

# SAFETY DATA SHEET

Cat# K334-100, HAT Activity Fluorometric Assay Kit

SDS DATE: 17APR2015

## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** HAT Activity Fluorometric Assay Kit  
**PRODUCT CODES:** Cat# K334-100  
**MANUFACTURER:** BioVision, Inc.  
**DIVISION:**  
**ADDRESS:** 155 South Milpitas Blvd., Milpitas, CA 95035  
**EMERGENCY PHONE:** 858-373-8066  
**CHEMTREC PHONE:**  
**OTHER CALLS:** 408-493-1800  
**FAX PHONE:** 408-493-1801

## SECTION 2: HAZARDS IDENTIFICATION

Component	Description	Volume	Safety Information
HAT Buffer	Proprietary Buffer	25 ml	No hazards
Acetyl CoA	Lyophilized	1 vial	No hazards
H3 Peptide	Lyophilized	1 vial	No hazards
Substrate Mix	Lyophilized	1 vial	No hazards
Developer	Liquid (contains Glycerol)	200 µl	See below
PicoProbe™	In DMSO	200 µl	See below
CoA Standard	Lyophilized (contains DTT)	1 vial	See below
Positive Control	HeLa Nuclear Extract	40 µl	No hazards

### Glycerol:

#### Emergency Overview

**OSHA Hazards:** Target organ effect

**Target Organs:** Kidney

**GHS Classification:** Skin irritation (Category 3)  
Eye irritation (Category 2B)

#### GHS Label elements, including precautionary statements

**Pictogram:** none

**Signal word:** none

**Hazard statement(s):** none

**Precautionary statement(s):** 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: 1

Chronic Health Hazard: \*

Flammability: 1

Physical hazards: 0

#### NFPA Rating

Health hazard: 1

Fire: 1

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.

### 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

# SAFETY DATA SHEET

Cat# K334-100, HAT Activity Fluorometric Assay Kit

SDS DATE: 17APR2015

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.

## DTT:

### Emergency Overview

**OSHA Hazards:** Target organ effect, Harmful by ingestion, Irritant

**Target Organs:** Central nervous system

**GHS Classification:** Acute toxicity, Oral (Category 4)  
Skin irritation (Category 2)  
Eye irritation (Category 2A)

### GHS Label elements, including precautionary statements

#### Pictogram:



**Signal word:** Warning

**Hazard statement(s):** H302 Harmful if swallowed  
H315 Causes skin irritation  
H319 Causes serious eye irritation

**Precautionary statement(s):** 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: 0

Physical hazards: 0

### NFPA Rating

Health hazard: 2

Fire: 0

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:** Harmful if swallowed.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Number	EC-No.	Molecular Weight	Chemical Formula
Glycerol	56-81-5	200-289-5	92.09	HOCH <sub>2</sub> CH(OH)CH <sub>2</sub> OH
DMSO	67-68-5	200-664-3	78.13	C <sub>2</sub> H <sub>6</sub> OS
DTT	3483-12-3	222-468-7	154.25	C <sub>4</sub> H <sub>10</sub> O <sub>2</sub> S <sub>2</sub>

## 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:** Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

## SECTION 5: FIRE-FIGHTING MEASURES

### DMSO:

**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.

# SAFETY DATA SHEET

Cat# K334-100, HAT Activity Fluorometric Assay Kit

SDS DATE: 17APR2015

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.

**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: -80 °C.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Glycerol:

Components	CAS-No.	Value	Control parameters	Basis
Glycerol	56-81-5	TWA	10 mg/m <sup>3</sup>	USA. American Conference of Governmental and Industrial Hygienists; Threshold Limit Values for Chemical Substances in the Work Environment; Annual Reports for the Year 2004; Committees on Threshold Limit Values (TLVs ) and Biological Exposure Indices (BEIs).

### DMSO:

Components	CAS-No.	Value	Control parameters	Basis
Dimethyl sulfoxide	67-68-5	TWA	250 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	DMSO	DTT	Glycerol
<b>Appearance:</b>	Clear liquid	Clear liquid	Clear liquid
<b>pH:</b>	No data available	3.0-5.0	5.5-8
<b>Water Solubility:</b>	Completely miscible	Highly soluble	Soluble
<b>Other Solubility:</b>	No data available	No data available	No data available
<b>Boiling Point (°C):</b>	189 °C (372 °F)	No data available	182 °C (360 °F)
<b>Melting Point (°C):</b>	16-19 °C (61-66 °F)	No data available	20 °C (68 °F)
<b>Flash Point (°C):</b>	87 °C (189 °F)	No data available	160 °C (320 °F)
<b>Ignition Temperature (°C):</b>	301 °C (574 °F)	No data available	370 °C (698 °F)
<b>Density:</b>	1.1 g/ml	1.035 g/cm <sup>3</sup>	1.25 g/ml

## SECTION 10: STABILITY AND REACTIVITY

Property	DMSO	DTT	Glycerol
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# SAFETY DATA SHEET

