







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

Product Name:	MONOLISA™ Anti-HAV EIA
Product Number:	72496 (2 plates - 192 tests) Catalog number(s) for replacement, optional and/or separately purchased components that can be obtained for use with this kit, and which are covered by this SDS include: 25260, 26181, 26182 and 72700 (refer to Section 2).
Intended Use:	The MONOLISA™ Anti-HAV EIA is an in vitro enzyme immunoassay kit intended for use in the qualitative detection of total antibodies (IgG and IgM) to hepatitis A Virus (anti-HAV) in human (adult and pediatric) serum or plasma (EDTA, Heparin, Citrate, ACD). This kit can be used as an aid in the diagnosis of acute or past Hepatitis A Virus (HAV) infection or as an aid in the identification of HAV-susceptible individuals for vaccination. However, any diagnosis should take into consideration the patient's clinical history and symptoms, as well as serological data. The MONOLISA™ Anti-HAV EIA is intended for manual use and with the Evolis™ Automated Microplate System in the detection of total antibodies to hepatitis A virus. Assay performance characteristics have not been established for immunocompromised or immunosuppressed patients, and cord blood or neonatal specimens. WARNING : This assay is not intended for screening blood or solid or soft tissue donors.
Supplier's Name:	Bio-Rad Laboratories, Inc.
Address:	6565 185th Avenue NE Redmond, WA 98052-5039, USA
Website:	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
Manufactured by:	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] and Bio-Rad Laboratories, Inc. 6565 185th Avenue NE Redmond, WA 98052-5039, USA
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.
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. <i>Refer to section 16 for non-US local Bio-Rad agent contact information.</i>

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
R1 Anti-HAV Microwell Strip, Plates (2)	- Microplate containing 12 strips with 8 wells each, coated with monoclonal anti-HAV antibodies. - Tabs are labeled “39”
R2 Wash Solution Concentrate (20X), 1 bottle (235 mL) <i>Catalog No. 72700</i>	- Sodium chloride (NaCl) [CAS# 7647-14-5, EC No 231-598-3] with < 2% Tween 20 (C ₅₈ H ₁₁₄ O ₂₆) [CAS#: 9005-64-5, EC No 585-580-06-X in a Tris buffered solution (pH 7.4). - Preserved with 0.04% ProClin 300 (< 0.001% active ingredient), EC Index No 613-167-00-5 with CAS# 55965-84-9. Not subject to GHS, US HCS and analogous global GHS-based regulatory requirements in this product mixture and concentration. EC CLP: EUH208 – Contains < 0.05%, but ≥ 0.005% ProClin 300 (0.0015% - 0.00015% active ingredient). May produce and allergic reaction.
C0 Anti-HAV Negative Control, 1 vial (1.5 mL)  WARNING	- Normal human serum that is non-reactive for total anti-HAV antibodies, HBsAg and antibodies to HIV1/HIV-2 and HCV. - Preserved with ≤ 0.25% ProClin 300 (≤ 0.009% 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. - Preserved with < 0.1% sodium azide [NaN ₃], 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.
C1 Anti-HAV Positive Control, 1 vial (1.5 mL)  WARNING	- Human serum, positive for anti-HAV antibodies diluted in human serum pool negative for anti-HAV antibodies. Non-reactive for HBsAg and antibodies to HIV1/HIV-2 and HCV. - Preserved with ≤ 0.25% ProClin 300 (≤ 0.009% 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. - Preserved with < 0.1% sodium azide [NaN ₃], 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.
C2 Anti-HAV Calibrator, 2 vials (1.5 mL)  WARNING	- Human serum, positive for anti-HAV antibodies diluted in human serum pool negative for anti-HAV antibodies. Non-reactive for HBsAg and antibodies to HIV1/HIV-2 and HCV. - Preserved with ≤ 0.25% ProClin 300 (≤ 0.009% 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. - Preserved with < 0.1% sodium azide [NaN ₃], 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.
R6 Anti-HAV Viral Antigen, 2 bottles (14 mL)  WARNING	- Inactivated HAV in a Tris buffered solution with protein stabilizers and red sample indicator dye (Azorubin, Carmoisine, Food Red 3, CAS# 3567-69-9). [HAV viral antigen that has been treated with formalin to inactivate the virus.] - Preserved with 0.1% ProClin 300 (0.003% 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.
R7 Anti-HAV Conjugate, 2 bottles (14 mL)  WARNING	- Peroxidase labeled mouse monoclonal antibody to HAV in Tris buffer containing proteins, detergent, glycerol [≤ 25%, C ₃ H ₈ O ₃ , EC No 200-289-5, CAS# 56-81-5] and purple sample indicator dye (< 0.01% bromocresol purple, C ₂₁ H ₁₅ Br ₂ O ₅ S•Na], CAS# 62625-30-3, EC No 263-655-3). - Preserved with 0.1% ProClin 300 (0.003% 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.

