

SDS DATE: August 04, 2023

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Hydrogen Peroxide Assay
PRODUCT CODE: Cat# MA-0145
RESTRICTIONS ON USE: For laboratory research purposes. Not for drug or household use.
MANUFACTURER: AkrivisBio, Inc.
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SECTION 2: HAZARDS IDENTIFICATION

Component	Description	Volume	Safety Information
Assay Buffer	Proprietary Buffer	30 ml	No hazards
Probe	In DMSO	1 vial	See below
HRP	Lyophilized	1 vial	No hazards
H2O2 Standard	Liquid (contains 3% H2O2)	1 vial	See below

DMSO:**Emergency Overview****OSHA Hazards:** Combustible liquid, Target organ effect**Target Organs:** Eyes, Skin**GHS Classification:** Flammable liquids (Category 4)**GHS Label elements, including precautionary statements****Pictogram:** none**Signal word:** Warning**Hazard statement(s):** H227 Combustible liquid**Precautionary statement(s):** none**HMIS Classification**

Health hazard: 0

Chronic Health Hazard: *

Flammability: 2

Physical hazards: 0

NFPA Rating

Health hazard: 0

Fire: 2

Reactivity Hazard: 0

Potential Health Effects**Inhalation:** May be harmful if inhaled. May cause respiratory tract irritation.**Skin:** May be harmful if absorbed through skin. May cause skin irritation.**Eyes:** May cause eye irritation.**Ingestion:** May be harmful if swallowed.**Aggravated Medical Condition:** Avoid contact w/DMSO solutions containing toxic materials or materials with unknown toxicological properties. DMSO is readily absorbed through skin and may carry such materials into the body.**Hydrogen Peroxide:****Emergency Overview****OSHA Hazards:** Skin irritation ,Serious eye damage**Target organs:** Eyes, skin**GHS Classification:** Skin irritation (category 2)
Serious eye damage (Category 1)**Pictogram:****Signal Word:** warning**Hazard statement(s):** H315 Causes skin irritation

H318: Causes serious eye damage

Precautionary statements (GHS-US) : P264 - Wash exposed skin thoroughly after handling

P280 - Wear protective gloves, eye protection

P302+P352 - IF ON SKIN: Wash with plenty of soap and water

P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact

lenses, if present and easy to do. Continue rinsing

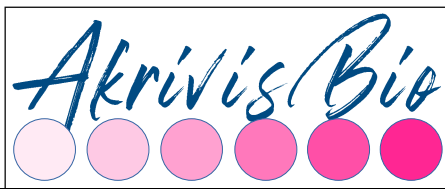
P310 - Immediately call a POISON CENTER or doctor/physician

P332+P313 - If skin irritation occurs: Get medical advice/attention

P362 - Take off contaminated clothing and wash before reuse

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Number	EC-No.	Molecular Weight	Chemical Formula
DMSO	60-00-4	200-449-4	292.24	C ₁₀ H ₁₆ N ₂ O ₈
Hydrogen Peroxide	7722-84-1	:231-765-0	34	H ₂ O ₂



SECTION 4: FIRST AID MEASURES

General Inhalation: Normal use of this product does not pose an inhalation hazard. However, should respiratory tract irritation develop, discontinue use and remove to fresh air. Get medical attention if irritation or other symptoms develop or persist.

Skin: Should irritation develop, discontinue use. Wash affected skin thoroughly with soap and water. Get medical attention if irritation or other symptoms develop or persist.

Eye: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Ingestion: If swallowed, DO NOT induce vomiting. Get medical attention immediately.

SECTION 5: FIRE-FIGHTING MEASURES

DMSO:

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters: Wear self-contained breathing apparatus for firefighting if necessary.

Hazardous combustion products: Hazardous decomposition products formed under fire conditions— see section 10.

Further information: Use water spray to cool unopened containers.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions: Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods for cleaning up: Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.

Recommended storage temperature: room temperature

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Components	CAS-No.	Value	Control parameters	Basis
Hydrogen peroxide	7722-84-1	TWA	1ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks:	Eye, skin, & upper respiratory tract irritation.			
		TWA	1 mg/m ³	USA. Occupational Exposure Limits (OSHA) – Table Z-1: Limits for Air Contaminants
		TWA	1ppm, 1.4 mg/m ³	USA. NIOSH Recommended Exposure Limits
Dimethyl sulfoxide	67-68-5	TWA	250.000000 ppm	USA. Workplace Environmental Exposure Levels (WEEL)

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection

Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

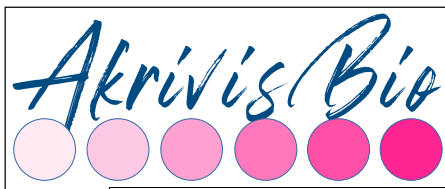
Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Property	Hydrogen peroxide	DMSO
Appearance:	Clear colorless liquid	Clear colorless liquid
pH:	Not applicable	Not applicable
Water Solubility:	miscible	miscible
Other Solubility:	No data available	No data available
Boiling Point (°C):	No data available	189°C
Melting Point (°C):	No data available	16-19°C
Flash Point (°C):	No data available	89°C
Ignition Temp. (°C):	No data available	300-302°C
Density:	No data available	1.1 g/ml

