

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

CAS#: 26628-22-8 (100%)	LD <sub>50</sub> (oral-rat): 27 mg/kg (100%)
EC No: 247-852-1 (100%)	LC <sub>50</sub> (inhalation-rat): 37 mg/m <sup>3</sup> (100%)
Index No: 011-004-00-7 (100%)	LD <sub>50</sub> (skin-rat): 50 mg/kg (100%)
RTECS#: VY8050000 (100%)	Fish LC <sub>50</sub> – Lepomis macrochirus (Bluegill) – 0.68 mg/l – 96 h (100%)
Chemical Formula: NaN <sub>3</sub> (100%)	
Molecular weight: 65.01g/mol (100%)	
Synonyms/Trade Names: Azide, sodium; Azoture de sodium; Azydek sodu; NSC 3072; Kazoe; Natriumazid; Natriummazide; NCI-C06462; Nemazyd; Sodium azide; Sodium, azoture de; Sodium, azoturo di, Smite; U-3886;	



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

**DANGER!**

Acute Tox. – oral. Cat. 2, Acute Tox. – skn. Cat. 1, Aquatic Acute Cat. 1, Aquatic Chronic Cat. 1  
 H300 + H310, H410  
 P264, P273, P280, P302 + P350, P310, P501



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

Biological Ingredient	Data / Information
<p><b>NP-40 Inactivated HIV-1 virus</b></p> 	<p><b>NP-40 Inactivated Human Immunodeficiency Virus, type 1 (HIV-1) virus</b>, though verified to be non-infectious, should be handled as if capable of transmitting infectious disease, with Universal Precautions in a Biosafety Level 2 lab, applying the guidelines from the current CDC/NIH <i>Biosafety in Microbiological and Biomedical Laboratories</i> or WHO <i>Laboratory Biosafety Manual</i>. Employ aseptic technique for personal protection and to avoid product contamination; use of a Biosafety Cabinet (BSC) may be warranted or desired in certain situations. Avoid splashing, spills and the generation of aerosols. Secure in secondary containment with proper biohazard labeling. Do not inhale mists or aerosols; avoid contact with skin, eyes, mucous membranes and clothing. In case of contact with eyes, immediately rinse with copious water and seek medical attention. Employ decontamination procedures, with appropriate decon agent/disinfectant (typically a 1:10 dilution of household bleach, 70-80% ethanol or isopropanol, an iodophor like 0.5% Wescodyne Plus (EPA Reg. #4959-16), an o-phenylphenol/amyphenol such as 0.8% Vesphene (EPA Reg. #1043-87), or equivalent) before discarding any materials utilized or returning equipment used to general use. Dispose of this material in accordance with local, regional, national and international regulations. Handle appropriately with the requisite Good Laboratory Practices, <i>Standard</i> and <i>Universal Precautions</i>.</p>
<p><b>Human Serum</b> [reactive and non-reactive in C0, C1, C2]</p> 	<p>The human sera in the components was tested and found non-reactive for HBsAg and antibodies to HCV (Component C0 is also <i>negative</i> for antibodies to HIV1/2). No known test method can offer complete assurance that HIV, hepatitis B or C virus or other infectious agents are absent. Employ <i>Standard</i> and <i>Universal Precautions</i> when handling these reagents and all human blood, specimens or patient samples, which represent an unknown, heightened hazard. Handle as if capable of transmitting infectious disease, in a Biosafety Level 2 lab, applying the guidelines from the current CDC/NIH <i>Biosafety in Microbiological and Biomedical Laboratories</i> or WHO <i>Laboratory Biosafety Manual</i>. Avoid splashing, spills and the generation of aerosols. Secure in secondary containment with proper biohazard labeling. Do not inhale mists or aerosols; avoid contact with skin, eyes, mucous membranes and clothing during kit use and sample handling. In case of contact with eyes, immediately rinse with copious water and seek medical attention. Employ decontamination procedures, with appropriate decon agent/disinfectant (typically a 1:10 dilution of household bleach, 70-80% ethanol or isopropanol, an iodophor like 0.5% Wescodyne Plus (EPA Reg. #4959-16), an o-phenylphenol/amyphenol such as 0.8% Vesphene (EPA Reg. #1043-87), or equivalent) before discarding any materials utilized or returning equipment to general use. Dispose of this material in accordance with local, regional, national and international regulations. Handle appropriately with the requisite Good Laboratory Practices, <i>Standard</i> and <i>Universal Precautions</i>. Persons handling blood samples should have the option of receiving hepatitis B vaccination.</p>
<p><b>Animal proteins,</b> [≤ 10% v/v in component R3]</p>	<p>This material is of animal origin (bovine and goat) and may be a potential contact irritant. Hazard Unknown. Handle as potentially infectious. The chemical, physical and toxicological properties have not been thoroughly investigated. Handle appropriately with the requisite Good Laboratory Practices, <i>Standard</i> and <i>Universal Precautions</i>. Dispose of in accordance with local, regional, national and international regulations.</p>