Component *	Content
R8 Substrate Buffer , 1 bottle (120 mL) <i>Catalog No. 26181</i>	- Dilute citric acid (C ₆ H ₈ O ₇ , CAS# 79-92-9, EC No 201-069-1) / sodium acetate buffer , [pH ~ 4.0, clear liquid]. - < 5% dimethylsulfoxide [DMSO - C ₂ H ₆ OS], CAS# 67-68-5, EC No 200-644-3. - < 0.1% hydrogen peroxide [H ₂ O ₂], CAS# 7722-84-1, EC No 231-765-0. Not subject to GHS, US HCS, EC CLP and analogous global GHS-based regulatory requirements in this product mixture and concentration.
R9 Chromogen (11X) , 1 bottle (12 mL) <i>Catalog No. 26182</i>	- ≤ 0.25% 3,3',5,5' tetramethylbenzidine dihydrochloride [TMB- C ₁₆ H ₂₀ N ₂ •2HCl], CAS# 207738-08-7, EC No 264-769-6. - ≤ 0.04 N hydrochloric acid [~ 0.3% HCl, CAS# 7647-01-0, EC No 231-595-7] solution [pH ~ 1.5, clear liquid]. Not subject to GHS, US HCS, EC CLP and analogous global GHS-based regulatory requirements in this product mixture and concentration.
R10. Stopping Solution , 1 bottle (120 mL) <i>Catalog No. 25260</i>  DANGER	- 1N Sulfuric Acid (4.4% w/w H ₂ SO ₄), CAS# 7664-93-9, EC No 231-639-5 [pH < 2, clear liquid]. Severely irritating to skin, corrosive to eyes. GHS \ US HCS \ EC CLP Classification: DANGER! GHS05; H290, H314; P280; P301 + P330 + P331, P305 + P351 + P338; P501.

- Replacement component catalog numbers are provided in this column where available.

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:

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):

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].

Component R10 - 1N H₂SO₄ [4.4% w/w Sulfuric acid], CAS# 7664-93-9, EC No 231-639-5 (pH ≤ 2); severely irritating to skin, corrosive to eyes. [This STOP solution has been evaluated with the CORROSITEX® test method to determine its corrosive potential and classification. The results of this testing classified this STOP solution as Class: 8, Packing group II (UN2796)]

Comprehensive GHS Based Classification:

Skin Corrosive Category 1B
Serious eye damage (Category 1)



Label(s):

Signal Word: **DANGER!**

Label Hazard Statements:

H314 Causes severe skin burns and eye damage.

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

P280	Wear protective gloves / protective clothing / eye protection / face protection.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P501	This material and its container must be disposed of as hazardous waste.

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

P260	Do not breathe mist / vapors/vapours / spray.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P308 + P313	If exposed or concerned: Get medical advice/ attention.
P405	Store locked up.

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

Components C0, C1, C2, R6, R7 - 0.1% and 0.25% ProClin 300 [≤ 0.015% active ingredients – reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one (C₄H₄CINOS; CAS# 26172-55-4, EC No 247-500-7) and 2-methyl-2H -isothiazol-3-one (C₄H₅NOS; 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]

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

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 (LD₅₀, 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: Glycerol

Chemical concentrations found in this product: **≤ 25% in R7**

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

CAS#: 56-81-5 (100%)	LD ₅₀ (oral-rat): 12,600 mg/kg (100%)
EC No: 200-289-5 (100%)	LC ₅₀ (inhalation-rat): > 570 mg/m ³ /1H (100%)
RTECS#: MA8050000 (100%)	LD ₅₀ (skin-rabbit): > 10000 mg/kg (100%)
Index No: NA (100%)	LC ₅₀ (96 hr-fish): NE (100%)
Chemical Formula: C ₃ H ₈ O ₃ (100%)	Flash Point: 320 F / 160° C (100%)
Molecular weight: 92.09 g/mol (100%)	Flammable limits: LEL/LFL is 0.9% vv in air.
Synonyms/Trade Names: 1,2,3-Propanetriol; 1,2,3-Trihydroxypropane; 90 Technical glycerine; Citifluor AF 2; lyzerin, wasserfrei, Glycerin; Glycerin mist; Glycerin mist; Glycerin, anhydrous; Glycerin, synthetic; Glycerine; Glyceritol; Glycyl alcohol; Grocolene; MOON; Osmoglyn; Star; Synthetic glycerin; Trihydroxypropane	

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: Sulfuric acid

Chemical concentrations found in this product: **1 N (< 5% H₂SO₄ in water) in R10**

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

CAS#: 7664-93-9 (Conc. sulfuric acid 100%)	LD ₅₀ (oral-rat): 2,140 mg/kg (100%)
EC No: 231-639-5 (100%)	LC ₅₀ (inhalation-rat): 510 mg/m ³ /2H (100%)
Index No: 016-020-00-8 (100%)	LD ₅₀ (skin-rabbit): NE (100%)
Registration No: 01-2119458838-20-XXXX	LC ₅₀ (96 hr-fish): Gambusia affinis (Mosquito fish) – 42 mg/l (100%)
RTECS#: WS5600000 (100%)	pH value: 1.2 at 5 g/L
Skin corrosion/irritation: Skin - rabbit - Extremely corrosive and destructive to tissue.	
Serious eye damage/eye irritation: Eyes - rabbit - Severe eye irritation	
Chemical Formula: H ₂ SO ₄ (100%)	
Molecular weight: 98.08 g/mol (100%)	
Synonyms/Trade Names: Acide sulfurique ;Acido solforico; BOV; Battery acid; Dihydrogen sulfate; Dipping acid; Electrolyte acid; Matting acid; Oil of vitriol; Schwefelsaeureloesungen; Strong inorganic acid mists containing sulfuric acid; Sulfuric acid; Sulfuric acid, aerosol; Sulphuric acid; Vitriol Brown Oil; Zwavelzuuroplossingen	

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

DANGER!