SECTION 10: STABILITY AND REACTIVITY



Property	Hydrogen peroxide	DMSO
Chemical stability:	Stable under recommended storage conditions	
Conditions to avoid:	Direct sunlight, Extreme temperatures	Heat. Flame, sparks
Materials to avoid:	Reducing agents, strong bases, metals, combustible materials	Oxidizing agents
Hazardous decomposition products:	oxygen	Carbon oxides, sulfur oxides

SECTION 11: TOXICOLOGICAL INFORMATION

Hydrogen peroxide:

Acute toxicity: LD50 Oral – rat > 90000 mg/kg

Skin corrosion/irritation: causes skin irritation

Serious eye damage/eye irritation: causes serious eye damage

Respiratory or skin sensitization: not classified

Germ cell mutagenicity: not classified

Carcinogenicity: not classified.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Specific target organ toxicity - single exposure (GHS): no data available

Specific target organ toxicity - repeated exposure (GHS): no data available

Aspiration hazard: no data available

Potential health effects

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.

Skin: Causes skin irritation.

Eyes: Causes eye damage

Ingestion: Harmful if swallowed

DMSO:

Acute toxicity: LD50 Oral – rat – 14500 mg/kg

LC50 Inhalation – Rat – 4h – 40250 ppm

LC50 Dermal – Rabbit - > 5000 mg/kg

Skin corrosion/irritation: Skin – rabbit – no data available

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: Mouse lymphocyte Cytogenetic analysis

Mouse lymphocyte: Mutation in mammalian somatic cells

Rat: Cytogenetic analysis

Mouse: DNA damage

Carcinogenicity: Carcinogenicity - Rat - Oral

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Skin and Appendages: Other: Tumors.

Carcinogenicity - Mouse - Oral

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Leukaemia Skin and Appendages: Other: Tumors.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

Reproductive toxicity - Rat - Intraperitoneal

Effects on Fertility: Abortion.

Reproductive toxicity - Rat - Intraperitoneal

Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Reproductive toxicity - Rat - Subcutaneous

Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Effects on Fertility: Litter size (e.g., # fetuses per litter; measured before birth).

Reproductive toxicity - Mouse - Oral

Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific

Developmental Abnormalities: Musculoskeletal system.

Developmental Toxicity - Mouse - Intraperitoneal

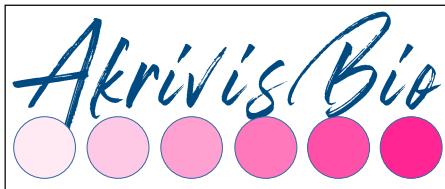
Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system.

Specific target organ toxicity - single exposure (GHS): no data available

Specific target organ toxicity - repeated exposure (GHS): no data available

Aspiration hazard: no data available

Potential health effects



Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

Ingestion: Effects due to ingestion may include: Nausea, Fatigue, Headache

Signs and Symptoms of Exposure: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional information: RTECS: PV6210000

SECTION 12: ECOLOGICAL INFORMATION

Hydrogen peroxide: No additional information available

DMSO:

Toxicity

Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 34,000 mg/l - 96 h

LC50 - Oncorhynchus mykiss (rainbow trout) - 35,000 mg/l - 96 h

Toxicity to daphnia and

other aquatic

invertebrates

EC50 - Daphnia magna (Water flea) - 24,600 mg/l - 48 h

(OECD Test Guideline 202)

Toxicity to algae EC50 - Pseudokirchneriella subcapitata (green algae) - 17,000 mg/l - 72 h

(OECD Test Guideline 201)

12.2 Persistence and degradability

Biodegradability Result: 31 % - According to the results of tests of biodegradability this product

is not readily biodegradable.

(OECD Test Guideline 301D)

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

SECTION 13: DISPOSAL CONSIDERATIONS

Product: Observe all federal, state, and local environmental regulations.

Contaminated packaging: avoid release to the environment

SECTION 14: TRANSPORT INFORMATION

Hydrogen peroxide:

No dangerous goods in sense of transport regulations

DMSO:

DOT (US)

NA-Number: 1993 Class: NONE Packing group: III

Proper shipping name: Combustible liquid, n.o.s. (Dimethyl sulfoxide)

Reportable Quantity (RQ):

Poison Inhalation Hazard: No

IMDG

Not dangerous goods

IATA

Not dangerous goods

SECTION 15: REGULATORY INFORMATION

SARA 302 Components: SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Massachusetts Right To Know Components: No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components: DMSO, CAS-No. 67-68-5

New Jersey Right To Know Components: DMSO, CAS-No. 67-68-5

California Prop. 65 Components: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm

SECTION 16: OTHER INFORMATION:

DISCLAIMER:

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. AkrivisBio Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.