

according to Regulation (EC) No. 1907/2006 as amended by (EC) No. 1272/2008

Section 1. Identification of the Substance/Mixture and of the Company/Undertaking

- 1.1 Product Code:** 44001
Product Name: Hydroperoxy HPLC Mixture
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:**
Relevant identified uses: For research use only, not for human or veterinary use.
- 1.3 Details of the Supplier of the Safety Data Sheet:**
- Company Name:** Cayman Chemical Company
1180 E. Ellsworth Rd.
Ann Arbor, MI 48108
- Web site address:** www.caymanchem.com
- Information:** Cayman Chemical Company +1 (734)971-3335
- 1.4 Emergency telephone number:**
- Emergency Contact:** CHEMTREC Within USA and Canada: +1 (800)424-9300
CHEMTREC Outside USA and Canada: +1 (703)527-3887

Section 2. Hazards Identification

- 2.1 Classification of the Substance or Mixture:**
- 2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]:**
Flammable Liquids, Category 2
- 2.2 Label Elements:**
- 2.2.1 Labeling according to Regulation (EC) No 1272/2008 [CLP]:**

**GHS Signal Word:** Danger**GHS Hazard Phrases:**

H225: Highly flammable liquid and vapor.

GHS Precaution Phrases:

P210: Keep away from {heat/sparks/open flames/hot surfaces}. - No smoking.

P280: Wear {protective gloves/protective clothing/eye protection/face protection}.

GHS Response Phrases:

P303+361+353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.

GHS Storage and Disposal Phrases:

Please refer to Section 7 for Storage and Section 13 for Disposal information.

- 2.3 Adverse Human Health** Material may be irritating to the mucous membranes and upper respiratory tract.
- Effects and Symptoms:** May be harmful by inhalation, ingestion, or skin absorption.
May cause eye, skin, or respiratory system irritation.
To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

Section 3. Composition/Information on Ingredients

CAS # / RTECS #	Hazardous Components (Chemical Name)/ REACH Registration No.	Concentration	EC No./ EC Index No.	GHS Classification
71774-08-8 JX3867000	5(S)-HpETE	0.002 %	NA NA	No data available.
64-17-5 KQ6300000	Ethyl alcohol	99.99 %	200-578-6 603-002-00-5	Flam. Liq. 2: H225
71774-10-2 NA	12(S)-HpETE	0.002 %	NA NA	No data available.
70981-96-3 NA	15(S)-HpETE	0.002 %	NA NA	Skin Corr. 2: H315 Eye Damage 2A: H319 STOT (SE) 3: H335 H336
29774-12-7 NA	9(S)-HpODE	0.002 %	NA NA	No data available.
33964-75-9 NA	13(S)-HpODE	0.002 %	NA NA	No data available.

Section 4. First Aid Measures

- 4.1 Description of First Aid Measures:** No data available.
- In Case of Inhalation:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
- In Case of Skin Contact:** Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
- In Case of Eye Contact:** Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.
- In Case of Ingestion:** Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.
- 4.2 Important Symptoms and Effects, Both Acute and Delayed:** May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects.

Section 5. Fire Fighting Measures

- 5.1 Suitable Extinguishing Media:** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray. Use water spray to cool fire-exposed containers.
- Unsuitable Extinguishing Media:** A solid water stream may be inefficient.
- 5.2 Flammable Properties and Hazards:** Can release vapors that form explosive mixtures at temperatures at or above the flashpoint.
- Container explosion may occur under fire conditions.
 Emits toxic fumes under fire conditions.
 Sensitive to static discharge.
 Vapors can travel to a source of ignition and flash back.
- Flash Pt:** 14.00 C Method Used: Closed Cup
- Explosive Limits:** LEL: 3.3% at 25.0 C UEL: 19.0% at 25.0 C
- Autoignition Pt:** 363.00 C
- 5.3 Fire Fighting Instructions:** As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or

equivalent), and full protective gear to prevent contact with skin and eyes.

Note: Flammable as diluted in ethanol.