Skin Corr. Cat. 1A, Eye Damage Cat. 1, Aquatic Acute Cat. 3, Aquatic Chronic Cat. 3

H314, H412

P264, P273, P280, P301 + P330 + P331, P303 + P361 + P353, P304 + P340, P305 + P351 + P338, P310, P363, P405, P501

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



Chemical Ingredient Data / Information

Chemical Ingredient: Dimethyl-sulfoxide [DMSO]

Chemical concentrations found in this product: **≤ 5 % in R8, an aqueous solution**

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

CAS#: 67-68-5 (100%)	LD ₅₀ (oral-rat): 14500 mg/kg (100%)
EC No: 200-644-3 (100%)	LC ₅₀ (inhalation-rat): 1600 mg/m ³ (4 hr) (100%)
RTECS#: PV6210000 (100%)	LD ₅₀ (skin-rabbit): >5000 mg/m ³ (100%)
Index No: NA (100%)	LC ₅₀ (96 hr-fish): NE mg/L (100%)
Chemical Formula: C ₂ H ₆ 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: Citric acid

Chemical concentrations found in this product: **≤1.5% w/v in R8**

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

CAS#: 77-92-9 (100%)	LD ₅₀ (oral-rat): 5400 mg/kg
EC No: 201-069-1 (100%)	LC ₅₀ (inhalation-rat): NE
RTECS#: GE7350000 (100%)	LD ₅₀ (skin-rabbit): >2000 mg/kg
Index No: NA (100%)	
Toxicity to fish mortality LC ₅₀ - Leuciscus idus melanotus - 440 mg/l - 48 h Method: OECD Test Guideline 203	
Chemical Formula: C ₆ H ₈ O ₇ (100%)	pH value: 1.8 at ca.50 g/l at 25 °C (77 °F)
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]

Chemical Ingredient Data / Information

Chemical Ingredient: ProClin 300

Chemical concentrations found in this product: **0.25% (£ 0.009% active ingredient) in C0, C1 and C2;**
0.1% (0.003% active ingredient) in R6, R7 (0.04% (< 0.0015% Active Ingredient) in R2)]

Hazardous ingredient concentration in raw material:

60-100% Glycols;

1-5% Mixture (3:1) of 5-Chloro-2-methyl-4-isothiazolin-3-one (C₄H₅NOS; CAS# 2682-20-4, EC# 220-239-6)
 and **2-Methyl-2H -isothiazol-3-one** (C₄H₄CINOS; 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)

LD₅₀ (oral-rat): 862 mg/kg (concentrated solution)

LD₅₀ (skin-rabbit): 2,800 mg/kg (concentrated solution)

LC₅₀ (inhalation-rat): NE

LD₅₀ (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: Hydrochloric acid

Chemical concentrations found in this product: **≤ 0.04N (< 0.4% v/v HCl)**

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

CAS#: 7647-01-0 (concentrate solution)	LD ₅₀ (oral, rat): 700 mg/kg (unconfirmed)
EC No: 231-595-7 (concentrate solution)	LC ₅₀ (inhalation-rat): 3124 ppm/1H
Index No: 017-002-01-X (concentrate solution)	LD ₅₀ (skin-rabbit): Greater than 5010 mg/kg (unconfirmed)
RTECS#: MW4025000 (concentrate solution)	Fish LC ₅₀ – Bluegill/Sunfish – 282 mg/l – 48 h
Chemical Formula: HCl (concentrate solution)	
Molecular weight: 36.46 g/mol (concentrate solution)	pH value: highly acidic (30-50% concentrated solution)
Synonyms/Trade Names: Acide chlorhydrique; Acido cloridrico; Anhydrous hydrochloric acid; Chloorwaterstof; Chlorohydric acid; Chlorowodor; Chlorwasserstoff; Hydrochloride; Hydrogen chloride; Hydrogen chloride; Muriatic acid; Spirits of salt	
LC ₅₀ (male rat): 1405 ppm (4-hour exposure; head-only); cited as 2810 ppm (1-hour exposure; head-only) (30-50% solution)	
LC ₅₀ (male rat): 1562 ppm (4-hour exposure; whole-body); cited as 3124 ppm (1-hour exposure; whole-body) (30-50% solution)	
Skin corrosion/irritation: Skin - rabbit - Causes burns. (30-50% solution)	
Serious eye damage/eye irritation: Eyes - rabbit - Corrosive to eyes (30-50% solution)	
IARC: Group 3: Not classifiable as to its carcinogenicity to humans (30-50% solution)	

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

DANGER!

