Safety Data Sheet

4 CN Peroxidase Substrate

SDS-10329 Rev. Number: 3 Rev. Date: Dec 21, 2021

1. PRODUCT AND COMPANY IDENTIFICATION

Product Description:	Material Number
4 CN Substrate	5420-0023 (50-73-03)
4 CN Substrate	5420-0021 (50-73-01)
4 CN Substrate	5420-0022 (50-73-02)

Hazardous Reagent	Hazardous Reagent Product code
4 CN Substrate	Catalog No. listed above

Recommended Use: Reference Reagent For Research Use Only.

Contact Manufacturer: LGC Clinical Diagnostics, Inc.
910 Clopper Road
Gaithersburg, MD 20878

Phone #: (508) 244-6400
US Toll Free: (800) 676-1881

Fax #: (508) 634-3394

Web: www.seracare.com

Email: CDx-CustomerService@LGCGroup.com

Emergency Telephone Numbers:

AUSTRALIA – POISONS INFORMATION CENTER	Telephone:	13 11 26 - Hours: 24 hours
CANADIAN TRANSPORT EMERGENCY CENTER	Telephone:	(1) 613 996 6666 - Hours: 24 hours/day, 7 days/week
UK – THE NATIONAL FOCUS	Telephone:	(44) 029 2041 6388 - Hours: 09:00-17:00 GMT
USA - NATIONAL RESPONSE CENTER	Telephone:	(1) 800 424 8802 - Hours: 24 hours/day, 7 days/week

CHEMTREC: CHEMTREC Customer Number: - CCN12505*
For Chemical Emergency Spill, Leak, Fire, Exposure, or Accident
Call CHEMTREC Day or Night
Within USA and Canada: 1-800-424-9300 CCN12505 or
+1 703-527-3887 (collect calls accepted)

2. HAZARD IDENTIFICATION

Hazard Type: Health Hazard

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

GHS Classification:
Flammable liquids, Category 2; H225
Acute toxicity, Category 3, inhalation; H331
Acute toxicity, Category 3, dermal; H311
Acute toxicity, Category 3, oral; H301
Specific Target Organ Toxicity (single exposure), Category 2; H371

Biological Hazard: None. Product does not contain any human or animal origin materials.

Hazard Statements:
H225: Highly flammable liquid and vapour.
H331: Toxic if inhaled.
H311: Toxic in contact with skin.
H301: Toxic if swallowed.
H371: May cause damage to organs.

Precautionary Statements:
P210: Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking
P233: Keep container tightly closed.
P240: Ground/bond container and receiving equipment.
P241: Use explosion-proof electrical/ ventilating/ lighting equipment. P242: Use only non-sparking tools.
P243: Take precautionary measures against static discharge.
P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.
P260: Do not breathe dust/ fume/ gas/mist/ vapours/ spray.
P271: Use only outdoors or in a well-ventilated area.
P284: Wear respiratory protection.
P264: Wash skin thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.

Symbols and Indications of Danger: GHS02 GHS06 GHS08 Dgr: Danger

Principle Route of Exposure: The substance can be absorbed into the body by inhalation and through the skin and by ingestion.

Acute Effects: Eye In case of contact, immediately flush eyes with a large amount of water for at least 15 minutes while holding the eyelids open to assure that the entire surface is flushed. Seek medical attention.

Acute Effects: Skin Remove contaminated clothing and shoes. In case of contact, immediately wash the contact area thoroughly with soap and a large amount of water. Seek medical attention.

Acute Effects: Inhalation Remove user to fresh air. If symptoms of intoxication or vision problems are apparent, seek immediate medical attention

Inhalation Risk: A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C.

Short-Term Exposure: The substance is irritating to the eyes, the skin and the respiratory tract. The substance may cause effects on the central nervous system, resulting in loss of consciousness.

Long-Term Exposure: Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the central nervous system, resulting in persistent or recurring headaches and impaired vision.

Redness. Pain.

MAY BE ABSORBED! Dry skin. Redness.

Cough. Dizziness. Headache. Nausea. Weakness. Visual disturbance.

Abdominal pain. Shortness of breath. Vomiting. Convulsions. Unconsciousness. (Further see Inhalation).