Section 6. Accidental Release Measures

- 6.1 Protective Precautions,** Avoid breathing vapors and provide adequate ventilation.
Protective Equipment and As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator,
Emergency Procedures: and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).
- 6.2 Environmental** Take steps to avoid release into the environment, if safe to do so.
Precautions:
- 6.3 Methods and Material For** Contain spill and collect, as appropriate.
Containment and Cleaning Transfer to a chemical waste container for disposal in accordance with local regulations.
Up:

Section 7. Handling and Storage

- 7.1 Precautions To Be Taken** Avoid breathing dust/fume/gas/mist/vapours/spray.
in Handling: Avoid prolonged or repeated exposure.
 Keep away from sources of ignition.
 Take precautionary measures against static discharge.
- 7.2 Precautions To Be Taken** Keep away from heat, sparks, and flame.
in Storing: Keep container tightly closed.
 Store in accordance with information listed on the product insert.
- Other Precautions:** Hygroscopic.

Section 8. Exposure Controls/Personal Protection

8.1 Exposure Parameters:

CAS #	Partial Chemical Name	Britain EH40	France VL	Europe
71774-08-8	5(S)-HpETE	No data.	No data.	No data.
64-17-5	Ethyl alcohol	TWA: 1920 mg/m3 (1000 ppm) STEL: ()	TWA: 1900 mg/m3 (1000 ppm) STEL: 9500 mg/m3 (5000 ppm)	No data.
71774-10-2	12(S)-HpETE	No data.	No data.	No data.
70981-96-3	15(S)-HpETE	No data.	No data.	No data.
29774-12-7	9(S)-HpODE	No data.	No data.	No data.
33964-75-9	13(S)-HpODE	No data.	No data.	No data.
CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
71774-08-8	5(S)-HpETE	No data.	No data.	No data.
64-17-5	Ethyl alcohol	PEL: 1000 ppm	TLV: 1000 ppm	No data.
71774-10-2	12(S)-HpETE	No data.	No data.	No data.
70981-96-3	15(S)-HpETE	No data.	No data.	No data.
29774-12-7	9(S)-HpODE	No data.	No data.	No data.
33964-75-9	13(S)-HpODE	No data.	No data.	No data.

8.2 Exposure Controls:	
8.2.1 Engineering Controls (Ventilation etc.):	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
8.2.2 Personal protection equipment:	
Eye Protection:	Safety glasses
Protective Gloves:	Compatible chemical-resistant gloves
Other Protective Clothing:	Lab coat
Respiratory Equipment (Specify Type):	NIOSH approved respirator, as conditions warrant.
Work/Hygienic/Maintenance Practices:	Do not take internally. Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower. Wash thoroughly after handling. No data available.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties	
Physical States:	<input type="checkbox"/> Gas <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Solid
Appearance and Odor:	Solution
Melting Point:	No data.
Boiling Point:	No data.
Flash Pt:	14.00 C Method Used: Closed Cup
Evaporation Rate:	No data.
Explosive Limits:	LEL: 3.3% at 25.0 C UEL: 19.0% at 25.0 C
Vapor Pressure (vs. Air or mm Hg):	43 MM_HG at 20.0 C
Vapor Density (vs. Air = 1):	No data.
Specific Gravity (Water = 1):	No data.
Solubility in Water:	No data.
Autoignition Pt:	363.00 C
9.2 Other Information	
Percent Volatile:	No data.

Section 10. Stability and Reactivity

10.1 Reactivity:	No data available.
10.2 Stability:	Unstable <input type="checkbox"/> Stable <input checked="" type="checkbox"/>
10.3 Stability Note(s):	Stable if stored in accordance with information listed on the product insert.
Polymerization:	Will occur <input type="checkbox"/> Will not occur <input checked="" type="checkbox"/>
10.4 Conditions To Avoid:	heat, flames and sparks
10.5 Incompatibility - Materials To Avoid:	alkali metals ammonia peroxides strong oxidizing agents
10.6 Hazardous Decomposition Or Byproducts:	carbon dioxide carbon monoxide