Skin Corr. Cat. 1B, Eye Damage Cat. 1, STOT SE Cat. 3, Met. Corr. Cat. 1
H290, H314, H335
P234, P261, P264, P271, P280, P301 + P330 + P331, P303 + P361 + P353, P304 + P340,
P305 + P351 + P338, P310, P363, P390, P403 + P233, P405, P406, P501



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

Chemical Ingredient: 3,3',5,5'-Tetramethylbenzidine, Dihydrochloride

Chemical concentrations found in this product: **≤ 0.3% w/v in R9**

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

CAS#: 207738-08-7 (54827-17-7 Free base) (100%)	LD ₅₀ (ipr-mouse): 135 mg/kg (100%)
EC No: 264-769-6 (100%)	LD ₅₀ (oral-rat): NE
RTECS#: DV2300000 (100%)	LC ₅₀ (inhalation-rat): NE
Chemical Formula: C ₁₆ H ₂₀ N ₂ •2HCl (100%)	LD ₅₀ (skin-rabbit): NE
Molecular weight: 313.27 g/mol (100%)	LC ₅₀ (96 hr-fish): NE (100%)
Synonyms/Trade Names: TMB	

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 Data / Information

Chemical Ingredient: Sodium azide

Chemical concentrations found in this product: **0.1% w/v in C0, C1 and C2**

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

CAS#: 26628-22-8 (100%)	LD ₅₀ (oral-rat): 27 mg/kg
EC No: 247-852-1 (100%)	LC ₅₀ (inhalation-rat): 37 mg/m ³
Index No: 011-004-00-7 (100%)	LD ₅₀ (skin-rat): 50 mg/kg (100%)
RTECS#: VY8050000 (100%)	Fish LC ₅₀ – Lepomis macrochirus (Bluegill) – 0.68 mg/l – 96 h
Chemical Formula: NaN ₃ (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, Smitte; 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]

Chemical Ingredient: Azorubin dye

Chemical concentrations found in this product: **< 0.01% in R6**

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

CAS#: 3567-69-9 (100%)	LD ₅₀ (oral-rat): > 10 g/kg
EC No: 222-657-4 (100%)	LC ₅₀ (inhalation-rat): NE
Index No: NE	LD ₅₀ (skin-rabbit): NE
RTECS#: QK1925000 (100%)	LC ₅₀ (96 hr-fish): NE
Chemical Formula: C ₂₀ H ₁₂ N ₂ O ₇ S ₂ •2Na (100%)	LD ₅₀ (oral mouse): > 8 g/kg
Molecular weight: 502.43 g/mol (100%)	
Synonyms/Trade Names: Carmoisin, CI Food Red 3, E122, Acid Red 14, Brilliant Crimson Red.	

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


WARNING

Skin Irrit. Cat. 2, Eye Irrit. Cat. 2A, STOT SE Cat. 3
H315, H319, H335
P261, P305 + P351 + P338



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

Biological Ingredient	Data / Information
Animal proteins [components R6, R7]	This material is of animal origin (bovine and murine) 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 and <i>Standard</i> and <i>Universal Precautions</i> . Dispose of this material in accordance with local, regional, national and international regulation.

