

Cayman Chemical Company
1180 E. Ellsworth Rd.
Ann Arbor, MI 48108



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

Product Code: 600052
Product Name: Cell-Based Assay Hydrogen Peroxide Detector ADHP
Intended Use: For research use only, not for human or veterinary use.
Manufacturer Information
Company Name: Cayman Chemical Company
Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300
Alternate Emergency Contact: CHEMTREC Outside USA and Canada: +1 (703)527-3887
Information: Cayman Chemical Company +1 (734)971-3335
Web site address: www.caymanchem.com

2. Hazards Identification

GHS Classification	Placard	Key word	GHS Hazard
Acute Toxicity: Oral, Category 4	Exclamation point	Warning	Harmful if swallowed
Flammable Liquids, Category 4	none	Warning	Combustible liquid
Serious Eye Damage/Eye Irritation, Category 2A	Exclamation point	Warning	Causes serious eye irritation
Skin Corrosion/Irritation, Category 2	Exclamation point	Warning	Causes skin irritation

GHS Hazard Phrases:
H302: Harmful if swallowed.
H227: Combustible liquid.
H319: Causes serious eye irritation
H315: Causes skin irritation.

GHS Precaution Phrases:
P264: Wash hands thoroughly after handling.
P280: Wear protective gloves/clothing and eye/face protection as specified by the manufacturer/supplier or the competent authority.
P210: Keep away from {heat/sparks/open flames/hot surfaces}. - No smoking.

GHS Response Phrases:
P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P330: Rinse mouth.
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+313: If eye irritation persists, get medical advice/attention.
P302+352: IF ON SKIN: Wash with plenty of soap and water.
P332+313: If skin irritation occurs, get medical advice/attention.
P362: Take off contaminated clothing and wash before re-use.

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

Route(s) of Entry:
Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes Other: Injection

Potential Health Effects (Acute and Chronic):
Causes eye and skin irritation.
DMSO has the potential to carry toxic materials or materials of unknown toxicity into the body.
DMSO is readily absorbed through skin.
Harmful if swallowed.
Material may be irritating to the mucous membranes and upper respiratory tract.
May be harmful by inhalation or skin absorption.
May cause respiratory system irritation.

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Supercedes Revision: 05/15/2009

Target Organs:	Eyes, Reproductive system, Kidneys, Respiratory system, Liver, Skin.
LD 50 / LC 50:	Please refer to Section 11.
Signs and Symptoms Of Exposure:	Exposure may cause: hematuria or shortness of breath (dyspnea). Exposure may cause: gastrointestinal irritation with nausea, vomiting, diarrhea, headache, dizziness, and drowsiness. Eye contact may cause blurry vision, burning sensation, redness, tearing, and vasodilation. To the best of our knowledge, the toxicological properties have not been thoroughly investigated.
Medical Conditions Generally Aggravated By Exposure:	No data available.

3. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Concentration	EC#	Risk Phrases	RTECS #
1. 10-Acetyl-3,7-dihydroxyphenoxazine (ADHP)	119171-73-2	1.0 -10.0 %	NA	R22	NA
2. Dimethyl sulfoxide, anhydrous	67-68-5	90.0 -99.0 %	200-664-3	R36/38	PV6210000

4. First Aid Measures

Emergency and First Aid Procedures:	
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 20 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 20 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.
Indication of any immediate medical attention and special treatment needed:	No data available.

5. Fire Fighting Measures

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.
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:	89.00 C Method Used: Closed Cup
Autoignition Pt:	215.00 C
Explosive Limits:	LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C
Hazardous Combustion Products:	No data available.
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: Combustible as diluted in dimethyl sulfoxide

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6. Accidental Release Measures

Protective Precautions, Protective Equipment and Emergency Procedures:	Avoid breathing vapors and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).
Environmental Precautions:	Take steps to avoid release into the environment, if safe to do so.
Steps To Be Taken In Case Material Is Released Or Spilled:	Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations.

7. Handling and Storage

Precautions To Be Taken in Handling:	Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid prolonged or repeated exposure. Keep away from sources of ignition. Take precautionary measures against static discharge.
Precautions To Be Taken in Storing:	Keep away from heat, sparks and flame. Keep container tightly closed. Store in accordance with information listed on the product insert.
Other Precautions:	Air sensitive. Hygroscopic. Light sensitive.
Hazard Label Information:	Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation. Wash thoroughly after handling.

8. Exposure Controls/Personal Protection

Hazardous Components (Chemical Name)	CAS #	OSHA PEL	ACGIH TLV	Other Limits
1. 10-Acetyl-3,7-dihydroxyphenoxazine (ADHP)	119171-73-2	No data.	No data.	No data.
2. Dimethyl sulfoxide, anhydrous	67-68-5	No data.	No data.	No data.
Hazardous Components (Chemical Name)	CAS #	Britain EH40	France VL	Europe
1. 10-Acetyl-3,7-dihydroxyphenoxazine (ADHP)	119171-73-2	No data.	No data.	No data.
2. Dimethyl sulfoxide, anhydrous	67-68-5	No data.	No data.	No data.