Ingestion: Do not eat, drink, or smoke during work.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Chemical	% Weight	CAS #
4 CN Peroxidase Substrate	Methyl Alcohol	<20%	67-56-1

GHS Classification: Flammable liquids, Category 2; H225
Acute toxicity, Category 3, inhalation; H331
Acute toxicity, Category 3, dermal; H311
Acute toxicity, Category 3, oral; H301
Specific Target Organ Toxicity (single exposure), Category 2; H371

4. FIRST AID MEASURES

General Advice: Wash contaminated clothing before reuse. Seek medical attention if necessary.

Ingestion First Aid: Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention.

Oral Exposure: Avoid swallowing the material. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious or convulsing person. If conscious, rinse mouth with water. Seek medical attention.

Inhalation Exposure: Fresh air, rest. Refer for medical attention.

Skin Exposure: Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.

Eye Exposure: First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Use dry chemical, alcohol-resistant foam or carbon dioxide for the surrounding fire.

Fire Acute Hazard: Highly flammable. See Notes.

Fire Prevention: NO open flames, NO sparks, and NO smoking. NO contact with oxidants.

Fire Fighting: Powder, alcohol-resistant foam, water in large amounts, carbon dioxide.

Explosion Acute Hazard: Vapour/air mixtures are explosive.

Closed system, ventilation, explosion-proof electrical equipment and lighting. Do NOT use compressed air for filling, discharging, or handling. Use non-sparking handtools.

In case of fire: keep drums, etc., cool by spraying with water.

CHEMICAL DANGERS: Reacts violently with oxidants causing fire and explosion hazard.

PHYSICAL DANGERS: The vapour mixes well with air, explosive mixtures are easily formed.

Unusual Fire and Explosive Hazards: May emit toxic and/or explosive vapors under fire conditions.

Flash Point: 80 °F (26.5 °C)

Auto Ignition Temperature: 725 °F (385 °C)

Flammability Statement: This product is flammable (flammable limits LEL=6.7 and UEL=36).

Specific Hazards Arising from the Chemical: Hazardous combustion products may include carbon monoxide, formaldehyde, and carbon dioxide.

Protective Equipment and Precautions for Firefighters: Wear self-contained breathing apparatus and protective clothing to prevent exposure to eyes and skin. Flame invisible in daylight.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Data for 100% Methyl Alcohol (67-56-1): Precautionary Statement - P-phrases:

P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233: Keep container tightly closed.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352: IF ON SKIN: Wash with plenty of soap and water.
P309+P310: IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician. (Unofficial P-phrase combination)

Environmental Precautions: Data for 100% Methyl Alcohol (67-56-1): Endangerment of drinking water and environment:

Maybe a hazard to drinking water sources when very large quantities get into groundwater. Inform the responsible authorities.

Method of Containment: Collect leaking and spilled liquid in sealable containers as far as possible.

Method of Clean-up: Clean up of spills requires no special equipment or procedures. Clean with copious amounts of water.

Other Information: Not Applicable

Spillage Disposal Evacuate danger area! Ventilation. Collect leaking liquid in sealable containers. Wash away remainder with plenty of water. Remove vapour with fine water spray. Chemical protection suit including self-contained breathing apparatus.

7. HANDLING AND STORAGE

Handling: Wear appropriate PPE. See section 8

Storage: Keep tightly closed and store at 2 - 8°C.
Fireproof. Separated from strong oxidants, food and feedstuffs. Cool.

8. EXPOSURE CONTROL

Respiratory Protection: Ventilation. Local exhaust or breathing protection.

Eye Protection: Safety goggles or eye protection in combination with breathing protection.

Skin Protection: Protective gloves. Protective clothing.

Ingestion: Do not eat, drink, or smoke during work. Wash hands before eating.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Viscous Colorless Solution - Precipitation may occur

Physical State: Liquid

Odor: Not Available

Odor Threshold: Not Available

pH: 5.4 - 5.8

Boiling Point: 148 °F/64 °C°C

Melting Point -98°C

Evaporation Rate: >1

Relative density (water = 1): 0.79

Solubility in water: miscible

Vapour pressure	kPa at 20°C: 12.3
Vapor Density:	(air = 1): 1.1
	Relative density of the vapour/air-mixture at 20°C (air = 1): 1.01
Vapor Pressure:	127 mm Hg
Relative Density:	Not Available
Auto-Ignition Temperature:	464°C
Water Solubility:	Not Available
Flammability:	Flammable
Flash Point:	12°C c.c.
Viscosity:	Not Available
Oxidizing Properties:	Not Available
Explosive Properties:	vol% in air: 5.5-44
Additional Parameters:	Octanol/water partition coefficient as log Pow: - 0.82/-0.66