Biological Ingredient	Data / Information
<p>Human Serum [reactive and non-reactive in C0, C1 and C2]</p> 	<p>The Human sera/plasma in the components of this product were tested and found non-reactive for hepatitis B surface antigen (HBsAg) and antibodies to hepatitis C virus (HCV) and human immunodeficiency virus (HIV-1 and HIV-2) by FDA or CE approved methods. 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 <i>Standard and Universal Precautions</i> when handling these reagents and all human blood or specimens. 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. In case of contact with eyes, immediately rinse with copious water and seek medical attention. Employ decontamination procedures with appropriate decon agent or 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 equiv.) 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 and Universal Precautions</i>. Persons handling blood samples should have the option of receiving hepatitis B vaccination.</p>
<p>Inactivated HAV virus [component R6]</p>	<p>The HAV viral antigen reagent (R6) has been treated with formalin to inactivate the virus. 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>. Employ decontamination procedures with appropriate decon agent or disinfectant before discarding any materials utilized or returning equipment used to general use. Dispose of this material in accordance with local, regional, national and international regulation. Handle appropriately with the requisite Good Laboratory Practices, <i>Standard and Universal Precautions</i>.</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 miscellaneous **Tween 20** [C₅₈H₁₁₄O₂₆, CAS #9005-64-5 (≤ 2% in R2, R7)], **hydrogen peroxide** [H₂O₂, CAS# 7722-84-1 (≤ 0.1% v/v in R8)], **Tris** [(hydroxymethyl)aminomethane: 2-amino-2-(hydroxy-methyl)-1, 3-propanediol [C₄H₁₁NO₃ • HCl], EC No 214-684-5, CAS# 1185-53-1 (< 5% in R6) and 2-amino-2-(hydroxymethyl)-3,1-propanediol, [C₄H₁₁NO₃], EC No 201-064-4, CAS# 77-86-1, 25149-07-9; 108195-86-4 (< 5% in R6, R7, R2)], **bromocresol purple**, sodium salt [C₂₁H₁₅Br₂O₅SNa, CAS# 62625-30-3, EC No 263-655-3. (R7)], **bromocresol purple**, sodium salt [C₂₁H₁₅Br₂O₅SNa, CAS# 62625-30-3, EC No 263-655-3. (< 0.01% in R7)] salts, sugars, buffers, water, animal sera and other chemicals found in the HRP conjugate, buffers with protein stabilizers, dyes, and sodium acetate solution, in the kit volumes and/or concentrations present [chemical or dilution is not subject to GHS, US HCS, EC CLP or other GHS-based hazard labeling].
- ◆ 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 products derived from human blood will not transmit infection; thus, they should be handled as though they contain infectious agents. 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. Causes severe skin burns and eye damage. Severely irritating or corrosive to eyes; greater exposures can cause eye damage, including permanent impairment of vision. Risk of serious damage to eyes. May cause ingestion corrosive effects including burning throat, mouth and stomach. May be harmful if swallowed. Skin contact may result in dermatitis and may cause allergic skin reaction upon repeated exposure.
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. If breathing becomes difficult, immediately call for emergency medical assistance. Treat symptomatically and supportively. Generally, this aqueous product is not a significant inhalation hazard in the kit volumes and concentrations present.
If Swallowed:	If ingested, wash out mouth thoroughly with water, provided the person is conscious, and OBTAIN MEDICAL ATTENTION. Rinse mouth. Do NOT induce vomiting. 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 taking immunosuppressant drugs may be more susceptible to infectious pathogens. 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 Combustion Products:	May release toxic oxides of carbon, nitrogen and sulfur or toxic hydrogen chloride gas.
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 or 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.).
 - Neutralize corrosive acidic spills with the appropriate *Acid neutralization / adsorbent* product.
- ◆ Clean the spill area with water and wipe dry. Spills can also be absorbed with appropriate inert materials (e.g. spill pillows, absorbent pads, etc.), 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 and national 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 specimens, materials 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 & 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 MONOLISA™ Anti-HAV EIA 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

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
Sulfuric acid	7664-93-9	TWA – TLV	0.2 mg/m ³ (thoracic fraction)	2004-01-01	USA. ACGIH Threshold Limit Values (TLV)
		TWA – PEL	1 mg/m ³ *	1993-06-30	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		REL IDLH	1 mg/m ³ 15 mg/m ³	2005-149 [SEP-2007]	USA. National Institute for Occupational Safety and Health (NIOSH)
* The value in mg/m ³ is approximate Remarks: TLV CARCINOGENICITY DESIGNATION A2 – Suspected Human Carcinogen: Substance is carcinogenic in laboratory animals under conditions that are considered relevant to worker exposure. Available human studies are conflicting or insufficient to confirm an increased risk of cancer in exposed humans. Worker exposure to an A2 carcinogen should be controlled to levels as low as reasonably achievable below the TLV. The A2 Carcinogenicity Designation refers to sulfuric acid contained in strong inorganic acid mists .					
Hydrochloric acid	7647-01-0	TLV – C	2 ppm	2007-01-01	USA. ACGIH Threshold Limit Values (TLV)
		PEL – C	7 mg/m ³ * 5 ppm	2006-02-28	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		REL – C	7 mg/m ³ 5 ppm	2005-149 [SEP-2007]	USA. National Institute for Occupational Safety and Health (NIOSH)
		IDLH	50 ppm		
* The value in mg/m ³ is approximate. Ceiling limit is to be determined from breathing-zone air samples. Remarks: TLV CARCINOGENICITY DESIGNATION A4 – Not Classifiable as a Human Carcinogen: Inadequate data on which to classify the substance as a human and/or animal carcinogen.					

Chemical	CAS-No.	Value	Control parameter	Update	Basis
Hydrogen peroxide	7722-84-1	TWA – TLV	1 ppm	2007-01-01	USA. ACGIH Threshold Limit Values (TLV)
		TWA – PEL	1.4 mg/m ³ * 1 ppm	1997-08-04	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		REL IDLH	1.4 mg/m ³ / 1 ppm 75 ppm	2005-149 [SEP-2007]	USA. National Institute for Occupational Safety and Health (NIOSH)
<p>* The value in mg/m³ is approximate</p> <p>Remarks: 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>					
Dimethyl sulfoxide	67-68-5	TWA-WEEL	250 ppm	2014	USA: Workplace Environmental Exposure Levels
		MAK	50 ppm (160 mg/m ³)	2011	GERMANY:

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

100% Sodium Azide [CAS# 26628-22-8] - OEL:

AUSTRALIA:	CL	0.11 ppm (0.3 mg/m ³)	JUL2008
AUSTRIA:	MAK-TMW KZW	0.1 mg/m ³ 0.3 mg/m ³ , skin	2007
BELGIUM:	TWA STEL	0.1 mg/m ³ , 0.3 mg/m ³ , skin	MAR2002
DENMARK:	TWA	0.1 mg/m ³ , skin	MAY2011
EC (European Union):	TWA STEL	0.1 mg/m ³ 0.3 mg/m ³ , skin	JUN2000
FINLAND:	TWA STEL	0.1 mg/m ³ 0.3 mg/m ³ , skin	NOV2011
FRANCE:	VME VLE	0.1 mg/m ³ 0.3 mg/m ³ , Skin	FEB2006
GERMANY:	MAK	0.2 mg/m ³ , inhal	2011
HUNGARY:	TWA STEL	0.1 mg/m ³ 0.3 mg/m ³	SEP2000
ICELAND:	TWA STEL	0.1 mg/m ³ 0.3 mg/m ³ , skin	NOV2011
ITALY	TWA	<i>Valore a breve termine: C 0,29 mg/m³, C 0,11* ppm A4; sodio azide; *come azido idrazonico, vapore</i>	
KOREA:	CL	0.1 ppm (0.3 mg/m ³)	2006
THE NETHERLANDS:	MAC-TGG	0.1 mg/m ³ , skin	2003
NEW ZEALAND:	CL	0.11 ppm (0.29 mg/m ³)	JAN2002
PERU:	TWA STEL	0.1 mg/m ³ 0.29 mg/m ³	JUL2005
SWEDEN:	TWA STEL	0.1 mg/m ³ 0.3 mg/m ³ , Skin	JUN2005
SWITZERLAND:	MAK-W KZG-W	0.2 mg/m ³ 0.4 mg/m ³ , inhal	JAN2011
UNITED KINGDOM:	TWA STEL	0.1 mg/m ³ 0.3 mg/m ³ , 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 ³ 0.1* ppm / 0.3** mg/m ³	ACGIH, 1996, 2013 NIOSH Recommended Exposure Limits *as HN ₃ vapor; **as NaN ₃ ; 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, and to prevent 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:	<p>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.</p> <p>Guidelines for Sulfuric Acid, less than 30%: RECOMMENDED (resistance to breakthrough longer than 8 hours): Butyl rubber, natural rubber, neoprene, polyethylene, polyvinyl chloride, Viton®, Viton®/Butyl rubber, Barrier (PE/PA/PE), Silver Shield/4H™ (polyethylene/ethylene vinyl alcohol), Trelchem® HPS, Trelchem® VPS, Tychem® SL (Saranex®), Tychem® CPF 3, Tychem® F, Tychem® BR/LV, Tychem® Responder™, Tychem® TK. RECOMMENDED (resistance to breakthrough longer than 4 hours): Nitrile rubber. NOT RECOMMENDED for use (resistance to breakthrough less than 1 hour): Polyvinyl alcohol. <i>Source: CHEMINFO 12-2013</i></p>
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 PROPERTIES

Appearance:	Variable, generally aqueous liquids. Exceptions are the solid microtiter plate and related materials.		
Odor/odour:	No applicable information was found.	Odor/odour threshold:	Not Established.
pH:	Most of the liquid chemical components are between pH 6 and 8, Exceptions are the following acidic solutions: Substrate Buffer at pH~4, Stopping Solution at pH ≤ 2, Chromogen at pH ~1.5.		
Boiling point:	Undetermined.	Melting point:	Undetermined.
Flash point:	Not Applicable. Flammable limits: LEL/LFL is <u>Not Applicable</u> ; UEL/UFL is <u>Not Applicable</u>		
Evaporation rate:	No applicable information was found.		
Fire hazard:	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.		
Vapor/vapour pressure:	No applicable information was found.		
Vapor/vapour density:	No applicable information was found.		
Relative density:	Variable, approximately 1-2.		

Solubility:	The liquid chemical components are soluble in water. The acidic solutions may release heat.
Partition coefficient (n-octanol/water):	No applicable information was found.
Auto igniting:	Product is not known to be self-igniting.
Decomposition temperature:	No applicable information was found.
Viscosity:	No applicable information was found.
Danger of explosion:	<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. Generally, the product is not known to present an explosion hazard; however, the small amount of <i>glycerol</i> in component R7 should be kept away from strong oxidizing agents, including sodium hypochlorite (bleach) and potassium permanganate, as these could potentially form explosive mixtures.
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 to Avoid:	<i>Sodium azide</i> 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.
Materials to Avoid:	Do not allow the acidic Stop Solution to come in contact with strong bases or reducing agents (may lead to a violent exothermic reaction). Sulfuric Acid - Bases, Halides, Organic materials, Carbides, fulminates, Nitrates, picrates, Cyanides, Chlorates, alkali halides, Zinc salts, permanganates, e.g. potassium permanganate, Hydrogen peroxide, Azides, Perchlorates., Nitromethane, phosphorous, Reacts violently with: cyclopentadiene, cyclopentanone oxime, nitroaryl amines, hexalithium disilicide, phosphorous(III) oxide, Powdered metals Keep <i>glycerol</i> solutions away from strong oxidizing agents, including sodium hypochlorite (bleach) and potassium permanganate, as these could potentially form explosive mixtures.
Incompatible materials:	Sulfuric acid: Although concentrated sulfuric acid is referred to as an oxidizing agent in some sources, it is not a very strong oxidizing agent. The 98% acid has some oxidizing ability when hot. Sulfuric acid does not polymerize and does not form peroxides. Sulfuric acid is a very reactive substance. The concentrated acid dehydrates, or sulfonates most organic compounds. Sulfuric acid reacts vigorously, violently or explosively with many organic and inorganic chemicals including water, acrylonitrile, alkali solutions, carbides, chlorates, fulminates, nitrates, perchlorates, permanganates, picrates, powdered metals, metal acetylides or carbides, epichlorohydrin, aniline, ethylenediamine, alcohols with strong hydrogen peroxide, chlorosulfonic acid, cyclopentadiene, hydrofluoric acid, nitromethane, 4-nitrotoluene, phosphorus (III) oxide, potassium, sodium, ethylene glycol, isoprene, styrene. Hazardous gases, such as hydrogen, hydrogen cyanide, hydrogen sulfide and acetylene, are evolved on contact with chemicals such as metals, cyanides, sulfides and mercaptans and carbides respectively.
Hazardous Decomposition Products:	May release toxic oxides of carbon, nitrogen and sulfur or toxic hydrogen chloride gas.

