

1. Product and Company Identification

Material name	Sorbitol Dehydrogenase; NADH Reagent Buffer (R1a)
Version #	01
Issue date	01-16-2013
Revision date	-
Supersedes date	-
CAS #	Mixture
Kit number	740-10; 740-25
Product use	For the in vitro quantitative measurement of sorbitol dehydrogenase in animal serum.
Manufacturer information	
Corporate Headquarters	Sekisui Diagnostics, LLC 4 Hartwell Place, Lexington, MA 02421, USA www.sekisuidiagnostics.com Phone: 800-332-1042 Americas 1-760-476-3962
Emergency Telephone Numbers	Europe, Middle East & Africa +1-760-476-3961 Asia Pacific +1-760-476-3960 Access code 333512

2. Hazards Identification

Physical state	Liquid.
Appearance	Clear, colorless liquid.
Emergency overview	CAUTION The chemical, physical and toxicological properties of this preparation have not been thoroughly characterized. May cause eye, skin and respiratory tract irritation.
OSHA regulatory status	This product is hazardous according to OSHA 29 CFR 1910.1200.
Potential health effects	
Routes of exposure	Skin contact. Eye contact.
Eyes	May cause eye irritation.
Skin	May cause skin irritation.
Inhalation	In high concentrations, vapors may be irritating to the respiratory system.
Ingestion	May cause discomfort if swallowed.
Target organs	Eyes. Skin.
Chronic effects	Repeated chloroform exposure can cause damage to the liver, kidneys, and heart.
Signs and symptoms	Direct contact with skin and eyes may cause irritation.
Potential environmental effects	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Tris-(hydroxymethyl)aminomethane	77-86-1	1- 3
Chloroform	67-66-3	< 1

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First Aid Measures

First aid procedures

Eye contact	In case of contact, immediately flush eyes with fresh water for at least 15 minutes while holding the eyelids open. Remove contact lenses if worn. Get medical attention if irritation persists.
Skin contact	For skin contact flush with large amounts of water while removing contaminated clothing. Get medical attention if irritation develops and persists.
Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Ingestion	If material is ingested, immediately contact a poison control center.
Notes to physician	Provide general supportive measures and treat symptomatically.

5. Fire Fighting Measures

Flammable properties This product is not flammable.

Extinguishing media

Suitable extinguishing media	Extinguish with water spray, carbon dioxide, dry chemical or material appropriate for the surrounding fire.
Unsuitable extinguishing media	None known.

Protection of firefighters

Specific hazards arising from the chemical	None known.
Protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions Use standard firefighting procedures and consider the hazards of other involved materials.

Hazardous combustion products None known.

6. Accidental Release Measures

Personal precautions Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Environmental precautions Do not allow to enter drains, sewers or watercourses.

Methods for containment Absorb spillage with non-combustible, absorbent material.

Methods for cleaning up Absorb spill with vermiculite or other inert material. Dispose of waste in accordance with all applicable federal, state, local and provincial environmental regulations, per Section 13.

Other information Absorb small leaks or spills with sponge, mop up large spills with plenty of soap and water. Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling Avoid contact with skin and eyes. Wash thoroughly after handling. In case of insufficient ventilation, wear suitable respiratory equipment. Handle and open container with care. Observe good industrial hygiene practices.

Storage Store at 2-8°C (35-46°F). Store in a closed container away from incompatible materials.

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
Chloroform (CAS 67-66-3)	TWA	10 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Chloroform (CAS 67-66-3)	Ceiling	240 mg/m ³ 50 ppm

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Chloroform (CAS 67-66-3)	TWA	49 mg/m ³ 10 ppm

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value
Chloroform (CAS 67-66-3)	TWA	2 ppm

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value
Chloroform (CAS 67-66-3)	TWA	10 ppm

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value
Chloroform (CAS 67-66-3)	TWA	24.4 mg/m ³ 5 ppm

Mexico. Occupational Exposure Limit Values

Components	Type	Value
Chloroform (CAS 67-66-3)	STEL	225 mg/m ³ 50 ppm
	TWA	50 mg/m ³ 10 ppm

Exposure guidelines	Follow standard monitoring procedures.
Engineering controls	Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors. Provide easy access to water supply and eye wash facilities.
Personal protective equipment	
Eye / face protection	Wear approved safety glasses or goggles.
Skin protection	Wear lab coat or other protective garments. Remove contaminated clothing promptly.
Respiratory protection	Under normal conditions, respirator is not normally required.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

Appearance	Clear, colorless liquid.
Physical state	Liquid.
Form	Clear liquid.
Color	Colorless, clear.
Odor	Mild sweet odor.
Odor threshold	Not available.
pH	7.5 @ (25°C)
Vapor pressure	Not available.
Vapor density	Not available.
Boiling point	Not available.
Melting point/Freezing point	Not available.
Solubility (water)	Not available.
Specific gravity	1.01
Flash point	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.

Auto-ignition temperature Not available.

10. Chemical Stability & Reactivity Information

Chemical stability Material is stable under normal conditions.
Conditions to avoid No data available.
Incompatible materials Strong caustics, chemically active metals, such as aluminum, magnesium powder, sodium, potassium.
Hazardous decomposition products None known.
Possibility of hazardous reactions Hazardous polymerization does not occur.