NA: Not Applicable

NE: Not Established or Unknown (unable to locate data); typically for concentrate form unless otherwise specified.

### 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 following chemical constituents in the kit volumes and concentrations present [chemical or dilution is not subject to GHS, US HCS, EC CLP or other GHS-based hazard labeling]:
  - **EDTA disodium salt, dihydrate** (C<sub>10</sub>-H<sub>12</sub>-N<sub>2</sub>-O<sub>8</sub>-Na<sub>4</sub>•2H<sub>2</sub>O), CAS# 6381-92-6, EC No 200-573-9 [≤ 0.2% w/v, in component R2].
  - **Tween 20** (C<sub>58</sub>H<sub>114</sub>O<sub>26</sub>) CAS# 9005-64-5, EC No 585-580-06-X [≤ 2.5% v/v in component R2].
  - **5-bromo-4chloro-3indolyl phosphate (BCIP)** with ≤ **0.5% nitro blue tetrazolium (NBT)** in an organic base/Tris buffer [component R4].
  - The miscellaneous salts, buffers, protein-stabilizers, antibodies, conjugates, water, and other chemicals found in the conjugated-antibody solution with protein stabilizers, and Tris buffered saline solution with milk proteins.
- ◆ According to the concept of *Universal Precautions* (29 CFR 1910.1030), all human blood and certain human body fluids must be treated as if known to be infectious for HIV, HBV and other bloodborne pathogens. No known test method can offer complete assurance that the products derived from human blood will not transmit infection; thus, they should be handled as though they contain an infectious agent. Furthermore, individual patient samples being tested represent a heightened, unknown hazard. Aerosolization/inhalation, contact and mucous membrane exposure should be avoided during sample and kit handling. Consider equipment that potentially comes in contact with human source material as contaminated until appropriately decontaminated.
- ◆ 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 overexposure may include headache, dizziness and congestion. May cause allergic skin reaction upon repeated exposure, generally at concentrations and volumes that greatly exceed that of this kit.
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. 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 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 Decomposition 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. Immediately, and on-site if possible: Decontaminate Biohazard/Human Source Material spills, which should always be treated as potentially infectious, including the area, spill materials and any contaminated surfaces or equipment. Utilize an appropriate chemical decon agent/disinfectant that is effective for the known or potential pathogens relative to the samples involved (commonly a 1:10 dilution of bleach, 70-80% ethanol or isopropanol, an iodophor (such as Wescodyne Plus) or a phenolic, etc.).
- ◆ Clean the spill area with water and wipe dry. Spills can also be absorbed with an appropriate inert material (e.g. spill pillows, acid absorbent pads, etc.) which is 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. 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.
- ◆ 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. Refer to the <i>Instructions For Use / Package Insert</i> for additional product information.	
For <i>in vitro</i> diagnostic use.	