Hazardous Polymerization:	Has not been reported to occur.
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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 in contact with skin, if swallowed, and to eyes upon contact; in case of contact with eyes, immediately rinse with copious water and seek medical attention. May be detrimental if enough is ingested (typically in quantities above those found in the kit).
Primary Irritant Effect:	Irritating to skin and severely irritating or corrosive to eyes, and with greater exposures can cause eye damage, including permanent impairment of vision or blindness.
Skin Corrosivity / Metal Corrosion:	Causes severe skin burns and eye damage. The Stopping Solution (R10) is Corrosive, able to cause severe burns of the mucous membranes, skin and eyes; can cause permanent eye damage or blindness. May cause ingestion corrosive effects, including burning throat, mouth and stomach.
Serious Eye Damage / Irritation:	The Stopping Solution is Corrosive, able to cause severe burns of the eyes; can cause permanent eye damage or blindness. The Stopping Solution poses a risk of serious damage to eyes. Harmful to eyes upon contact; in case of contact with eyes, immediately rinse with copious water and seek medical attention.
STOT-Single Exposure:	No applicable information was found.
Aspiration Hazard:	No applicable information was found.
Other Acute Health Effects:	No significant other health effect is known.

Biohazard Potential

Inactivated HAV 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 of this product were tested and found non-reactive for hepatitis B surface antigen (HBsAg) and antibodies to hepatitis C virus (HCV) and human immunodeficiency virus (HIV-1 and HIV-2) on FDA or CE licensed tests. 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*, 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 (ProClin 300); though the potential for an allergic response is greatly reduced by the dilution, sensitization threshold is unknown, thus handle accordingly. R6 contains Azorubin dye (Carmoisine, Food Red 3, E122, CAS# 3567-69-9); most organic azo dyes are potential skin sensitizers; prolonged or repeated exposure may cause allergic reaction in certain sensitive individuals.
Carcinogenicity:	Component R10 contains IN Sulfuric Acid , CAS# 7664-93-9: IARC Group 1, The agent is Carcinogenic to Humans, NTP listed as Known to be a Human Carcinogen and ACGIH-TLV Group A2, Suspected Human Carcinogen. <i>Note: The IARC Group and ACGIH A2 Iclassifications refers specifically to sulfuric acid contained in strong inorganic acid mists are and does not apply to sulfuric acid or sulfuric acid solutions.</i>
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>100% Sodium Azide [CAS# 26628-22-8]*: Fish LC₅₀ - Lepomis macrochirus - 0.68 mg/l - 96 h Daphnia EC₅₀ - Daphnia pulex (Water flea) - 4.2 mg/l - 48 h</p> <p>Concentrated Sulfuric acid [CAS# 7664-93-9]*: Fish LC₅₀ - Gambusia affinis (Mosquito fish) – 42 mg/l - 96 h</p> <p>Concentrated Hydrochloric acid [CAS# 7647-01-0]*: Fish LC₅₀ - Bluegill/Sunfish – 282 mg/l - 48 h</p> <p>Concentrated Citric acid [CAS#: 77-92-9]*: Toxicity to fish mortality LC₅₀ - Leuciscus idus melanotus - 440 mg/l - 48 h Method: OECD Test Guideline 203 Toxicity to daphnia and other aquatic invertebrates: static test - Daphnia magna (Water flea) - 1,535 mg/l - 24 h</p> <p><i>* Source: Raw Material Vendor Safety Data Sheets, RTECS and/or CCOHS Cheminfo</i></p>
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:	Components R8 (pH 4) , R9 (pH 1.5) and R10 (pH < 2) are 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:

- **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 applicable ordinances accordingly.
- **Acidic Stopping Solution** (sulfuric acid, pH ≤ 2), **Chromogen** (pH ~1.5), and **Substrate Buffer** (pH ~4.0) wastes should be neutralized to pH 6-8 for safe sewer disposal; check your applicable ordinances accordingly. In addition, if the final pH measures ≤ 2, it requires disposal as a corrosive material in an RCRA approved waste facility (or equivalent). The US RCRA Waste Disposal Code for this waste, if not neutralized, is D002; check your 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 of in accordance with all applicable local, regional, national and international regulations.