11. Toxicological Information

Toxicological data

Components	Species	Test Results
Chloroform (CAS 67-66-3)		
Acute		
<i>Inhalation</i>		
LC50	Rat	47.702 mg/l, 4 Hours
<i>Oral</i>		
LD50	Rat	444 mg/kg
Tris-(hydroxymethyl)aminomethane (CAS 77-86-1)		
Acute		
<i>Oral</i>		
LD50	Rat	5900 mg/kg
Sensitization	Not classified.	
Acute effects	May cause discomfort if swallowed.	
Local effects	May cause eye, skin and respiratory tract irritation.	
Chronic effects	Repeated chloroform exposure can cause damage to the liver, kidneys, and heart.	
Carcinogenicity	The product contains a small amount substance that is suspected of causing cancer.	
ACGIH Carcinogens		
Chloroform (CAS 67-66-3)	A3 Confirmed animal carcinogen with unknown relevance to humans.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
Chloroform (CAS 67-66-3)	2B Possibly carcinogenic to humans.	
US NTP Report on Carcinogens: Anticipated carcinogen		
Chloroform (CAS 67-66-3)	Reasonably Anticipated to be a Human Carcinogen.	
Epidemiology	No epidemiological data is available for this product.	
Mutagenicity	Not classified.	
Reproductive effects	Not classified.	
Symptoms and target organs	Direct contact with skin and eyes may cause irritation.	
Further information	No other specific acute or chronic health impact noted.	

12. Ecological Information

Ecotoxicological data

Components	Species	Test Results
Chloroform (CAS 67-66-3)		
Aquatic		
Fish	LC50 Fathead minnow (<i>Pimephales promelas</i>)	8.47 - 94.87 mg/l, 96 hours
Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.	
Environmental effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.	
Persistence and degradability	No data is available on the degradability of this product.	

Bioaccumulation / Accumulation	Not available.
Partition coefficient	
Tris-(hydroxymethyl)aminomethane (CAS 77-86-1)	-2.31 (20°C)
Chloroform (CAS 67-66-3)	1.97
Mobility in environmental media	The product is completely soluble in water.

13. Disposal Considerations

Waste codes	U044: Waste Chloroform
Waste from residues / unused products	Dispose in accordance with all applicable regulations.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Dispose of empty containers according to applicable federal, state/provincial and/or local regulations.

14. Transport Information

DOT	Not regulated as a hazardous material by DOT.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.
TDG	Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations	This product is hazardous according to OSHA 29 CFR 1910.1200. This mixture is a component of an in vitro diagnostic device regulated by the U.S. Food and Drug Administration.
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	Not regulated.
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List	Chloroform (CAS 67-66-3)
US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Spill: Reportable quantity	Chloroform (CAS 67-66-3) 10 lbs
US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Substance: Threshold Planning Quantity	Chloroform (CAS 67-66-3) 10000 lbs
US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration	Chloroform (CAS 67-66-3) 0.1 %
US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance	Chloroform (CAS 67-66-3) Listed.
CERCLA (Superfund) reportable quantity (lbs) (40 CFR 302.4)	Chloroform: 10
Superfund Amendments and Reauthorization Act of 1986 (SARA)	
Hazard categories	Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
Section 302 extremely hazardous substance (40 CFR 355, Appendix A)	No
Section 311/312 (40 CFR 370)	No
Drug Enforcement Administration (DEA) (21 CFR 1308.11-15)	Not controlled

Canadian regulations	This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.
WHMIS status	Controlled
WHMIS classification	D2A - Other Toxic Effects-VERY TOXIC D2B - Other Toxic Effects-TOXIC

WHMIS labeling



Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
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
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s)

State regulations WARNING: This product contains chemical(s) known to the State of California to cause cancer.

US - California Hazardous Substances (Director's): Listed substance

Chloroform (CAS 67-66-3) Listed.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Chloroform (CAS 67-66-3) Listed.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Chloroform (CAS 67-66-3) Listed: October 1, 1987 Carcinogenic.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

Chloroform (CAS 67-66-3) Listed: August 7, 2009 Developmental toxin.

US - New Jersey RTK - Substances: Listed substance

Chloroform (CAS 67-66-3) Listed.

US - Pennsylvania RTK - Hazardous Substances: Special hazard

Chloroform (CAS 67-66-3) Special hazard.

US. Massachusetts RTK - Substance List

Chloroform (CAS 67-66-3) Listed.

US. New Jersey Worker and Community Right-to-Know Act

Chloroform (CAS 67-66-3) 500 lbs

US. Pennsylvania RTK - Hazardous Substances

Chloroform (CAS 67-66-3) Listed.

Mexico regulations This safety data sheet was prepared in accordance with the Official Mexican Standard (NOM-018-STPS-2000).

16. Other Information

Recommended restrictions Use in accordance with supplier's recommendations.

Further information HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings
Health: 2*
Flammability: 0
Physical hazard: 0

NFPA ratings

Health: 2
Flammability: 0
Instability: 0

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