**SECTION 8: EXPOSURE CONTROL / PERSONAL PROTECTION MEASURES (8):**

**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.

<b>100% Sodium Azide [CAS# 26628-22-8] - OEL:</b>			
AUSTRALIA:	CL	0.11 ppm (0.3 mg/m <sup>3</sup> )	JUL2008
AUSTRIA:	MAK-TMW KZW	0.1 mg/m <sup>3</sup> 0.3 mg/m <sup>3</sup> , skin	2007
BELGIUM:	TWA STEL	0.1 mg/m <sup>3</sup> , 0.3 mg/m <sup>3</sup> , skin	MAR2002
DENMARK:	TWA	0.1 mg/m <sup>3</sup> , skin	MAY2011
EC (European Union):	TWA STEL	0.1 mg/m <sup>3</sup> 0.3 mg/m <sup>3</sup> , skin	JUN2000
FINLAND:	TWA STEL	0.1 mg/m <sup>3</sup> 0.3 mg/m <sup>3</sup> , skin	NOV2011
FRANCE:	VME VLE	0.1 mg/m <sup>3</sup> 0.3 mg/m <sup>3</sup> , Skin	FEB2006
GERMANY:	MAK	0.2 mg/m <sup>3</sup> , inhal	2011
HUNGARY:	TWA STEL	0.1 mg/m <sup>3</sup> 0.3 mg/m <sup>3</sup>	SEP2000
ICELAND:	TWA STEL	0.1 mg/m <sup>3</sup> 0.3 mg/m <sup>3</sup> , skin	NOV2011
ITALY	TWA	<i>Valore a breve termine: C 0,29 mg/m<sup>3</sup>, C 0,11* ppm A4; sodio azide; *come azido idrazonico, vapore</i>	
KOREA:	CL	0.1 ppm (0.3 mg/m <sup>3</sup> )	2006
THE NETHERLANDS:	MAC-TGG	0.1 mg/m <sup>3</sup> , skin	2003
NEW ZEALAND:	CL	0.11 ppm (0.29 mg/m <sup>3</sup> )	JAN2002
PERU:	TWA STEL	0.1 mg/m <sup>3</sup> 0.29 mg/m <sup>3</sup>	JUL2005
SWEDEN:	TWA STEL	0.1 mg/m <sup>3</sup> 0.3 mg/m <sup>3</sup> , Skin	JUN2005
SWITZERLAND:	MAK-W KZG-W	0.2 mg/m <sup>3</sup> 0.4 mg/m <sup>3</sup> , inhal	JAN2011
UNITED KINGDOM:	TWA STEL	0.1 mg/m <sup>3</sup> 0.3 mg/m <sup>3</sup> , skin	OCT2007
ARGENTINA, BULGARIA, COLOMBIA, JORDAN, SINGAPORE, VIETNAM		check ACGIH TLV	
UNITED STATES:	TLV-TWA-Ceiling REL-Ceiling	0.11* ppm / 0.29** mg/m <sup>3</sup> 0.1* ppm / 0.3** mg/m <sup>3</sup>	ACGIH, 1996, 2013 NIOSH Recommended Exposure Limits *as HN <sub>3</sub> vapor; **as NaN <sub>3</sub> ; Skin

*[Source: RTECS September 2013 Update and Raw Material Vendor Safety Data Sheet]*

*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. It is recommended that users handle potentially infectious human source material/patient samples in a biological safety cabinet (BSC), expressly if aerosols might be generated.
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 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. Protective coverings such as plastic wrap, aluminum foil, or imperviously-backed absorbent pads used to cover equipment and/or surfaces must be removed and replaced if they become overtly contaminated.

### SECTION 9: PHYSICAL AND CHEMICAL CHARACTERISTICS

<b>Appearance:</b>	Variable, generally aqueous liquids. Exceptions are the solid Western Blot Strips and disposable reaction trays.		
<b>Odor/odour:</b>	No applicable information was found.	<b>Odor/odour Threshold:</b>	Not Established.
<b>pH:</b>	The liquid chemical components are between pH 5 and 9.		
<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>	Not Established.		
<b>Solubility:</b>	The liquid chemical components are soluble 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>	<i>Sodium azide</i> may react with lead or copper plumbing to form highly explosive metal azides; build-up in metal plumbing has led to laboratory explosions, so flush with copious water when pouring dilute solutions down the drain to prevent such explosive build-up.		
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, except the acidic solutions, which may have an exothermic reaction with certain chemicals, particularly strong bases and reducing agents.
Conditions and/or Materials to Avoid:	<b>Sodium azide</b> may react with lead or copper plumbing to form highly explosive metal azides; buildup in metal plumbing has led to laboratory explosions, so flush with copious water when pouring dilute solutions down the drain to prevent such explosive buildup.
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:	May be detrimental if enough is ingested (typically in quantities above those found in the kit).
Primary Irritant Effect:	May slightly irritate eyes or skin, depending on amount and contact time.
Serious Eye Damage / Irritation:	May slightly irritate eyes depending on amount and contact time.
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.