Section 11. Toxicological Information

11.1 Information on Toxicological Effects:	<p>The toxicological effects of this product have not been thoroughly studied.</p> <p>Ethanol - Toxicity Data: Oral TDLO (man): 1.14 ml/kg; Oral TDLO (man): 650 mg/kg; Oral LD50 (rat): 7,060 mg/kg; Oral LD50 (mouse): 3,450 mg/kg; Oral LD50 (mouse): 10.5 ml/kg; Oral LD50 (rabbit): 6,300 mg/kg; Inhalation LC50 (rat): 20,000 ppm (10h); Inhalation TCLO (human): 1,800 ppm (30m); Inhalation TCLO (human): 2,500 mg/m³ (20m); Inhalation LC50 (rat): 5,900 mg/m³ (6h); Inhalation LCLO (mouse): 29,300 ppm (7h);</p> <p>Ethanol - Irritation Data: Eyes (rabbit): 500 mg (24h) mild; Skin (rabbit): 20 mg (24h) moderate;</p>
Chronic Toxicological Effects:	<p>Ethanol - Investigated as a mutagen, reproductive effector, and tumorigen.</p> <p>Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information.</p> <p>Ethanol RTECS Number: KQ6300000 5(S)-HpETE RTECS Number: JX3867000</p>
Carcinogenicity:	<p>NTP? No IARC Monographs? No OSHA Regulated? No</p>

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
71774-08-8	5(S)-HpETE	n.a.	n.a.	n.a.	n.a.
64-17-5	Ethyl alcohol	n.a.	1	A4	n.a.
71774-10-2	12(S)-HpETE	n.a.	n.a.	n.a.	n.a.
70981-96-3	15(S)-HpETE	n.a.	n.a.	n.a.	n.a.
29774-12-7	9(S)-HpODE	n.a.	n.a.	n.a.	n.a.
33964-75-9	13(S)-HpODE	n.a.	n.a.	n.a.	n.a.

Section 12. Ecological Information

12.1 Toxicity:	<p>Avoid release into the environment.</p> <p>Runoff from fire control or dilution water may cause pollution.</p>
12.2 Persistence and Degradability:	No data available.
12.3 Bioaccumulative Potential:	No data available.
12.4 Mobility in Soil:	No data available.
12.5 Results of PBT and vPvB assessment:	No data available.
12.6 Other adverse effects:	No data available.

Section 13. Disposal Considerations

13.1 Waste Disposal Method:	Dispose in accordance with local, state, and federal regulations.
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Section 14. Transport Information

14.1 LAND TRANSPORT (US DOT):

DOT Proper Shipping Name: Ethyl Alcohol Solution
DOT Hazard Class: 3 FLAMMABLE LIQUID
UN/NA Number: 1170 **Packing Group:** II


14.1 LAND TRANSPORT (European ADR/RID):

ADR/RID Shipping Name: Ethyl Alcohol Solution
UN Number: 1170 **Packing Group:** II
Hazard Class: 3 - FLAMMABLE LIQUID

14.3 AIR TRANSPORT (ICAO/IATA):

ICAO/IATA Shipping Name: Ethyl Alcohol Solution
UN Number: 1170 **Packing Group:** II
Hazard Class: 3 - FLAMMABLE LIQUID **IATA Classification:** 3

Additional Transport Information: Transport in accordance with local, state, and federal regulations.
 When sold in quantities of less than or equal to 1 mL, or 1 g, with an Excepted Quantity Code of E1, E2, E4, or E5, this item meets the De Minimis Quantities exemption, per IATA 2.6.10.
 Therefore packaging does not have to be labeled as Dangerous Goods/Excepted Quantity.

Section 15. Regulatory Information

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
71774-08-8	5(S)-HpETE	No	No	No
64-17-5	Ethyl alcohol	No	No	No
71774-10-2	12(S)-HpETE	No	No	No
70981-96-3	15(S)-HpETE	No	No	No
29774-12-7	9(S)-HpODE	No	No	No
33964-75-9	13(S)-HpODE	No	No	No

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
71774-08-8	5(S)-HpETE	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No
64-17-5	Ethyl alcohol	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
71774-10-2	12(S)-HpETE	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No
70981-96-3	15(S)-HpETE	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No
29774-12-7	9(S)-HpODE	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No
33964-75-9	13(S)-HpODE	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No



SAFETY DATA SHEET

Hydroperoxy HPLC Mixture

Revision: 03/23/2015
Supersedes Revision: 01/11/2007

Regulatory Information Statement: This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC) No.1272/2008.

Section 16. Other Information

Revision Date: 03/23/2015

Additional Information About This Product: No data available.

This Product:

Company Policy or Disclaimer: DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.