

Safety Data Sheet



Revision Date: 8/1/2014

MSDS #: 10329

4 CN Peroxidase Substrate

1. PRODUCT AND COMPANY IDENTIFICATION

Product Description:	Product Code
4 CN Substrate	50-73-03
4 CN Substrate	50-73-01
4 CN Substrate	50-73-02

Hazardous Reagent

4 CN Substrate

Hazardous Reagent Product code

Catalog No. listed above

Recommended Use Reagent

Contact Manufacturer KPL, Inc.
910 Clopper Road
Gaithersburg, Maryland 20878
USA

Phone #: 1-301-948-7755

Fax #: 1-301-948-0169

Web: www.kpl.com

Email: kplmsds@seracare.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

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

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 Statement 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 Statement 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.

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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 of Danger

GHS02 GHS06 GHS08 Dgr: Danger

**Data for 100% Hazardous Chemical**

ROUTES OF EXPOSURE: The substance can be absorbed into the body by inhalation and through the skin and by ingestion.

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.

The product is a Mixture. It May Cause the following symptoms.

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).

3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Component</u>	<u>CHEMICAL</u>	<u>% Weight</u>	<u>CAS #:</u>
4 CN Peroxidase Substrate	Methyl Alcohol	<20%	67-56-1

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**Data for 100% Hazardous Chemical**

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

Inhalation First Aid: Fresh air, rest. Refer for medical attention.

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

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

5. FIRE FIGHTING MEASURES**Data For 100% Hazardous Chemical**

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.	

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Data for 100% Methyl Alcoho (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 Alcoho (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.
Methods of Clean-up	Clean up of spills requires no special equipment or procedures. Clean with copious amounts of water.
Other Information	Not Applicable

Data for 100% Hazardous Chemical

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.
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7. HANDLING AND STORAGE

Handling:	Wear appropriate PPE. See section 8
Storage:	Keep tightly closed and store at 2 - 8°C.

Data for 100% Hazardous Chemical

STORAGE	Fireproof. Separated from strong oxidants, food and feedstuffs . Cool.
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8. EXPOSURE CONTROL

Data for 100% Hazardous Chemical

• INHALATION	Ventilation. Local exhaust or breathing protection.
• EYES	Safety goggles or eye protection in combination with breathing protection.
• SKIN	Protective gloves. Protective clothing.
• INGESTION	Do not eat, drink, or smoke during work. Wash hands before eating.

Engineering Controls Not Available

9. PHYSICAL AND CHEMICAL PROPERTIES

MSDS #: 10329

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Appearance

Viscous Colorless Solution - Precipitation may occur

Physical State

Liquid

pH: 5.4 - 5.8

Data for 100% Hazardous Chemical

Boiling point: °C	Melting point: -98°C	Relative density (water = 1): 0.79	Solubility in water: miscible	Vapour pressure, kPa at 20°C: 12.3
Relative vapour density (air = 1): 1.1	Relative density of the vapour/air-mixture at 20°C (air = 1): 1.01	Flash point: 12°C c.c.	Auto-ignition temperature: 464°C	Explosive limits, vol% in air: 5.5-44
				Octanol/water partition coefficient as log Pow: -0.82/-0.66

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal conditions
Incompatibility Materials to Avoid	Strong oxidizing agents and reducing agents
Hazardous Decomposition Products	Carbon Monoxide, Carbon Dioxide
Hazardous Polymerization	Will not occur

Data for 100% Hazardous Chemical

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.

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

Chronic Toxicity

Carcinogenicity	Not Applicable
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

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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 Available
Mobility in Environmental Media	Not Available
Bioaccumulation/Accumulation	Not Available

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; UN Subsidiary Risks: 6.1; UN Pack Group: II
IATA:	Not Available
ADR (road)/ RID (rail):	Not Available
IMDG (sea):	Not Available
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 and Title 40n of the Code of Federal Regulations, Part 372.

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

Not Listed

State RegulationsCalifornia 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
TSCA	Listed
DSL	Listed
NDSL	Not Listed
EINECS	Listed
CHINA	Listed
KECL	Listed
JAPAN:	Listed
AICS	Listed

EU Regulations

Annex I Index#	Data for 100% Methyl Alcohol: Annex I Index# : 603-001-00-X
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
Risk Phrases	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.
Safety Phrases	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.

16. OTHER INFORMATION

The above information is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. KPL shall not be held liable for any damage resulting from handling or from contact with the above product. Users should make their own investigations to determine the suitability of the information for their particular purposes. This material is sold for research purposes and is intended as laboratory reagents only. It is not intended for food, drug, household, agricultural or cosmetic use. Its use must be supervised by a technically qualified individual experienced in handling potentially hazardous chemicals.

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