Biohazard Potential

Inactivated HIV virus, though verified to be non-infectious, should be handled with *Standard* and *Universal Precautions*, as if capable of transmitting infectious disease. The human sera in the components was tested and found non-reactive for HBsAg and antibodies to HCV (Component C0 is also negative for antibodies to HIV 1/2). No known test method can offer complete assurance that HIV, hepatitis B or C virus or other infectious agents are absent. Moreover, patient blood samples tested with this kit represent an unknown, heightened hazard. Employ *Standard* and *Universal Precautions*; handle these reagents, all human blood and specimens as if capable of transmitting infectious disease, in a Biosafety Level 2 laboratory, applying the guidelines from the current CDC/NIH *Biosafety in Microbiological and Biomedical Laboratories*, the WHO *Laboratory Biosafety Manual* or equivalent. Persons handling blood samples should have the option of receiving hepatitis B vaccination.

Chronic Toxicity

Respiratory or Skin Sensitization:	May cause an allergic skin reaction. Contains a small volume of a very dilute, sensitizing preservative ( <b>ProClin 300</b> ); though the potential for an allergic response is greatly reduced by the dilution, sensitization threshold is unknown, thus handle accordingly.
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:	Data is not available.

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:	<b>100% Sodium Azide [CAS# 26628-22-8] *:</b> Fish LC <sub>50</sub> - Lepomis macrochirus - 0.68 mg/l - 96 h Daphnia EC <sub>50</sub> - Daphnia pulex (Water flea) - 4.2 mg/l - 48 h <i>*Source: Raw Material Vendor Safety Data Sheet, RTECS and/or CCOHS Cheminfo</i>
Persistence and degradability:	No information found.
Bioaccumulation potential:	No information found.
Mobility in soil:	No information found.
PBT and vPvB assessment:	No information found.
Other adverse effects:	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Avoid release to the environment.

General notes: Water hazard class 1 (Self-assessment): slightly hazardous for water.

## 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:**

- **Sodium azide** may react with lead or copper plumbing to form highly explosive metal azides; buildup in metal plumbing has led to laboratory explosions, so flush with copious water when pouring dilute solutions down the drain to prevent such explosive buildup; check your applicable ordinances accordingly.
- All **human source and other potentially infectious material** must be appropriately decontaminated or disposed of as infectious material; check your international, national, regional and local 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 Unused Product Multi-Modal Transportation:** According to US DOT, 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: 2                                      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).

**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: Subclass 6.5 Category B (contact sensitizers)*
5. **Mexico** – **Standard NMX-R-019-SCFI-2011**
6. **Korea** – **Public Notice 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: Skin Sensitization*
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 in greater quantities than found in this product: **Sodium Azide**, CAS-No. 26628-22-8; Revision Date: 2007-07-01.

*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. – oral.	Acute toxicity – ingested (swallowed)
Acute Tox. – skn.	Acute toxicity – skin contact (dermal)
Skin Sens.	Skin sensitisation
Skin Corr.	Skin corrosion
Eye Damage.	Serious eye damage
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Cat.	Category
H300 + H310	Fatal if swallowed or in contact with skin.
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H410	Very toxic to aquatic life with long lasting effects.
P261	Avoid breathing mist / vapors/vapours / spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
P301 + P330 + P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P302 + P350	IF ON SKIN: Gently wash with plenty of soap and water.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
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.
P310	Immediately call a POISON CENTER or doctor/ physician.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents and container in accordance to local, regional, national and international regulations.
P501	Dispose of this material and its container to hazardous or special waste collection point.
Caution	Contains human source material. Handle as if capable of transmitting potentially infectious agents ( <i>Standard and Universal Precautions</i> ).

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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.

For *in vitro* diagnostic use.

**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 Labelling 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 Community* (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)  
 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  
DGSMA – Dangerous Goods Safety Management Act  
DOT – Department of Transportation  
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  
HNOC – 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%  
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  
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..

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**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 – Fracção 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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