SECTION 14: TRANSPORT INFORMATION

Shipping and disposal 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 **STOPPING SOLUTION** in the kit must be transported as follows:

Acidic Component **Stopping Solution** in this product contains **1N Sulfuric acid** (< 5% H₂SO₄). Thus any un-neutralized discarded kit component or waste generated from its use resulting in a corrosive liquid (pH ≤ 2 or an pH ≥ 12.5 per Method 9040 (USEPA Publication SW-846) or which corrodes Steel (NACE Standard TM-01-69)) must be transported as follows:

- Proper Shipping name: **Sulphuric acid [with not more than 51% acid]**
- Hazard Class or Division: **8**
- UN ID Number: **UN 2796**
- Packing group **II**



The **EIA Chromogen (11X)** solution in this product has been evaluated with the CORROSITEX® test method to determine its corrosive potential and any packing group classification. The results of this testing classified this STOP solution as non-corrosive for shipping purposes.

Recommended Used Product Hazardous Waste Disposal Transportation: Air and land transportation information for discarded kit components and waste from this product when used as intended is:

Acidic **Chromogen** is at pH ~1.5 and 1N sulfuric acid **Stopping Solution** is at pH ≤ 2, thus any un-neutralized discarded kit component or waste generated from its use resulting in a corrosive liquid (pH ≤ 2 or an pH ≥ 12.5 per Method 9040 (USEPA Publication SW-846) or which corrodes Steel (NACE Standard TM-01-69)) must be transported as follows:

- Proper Shipping name: **Waste Corrosive Liquid n.o.s.**
- Hazard Class or Division: **8**
- UN ID Number: **UN 1760**
- Packing group **III**



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: 1

Carcinogenicity Categories: **Component R10** contains **1N Sulfuric Acid**, CAS# 7664-93-9: IARC Group 1 The agent is Carcinogenic to Humans, NTP listed as Known to be a Human Carcinogen and ACGIH-TLV Group A2 Suspected Human Carcinogen

Note: The IARC Group and ACGIH A2 1classifications refers specifically to sulfuric acid contained in strong inorganic acid mists and does not apply to sulfuric acid or sulfuric acid solutions.

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)
 - Subclass 8.2 Category B (skin corrosive, GHS 1B)
 - Subclass 8.3 Category A (eye corrosive)
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:
 - Skin Corrosion
 - Serious Eye Damage
 - 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

Country(s) or region Inventory name	In Compliance (yes/no)*
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: **Sulfuric Acid**, CAS# 7664-93-9; Revision Date: 2007-07-01
Hydrogen peroxide, CAS# 7722-84-1; Revision Date: 1993-04-24
Sodium Azide, CAS# 26628-22-8; Revision Date: 2007-07-01

SARA 313 components: The following components are subject to reporting levels established by SARA Title III, Section 313: **Sulfuric Acid**, CAS# 7664-93-9; Revision Date: 2007-07-01

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)
Acute Tox. – inhl.	Acute toxicity - inhaled
Resp. Sens.	Respiratory sensitization
Skin Sens.	Skin sensitisation
Skin Corr.	Skin corrosion
Skin Irrit.	Skin irritation
Eye Damage	Serious eye damage
Eye Irrit.	Eye irritation
STOT SE	Specific target organ toxicity - single exposure
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Met. Corr	Corrosive to Metals

Fla. Liq. Cat.	Flammable liquid Category
H227	Combustible liquid.
H290	May be corrosive to metals.
H300 + H310	Fatal if swallowed or in contact with skin.
H302	Harmful if swallowed.
H313	May be harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H316	Causes mild skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
P210	Keep away from heat.
P234	Keep only in original container.
P261	Avoid breathing mist / vapors/vapours / spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
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.
P285	In case of inadequate ventilation wear respiratory 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.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P304 + P341	IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
P308 + P313	If exposed or concerned: Get medical advice/ attention.
P310	Immediately call a POISON CENTER or doctor/ physician.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/ physician.
P363	Wash contaminated clothing before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P390	Absorb spillage to prevent material damage.
P391	Collect spillage.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P406	Store in corrosive resistant stainless steel container with a resistant inner liner.
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>).

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 (HCS) 1910.1200
Canadian Workplace Hazardous Materials Information System (WHMIS)
Mexican Standard (NMX-R-019-SCFI-2011) [regulatory translation if available and summaries]
European Community (EC) Regulations 2008/1272/EC, 2010/453/EC, 2006/1907/EC
Australian Code of Practice on Preparation of Safety Data Sheets for Hazardous Chemicals (Section 274 of the *Work Health and Safety Act*)
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
 DGSMA – Dangerous Goods Safety Management Act
 DOT – Department of Transportation
 EC₅₀ – 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
 LC₅₀ – median lethal concentration, 50%
 LD₅₀ – 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.

Bio-Rad Laboratories:

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