



SDS DATE: September 04, 2023

**SECTION 1: PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NAME:** Alcohol Dehydrogenase Activity Assay Kit  
**PRODUCT CODES:** Cat# MA-0162  
**MANUFACTURER:** AkrivisBio, Inc.  
**ADDRESS:** 48511 Warm Springs Blvd., Suite 213, Fremont, CA 94539  
**EMERGENCY PHONE:** 408-739-9315  
**OTHER CALLS:**  
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**EMAIL:** [sds@akrivosbio.com](mailto:sds@akrivosbio.com)

**SECTION 2: HAZARDS IDENTIFICATION**

Component	Description	Volume	Safety Information
ADH Assay Buffer	Proprietary Buffer	25 ml	No hazards
Ethanol	Ethanol solution	1.5 ml	See below
Developer	Lyophilized	n/a	No hazards
ADH Positive Control	Lyophilized	n/a	No hazards
NADH Standard	Lyophilized	n/a	No hazards

**Ethanol:****Emergency Overview****OSHA Hazards:** Combustible liquid, Target organ effect, Irritant, Carcinogen**Target Organs:** Nerves, Liver, Heart**GHS Classification:** Flammable liquids (Category 3)  
Skin irritation (Category 2)  
Eye irritation (Category 2B)  
Specific target organ toxicity – single exposure (Category 3)**GHS Label elements, including precautionary statements****Pictogram:****Signal word:**

Warning

**Hazard statement(s):**H226 Flammable liquid and vapor.  
H302: Harmful if swallowed  
H315+H320 Causes skin and eye irritation.  
H335 May cause respiratory irritation.**Precautionary statement(s):**P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.**HMIS Classification**Health hazard: 2  
Chronic health hazard: \*  
Flammability: 2  
Physical hazards: 0**NFPA Rating**Health Hazard: 2  
Fire: 2  
Reactivity Hazard: 0**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:** May be harmful if swallowed.**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

Component	CAS Number	EC-No.	Molecular Weight	Chemical Formula
Ethanol	64-17-5	200-578-6	46.07	C <sub>2</sub> H <sub>6</sub> O

**SECTION 4: FIRST AID MEASURES****General advice:** Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.**If inhaled:** If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.**In case of skin contact:** Wash off with soap and plenty of water. Consult a physician.**In case of eye contact:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.**If swallowed:** DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.**SECTION 5: FIRE-FIGHTING MEASURES****Ethanol:****Suitable extinguishing media:** For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.**Special protective equipment for firefighters:** 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 inhalation of vapor or mist. Use explosion-proof equipment. Keep away from sources of ignition (no smoking). Take measures to prevent the buildup of electrostatic charge.  
**Conditions for safe storage**  
 Keep container tightly closed in a dry and well-ventilated place.  
 Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
 Recommended storage temperature: -20 °C

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Ethanol:**

Components	CAS-No.	Value	Control parameters	Basis
Ethanol	64-17-5	TWA	1,000 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks: Upper respiratory tract irritation. Confirmed animal carcinogen with unknown relevance to humans.				
		TWA	1,000 ppm 1,900 mg/m <sup>3</sup>	USA. OSHA: TABLE Z-1 Limits for Air Contaminants – 1910.1000
		TWA	1,000 ppm 1,900 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA): Table Z-1 Limits for Air Contaminants
The value in mg/m <sup>3</sup> is approximate.				
		TWA	1,000 ppm 1,900 mg/m <sup>3</sup>	USA. NIOSH recommended exposure limits

**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	Ethanol
<b>Appearance:</b>	Clear liquid
<b>pH:</b>	No data available
<b>Water Solubility:</b>	Completely soluble
<b>Other Solubility:</b>	No data available
<b>Boiling Point (°C)</b>	78-80 oC (172.4-176 oF)
<b>Melting Point (°C)</b>	-144 oC (-227.2 oF)
<b>Flash Point (°C)</b>	14 oC (57.2 oF)
<b>Ignition Temp. (°C)</b>	363 oC (685oF)
<b>Density:</b>	0.79 g/cm3

**SECTION 10: STABILITY AND REACTIVITY**

Property	Ethanol
<b>Chemical Stability:</b>	Stable under recommended storage conditions
<b>Conditions to Avoid:</b>	Heat, flames, sparks, extreme temperatures, direct sunlight
<b>Materials to Avoid:</b>	Oxidizing agents, alkali metals, ammonia, peroxides
<b>Hazardous decomposition products:</b>	Carbon oxides

**SECTION 11: TOXICOLOGICAL INFORMATION**



**Ethanol:**

**Acute toxicity:** LD50 Oral – rat – 7,060 mg/kg → Remarks: Lungs, thorax, or respiration : other changes  
LC50 Inhalation – rat – 10 h – 20000 ppm

**Skin corrosion/irritation:** Skin – rabbit – irritating to skin – 24 h

**Serious eye damage/eye irritation:** Eyes – rabbit – mild eye irritation – 24 h (Draize test)

**Respiratory or skin sensitization:** no data available

**Germ cell mutagenicity:** no data available

**Carcinogenicity:** Carcinogenicity – mouse – oral → Tumorigenic: equivocal tumorigenic agent by RTECS criteria. Liver: tumors. Blood: Lymphomas including Hodgkin's disease.

**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 – human – female – oral → Effects on newborn: apgar score (human only), other neonatal measures or effects, and drug dependence.

**Teratogenicity:** no data available

**Specific target organ toxicity – single exposure (GHS):** Inhalation – may cause respiratory irritation.

**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:** May be harmful if swallowed.

**Signs and Symptoms of Exposure:** Exposure may cause central nervous system depression, narcosis, and/or damage to the heart. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Additional information:** RTECS: KQ6300000

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**SECTION 12: ECOLOGICAL INFORMATION**

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**Persistence and degradability:** no data available

**Toxicity:** no data available

**Bio accumulative potential:** no data available

**Mobility in soil:** no data available

**PBT and vPvB assessment:** no data available

**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

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**SECTION 13: DISPOSAL CONSIDERATIONS**

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

**Contaminated packaging:** Dispose of as unused product.

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**SECTION 14: TRANSPORT INFORMATION**

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**Ethanol:**

**DOT (US):** UN-number: 1170, Class: 3, Packing group: II

Proper shipping name: Ethanol; Marine pollutant: No; Poison inhalation hazard: No

**IMDG:** UN-number: 1170, Class: 3, Packing group: II; EMS-No: F-E, S-D

Proper shipping name: ETHANOL; Marine pollutant: No

**IATA:** UN-number: 1170, Class: 3, Packing group: II

Proper shipping name: Ethanol

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**SECTION 15: REGULATORY INFORMATION**

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**OSHA Hazards:** Ethanol: Highly flammable liquid, Target organ effect, Irritant, Carcinogen

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

**SARA 313 Components:** The following components are subject to reporting levels established by SARA Title II, Section 313:

Ethanol, CAS-No. 67-56-1; Revision Date: 2007-07-01

**SARA 311/312 Hazards:** Ethanol: Fire Hazard, Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components:** Ethanol, CAS-No. 64-17-5, Revision Date: 2007-03-01

**Pennsylvania Right To Know Components:** Ethanol, CAS-No. 64-17-5, Revision Date: 2007-03-01

**New Jersey Right To Know Components:** Ethanol, CAS-No. 64-17-5, Revision Date: 2007-03-01

**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.

**EU regulations:**

Component	Risk Phrases	Safety Phrases
Ethanol	R11, R20/21/22	S16, S36/37/39, S45

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**SECTION 16: OTHER INFORMATION:**

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**OTHER INFORMATION:**

**PREPARATION 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.