10. STABILITY AND REACTIVITY

Chemical Stability:	Stable under normal conditions
Conditions to Avoid:	Data for 100% Methyl Alcohol: Reacts violently with oxidants. This generates fire and explosion hazard. The vapour mixes well with air, explosive mixtures are easily formed.
Incompatibility Materials to Avoid:	Strong oxidizing agents and reducing agents
Hazardous Decomposition Products:	Carbon Monoxide, Carbon Dioxide
Hazardous Polymerization:	Will not occur
Possibility of Hazardous Reactions:	Data for 100% Methyl Alcohol: Reacts violently with oxidants. This generates fire and explosion hazard. The vapour mixes well with air, explosive mixtures are easily formed.
CHEMICAL DANGERS:	Reacts violently with oxidants causing fire and explosion hazard.
PHYSICAL DANGERS:	The vapour mixes well with air, explosive mixtures are easily formed.

11. TOXICOLOGY MEASURES

Acute Toxicity

The toxicological risks are minor due to the low concentration of hazardous ingredients. The following toxicological information is for the hazardous ingredient in pure form.

	Data for 100% Methyl Alcohol: LD50 oral rat: 5630 mg/kg
LD50 Oral:	Reference: Gigiena Truda i Professional'nye Zabolevaniya. Labor Hygiene and Occupational Diseases. Vol. 19(11), Pg. 27, 1975. Acutely Toxic
	Data for 100% Methyl Alcohol: LD50 dermal Rabbit : 15800 mg/kg
LD50 Dermal:	Reference: Raw Material Data Handbook, Vol.1: Organic Solvents, 1974. Vol. 1, Pg. 74, 1974. Acutely Toxic
	Data for 100% Methyl Alcohol: LC50 inhalation rat: 83,9 mg/l/4 h
LC50 Inhalation:	Reference: Raw Material Data Handbook, Vol.1: Organic Solvents, 1974. Vol. 1, Pg. 74, 1974. Acutely Toxic

Chronic Toxicity

Carcinogenicity:	Not Available
Irritation:	Data for 100% Methyl Alcohol: Main toxic effects: Acute: Irritation to the eyes, CNS depression, systemic damage to the eyes Chronic: Neurological symptoms, irritation to the nasal mucous membranes through exposure to higher vapor concentrations, damage to the skin due to repeated contact.
Corrosivity:	Not Applicable
Sensitization:	Not Applicable
Neurological Effects:	Not Applicable
Mutagenic Effects:	Not Applicable
Reproductive Effects:	Not Applicable
Developmental Effects:	This product contains the following Proposition 65 chemicals: Methanol Type of Toxicity: developmental CAS No. 67-56-1 Date Listed: March 16, 2012
Target Organ Effects:	Data for 100% Methyl Alcohol: Eyes, skin, respiratory system, central nervous system, gastrointestinal tract
Other adverse effects:	Data for 100% Methyl Alcohol: Effects of short-term exposure The substance is irritating to the eyes, skin and respiratory tract. The substance may cause effects on the central nervous system. This may result in loss of consciousness. Exposure could cause blindness and death. The effects may be delayed. Medical observation is indicated. Effects of long-term or repeated exposure Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the central nervous system. This may result in persistent or recurring headaches and impaired vision.

12. ECOLOGICAL MEASURES

Ecotoxicity:	Data for 100% Methyl Alcohol: Acute Toxicity to Fish - LC50 Fish (96 hours) Minimum: 15000 mg/l Maximum: 29400 mg/l Median: 24000 mg/l Study number: 8 Reference: Poirier, S.H., M.L. Knuth, C.D. Anderson-Buchou, L.T. Brooke, A.R. Lima, and P.J. Shubat 1986. Comparative Toxicity of Methanol and N,N-Dimethylformamide to Freshwater Fish and Invertebrates. Bull.Environ.Contam.Toxicol. 37(4):615-621; Bengtsson, B.E., L. Renberg, and M. Tarkpea 1984. Molecular Structure and Aquatic Toxicity - an Example with C1-C13 Aliphatic Alcohols. Chemosphere 13(5/6):613-622
Persistence/Degradability:	Not Applicable
Mobility in Environmental Media:	Not Applicable
Bioaccumulation / Accumulation:	Not Applicable

13. DISPOSAL MEASURES

Waste Disposal Method: Treatment, storage and transportation must comply with all Federal, State, and Local laws concerning health and pollution.