Protective Equipment Summary - Hazard Label Information:	Compatible chemical-resistant gloves Eye wash station in work area Lab coat Safety glasses Safety shower in work area Vent Hood
Engineering Controls (Ventilation etc.):	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
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.
Environmental Exposure Controls:	No data available.

9. Physical and Chemical Properties

Information on Basic Physical and Chemical Properties

Physical States:	[] Gas [X] Liquid [] Solid
Appearance and Odor:	Solution
Melting Point:	No data.

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Boiling Point:	No data.
Flash Pt:	89.00 C Method Used: Closed Cup
Evaporation Rate:	No data.
Explosive Limits:	LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C
Vapor Pressure (vs. Air or mm Hg):	0.37 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:	215.00 C
Explosive Properties:	No data available.
Oxidizing Properties:	No data available.
Other Information	
Percent Volatile:	No data.

10. Stability and Reactivity

Reactivity:	No data available.
Stability:	Unstable [] Stable [X]
Stability Note(s):	Stable if stored in accordance with information listed on the product insert.
Conditions To Avoid:	heat, flames and sparks
Polymerization:	Will occur [] Will not occur [X]
Incompatibility - Materials To Avoid:	acid chlorides phosphorus halides strong acids alkali metals strong oxidizing agents strong reducing agents
Hazardous Decomposition Or Byproducts:	carbon monoxide carbon dioxide nitrogen oxides sulfur oxides

11. Toxicological Information

Toxicological Information:	The toxicological effects of this product have not been thoroughly studied.
	DMSO - Toxicity Data: Oral LD50 (rat): 14,500 mg/kg; Skin LD50 (rat): 40,000 mg/kg; Oral LD50 (mouse): 7,920 mg/kg; Skin LD50 (mouse): 50,000 mg/kg; Skin TDLO (woman): 1,800 mg/kg; Inhalation LC50 (rat): >1,600 mg/m3 (4h); DMSO - Irritation Data: Eyes (rabbit): 100 mg mild; Skin (rabbit): 500 mg (24h) mild;
Chronic Toxicological Effects:	DMSO - Investigated as a mutagen, reproductive effector, and tumorigen. Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information. DMSO RTECS Number: PV6210000

Hazardous Components (Chemical Name)	CAS #	NTP	IARC	ACGIH	OSHA
1. 10-Acetyl-3,7-dihydroxyphenoxazine (ADHP)	119171-73-2	n.a.	n.a.	n.a.	n.a.
2. Dimethyl sulfoxide, anhydrous	67-68-5	n.a.	n.a.	n.a.	n.a.

Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No



SAFETY DATA SHEET

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12. Ecological Information

General Ecological Information: Avoid release into the environment.
Runoff from fire control or dilution water may cause pollution.

13. Disposal Considerations

Waste Disposal Method: Dispose in accordance with local, state, and federal regulations.

14. Transport Information

Globally Harmonized System of Classification and Labelling

Acute Toxicity: Oral, Category 4 - Warning! Harmful if swallowed
Flammable Liquids, Category 4 - Warning! Combustible liquid
Serious Eye Damage/Eye Irritation, Category 2A - Warning! Causes serious eye irritation
Skin Corrosion/Irritation, Category 2 - Warning! Causes skin irritation

LAND TRANSPORT (US DOT)

DOT Proper Shipping Name Not dangerous goods.

LAND TRANSPORT (European ADR/RID)

ADR/RID Shipping Name Not dangerous goods.

AIR TRANSPORT (ICAO/IATA)

ICAO/IATA Shipping Name Not dangerous goods.

Additional Transport Information: Transport in accordance with local, state, and federal regulations.

15. Regulatory Information

European Community Hazard Symbol codes Xn: Harmful

European Community Risk and Safety Phrases

R22 - Harmful if swallowed.
R36/38 - Irritating to eyes and skin.
S24/25 - Avoid contact with skin and eyes.
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible.)

US EPA SARA Title III

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. 10-Acetyl-3,7-dihydroxyphenoxazine (ADHP)	119171-73-2	No	No	No	No
2. Dimethyl sulfoxide, anhydrous	67-68-5	No	No	No	No

Other US EPA or State Lists

Hazardous Components (Chemical Name)	CAS #	CAA HAP,ODC	CWA NPDES	TSCA	CA PROP.65
1. 10-Acetyl-3,7-dihydroxyphenoxazine (ADHP)	119171-73-2	No	No	No	No
2. Dimethyl sulfoxide, anhydrous	67-68-5	No	No	Inventory	No

Regulatory Information Statement: This SDS was prepared in accordance with 29 CFR 1910.1200, Regulation (EC) No.1272/2008, and European Directive 67/548/EEC as amended.

16. Other Information

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Company Policy or Disclaimer

For research use only, not for human or veterinary use.
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.

N.A.=Not available, N.P.=Not applicable, N.D.=Not determined, N.E.=Not established, N.R.=Not required