Cat# K334-100, HAT Activity Fluorometric Assay Kit

SDS DATE: 17APR2015

Chemical stability:	Stable under recommended storage conditions		
	Conditions to avoid:	Heat, flames, sparks	No data available
Materials to avoid:	Acid chlorides, phosphorus halides, strong acids, strong oxidizing agents, strong reducing agents	Bases, oxidizing agents, reducing agents, alkali metals	Strong bases, strong oxidizing agents
Hazardous decomposition products:	Carbon oxides, sulfur oxides	Carbon oxides, sulfur oxides, hydrogen sulfide gas	Carbon oxides

## SECTION 11: TOXICOLOGICAL INFORMATION

### Glycerol:

**Acute toxicity:** LD50 Dermal – rabbit – >10,000 mg/kg

**Skin corrosion/irritation:** no data available

**Serious eye damage/eye irritation:** no data available

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

**Germ cell mutagenicity:** no data available

### **Carcinogenicity:**

- 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:** no data available

**Teratogenicity:** no data available

### **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.

**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: MA8050000

### DMSO:

**Acute toxicity:** LD50 Oral - rat - 14,500 mg/kg

LC50 Inhalation - rat - 4 h - 40250 ppm

LD50 Dermal - rabbit - > 5,000 mg/kg

**Skin corrosion/irritation:** no data available

**Serious eye damage/eye irritation:** no data available

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

**Germ cell mutagenicity:** Genotoxicity in vitro - mouse – lymphocyte→ Cytogenetic analysis

Genotoxicity in vitro - mouse – lymphocyte→ Mutation in mammalian somatic cells.

Genotoxicity in vivo - rat – Intraperitoneal→ Cytogenetic analysis

Genotoxicity in vivo - mouse – Intraperitoneal→ DNA damage

**Carcinogenicity:** Carcinogenicity – rat – Oral→ Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Skin & Appendages: Other: Tumors.

Carcinogenicity – mouse – Oral→ Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Leukaemia Skin & 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).

# SAFETY DATA SHEET

Cat# K334-100, HAT Activity Fluorometric Assay Kit

SDS DATE: 17APR2015

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.

**Teratogenicity:** 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):** Inhalation – may cause respiratory irritation.

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

## 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.

**Signs and Symptoms of Exposure:** Exposure via ingestion may cause nausea, fatigue, headache.

**Additional Information:** RTECS: PV6210000

## DTT:

**Acute toxicity:** no data available

**Skin corrosion/irritation:** no data available

**Serious eye damage/eye irritation:** no data available

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

**Germ cell mutagenicity:** no data available

## Carcinogenicity:

**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:** no data available

**Teratogenicity:** 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:** Toxic if swallowed.

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

**Synergistic effects:** no data available

**Additional information:** RTECS: not available

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## SECTION 12: ECOLOGICAL INFORMATION

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### DMSO:

**Persistence and degradability:** no data available

**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 pulex* (Water flea) – 27,500 mg/l

**Toxicity to algae:** EC50 – *Lepomis macrochirus* (Bluegill) – >400,000 mg/l – 96 h

**Bioaccumulative potential:** no data available

**Mobility in soil:** no data available

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

**Other adverse effects:** no data available

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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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### DMSO:

**DOT (US):** UN-Number: 1993, Class: CBL, Packing group: III; Proper shipping name: Combustible liquid, n.o.s. (Dimethyl sulfoxide); Marine pollutant: No; Poison Inhalation Hazard: No

**IMDG:** Not dangerous goods.

**IATA:** Not dangerous goods.

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SDS DATE: 17APR2015

Glycerol, DTT:

**DOT (US):** Not dangerous goods.

**IMDG:** Not dangerous goods.

**IATA:** Not dangerous goods.

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## SECTION 15: REGULATORY INFORMATION

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**OSHA Hazards:** Glycerol: Target organ effect

DMSO: Combustible liquid, Target organ effect

DTT: Target organ effect, Toxic by ingestion, Irritant

**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:** No chemical in this material are subject to reporting levels established by SARA Title III, Section 313:

**SARA 311/312 Hazards:** Glycerol: Chronic Health Hazard

DTT: Acute Health Hazard, Chronic Health Hazard

DMSO: Fire Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components:** Glycerol, CAS-No. 56-81-5; Revision Date: 2007-03-01

**Pennsylvania Right To Know Components:**

Glycerol, CAS-No. 56-81-5; Revision Date: 2007-03-01

Dimethyl sulfoxide CAS-No. 67-68-5; Revision Date: 2007-03-01

DTT, CAS-No. 3483-12-3

**New Jersey Right To Know Components:** Glycerol, CAS-No. 56-81-5; Revision Date: 2007-03-01

Dimethyl sulfoxide CAS-No. 67-68-5; Revision Date: 2007-03-01

DTT, CAS-No. 3483-12-3

**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
Glycerol	--	S24/25
DMSO	R10, R36/37/38	S24/25, S36/37/39, S45
DTT	R20/21/22	S60

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## SECTION 16: OTHER INFORMATION

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### 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. BioVision, 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.