Contaminated Packaging: Avoid contact with skin and clothing. Place contaminated packaging in a break proof outer vessel and dispose on in compliance with national and local regulations.

US EPA Waste Number: Not Available

14. TRANSPORTATION MEASURES

DOT: Data for 100% Methyl Alcohol: UN Classification
UN Hazard Class: 3 (6.1); UN Subsidiary Risks: 6.1; UN

Pack Group: II

IATA: UN1992; Flammable Liquids, Toxic, n.o.s (methanol solution), 3(6.1), E1, Excepted quantity label

ADR (road)/ RID (rail): UN1992; Flammable Liquids, Toxic, n.o.s (methanol solution), 3(6.1), E1, Excepted quantity label

IMDG (sea): UN1992; Flammable Liquids, Toxic, n.o.s (methanol solution), 3(6.1), E1, Excepted quantity label

General Transport Regulations Data for 100% Methyl Alcohol:
Transport Emergency Card: TEC (R)-30S1230.

15. REGULATORY MEASURES

This product is a mixture that may contain one or more hazardous chemicals. The hazardous ingredients listed are only those as required by 29 CFR 1910.1200 (OSHA HCS).

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains no chemical or chemicals which are subject to the reporting requirements of the Act and Title 40n of the Code of Federal Regulations, Part 372. SARA Section 311/312

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (See 40 CFR 61)

This product contains no chemicals which are subject to the reporting requirements of the Clean Air Act.

State Regulations

California Proposition 65:

This product contains the following Proposition 65 chemicals: Methanol Type of Toxicity: developmental CAS No. 67-56-1 Date Listed: March 16, 2012

State Right to Know Act

Chemical Name: **Methyl Alcohol**

Massachusetts: Listed

New Jersey: Listed

Pennsylvania: Listed

New York: Listed

Rhode Island: Listed

International Inventories

Chemical Name:	**Methyl Alcohol**
TSCAL:	Listed
DSL:	Listed
NDSL:	Not Listed
EINECS:	Listed
CHINA:	Listed
KECL:	Listed
JAPAN:	Listed
AICS:	Listed

EU Regulations

Annex I Index #:	Annex I Index# : 603-001-00-X
Classification:	See below

REACH (EU) 1907/2006

Annex I Index#	Data for 100% Methyl Alcohol: Annex I Index# : 603-001-00-X **Classification according to EC No. 1272/2008 and GHS – US**
Classification	Flammable liquids, Category 2; H225 Acute toxicity, Category 3, inhalation; H331 Acute toxicity, Category 3, dermal; H311 Acute toxicity, Category 3, oral; H301 Specific Target Organ Toxicity (single exposure), Category 2; H371
Hazard Statements	H225: Highly flammable liquid and vapour. H331: Toxic if inhaled. H311: Toxic in contact with skin. H301: Toxic if swallowed. H371: May cause damage to organs.
Precautionary statements	P210: Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking. P233: Keep container tightly closed. P240: Ground/bond container and receiving equipment. P241: Use explosion-proof electrical/ ventilating/ lighting equipment. P242: Use only non-sparking tools. P243: Take precautionary measures against static discharge. P280: Wear protective gloves/ protective clothing/ eye protection/ face protection. P260: Do not breathe dust/ fume/ gas/mist/ vapours/ spray. P271: Use only outdoors or in a well-ventilated area. P284: Wear respiratory protection. P264 : Wash skin thoroughly after handling. P270: Do not eat, drink or smoke when using this product.
Symbols and Indications of Danger	GHS02 GHS06 GHS08 Dgr: Danger
Specific Concentration Limits	STOT SE 1; H370: C >= 10 % STOT SE 2; H371: 3 % <= C < 10 %
Export and Import	This substance is not listed in the Annex I of Regulation (EC) No 649/2012.

European Priority List This substance is not listed in a priority list (as foreseen under Council Regulation (EEC) No 793/93 on the evaluation and control of the risks of existing substances.).

16. OTHER INFORMATION

The above information is believed to be accurate, complete and current but does not purport to be all inclusive and shall be used as a guide. LGC Clinical Diagnostics, Inc makes no representation or warranties with respect to the product described herein, including but not limited to any implied warranties or merchantability or fitness for a particular use. LGC Clinical Diagnostics, Inc assumes no liability or responsibility and authorizes no other person to assume any additional liability or responsibility as a result of the use of this product or the information contained in the Safety Data Sheet.