SAFETY DATA SHEET

Cat# K7430-100 Cortisol (human, mouse, rat) ELISA Kit **SDS DATE: Mar 12, 2015**

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **Cortisol (human, mouse, rat) ELISA Kit**

PRODUCT CODES: **Cat# K7430-100**

MANUFACTURER: **BioVision, Inc.**
DIVISION:
ADDRESS: **155 S. Milpitas Blvd. Milpitas, CA 95035**

EMERGENCY PHONE: **858-373-8066**
CHEMTREC PHONE:
OTHER CALLS: **408-493-1800**
FAX PHONE: **408-493-1801**

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Component	Description	Volume	Safety Information
Plate Coated with Cortisol Ab	Plate	12 stripsx8 wells	No hazards
Assay Diluent	Proprietary Buffer (contains BSA >1%)	15 ml	See below
Wash Buffer (10x)	Proprietary Buffer	20 ml	No hazards
Standard Diluent	Contains Methanol >1%	15 ml	See below
Cortisol Standard (4800 ng/ml)	Contains Methanol >1%	0.5 ml	See below
Cortisol HRP Conjugate (2000x)	Liquid	8 µl	No hazards
TMB Substrate	Liquid	11 ml	No hazards
Stop Solution	Liquid (contains sulfuric acid >1%)	11 ml	See below
Plate Sealer	--	2	No hazards

NOTE: The safety data shown below is based on pure ingredients: The amounts in this kit are far less.

SECTION 3: HAZARDS IDENTIFICATION

Component	CAS Number	EC-No.	Molecular Weight	Chemical Formula
Methanol	67-56-1	200-659-6	32.04	CH4O
Bovine Serum Albumin (BSA)	9048-46-8	232-936-2	--	--
Sulfuric acid	7664-93-9	231-639-5	98.08	H_2O_4S

Methanol:
Emergency Overview
OSHA Hazards: Flammable liquid, Target organ effect, Toxic by inhalation, Toxic by ingestion, Toxic by skin absorption, Irritant
Target Organs: Eyes, Kidney, Liver, Heart, Central nervous system
GHS Classification: Flammable liquids (Category 2)
Acute toxicity, Oral (Category 3)
Acute toxicity, Inhalation (Category 3)
Acute toxicity, Dermal (Category 3)
Skin irritation (Category 2)
Eye irritation (Category 2A)
Specific target organ toxicity – single exposure (Category 1)
GHS Label elements, including precautionary statements
Pictogram:

Signal word: Danger
Hazard statement(s): H225 Highly flammable liquid and vapor
H301+H311 Toxic if swallowed or in contact with skin.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.

H370 Causes damage to organs.

Precautionary statement(s): P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P303+P361+P353 IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P307+P311 IF exposed: Call a POISON CENTER or doctor/physician.

HMIS Classification
- **Health hazard**: 2
- **Fire hazard**: *
- **Flammability**: 3
- **Physical hazards**: 0

NFPA Rating
- **Health Hazard:** 2
- **Fire**: 3
- **Reactivity Hazard**: 0

Potential Health Effects
- **Inhalation:** Toxic if inhaled. Causes respiratory tract irritation.
- **Skin:** Toxic if absorbed through skin. Causes skin irritation.
- **Eyes:** Causes eye irritation.
- **Ingestion:** Toxic if swallowed.

Bovine serum albumin (BSA):

Emergency Overview: Originates from USA where BSE has not been reported
OSHA Hazards: No known OSHA hazards
GHS Classification: Not a dangerous substance according to GHS
GHS Label elements, including precautionary statements
Pictogram: none
Signal word: none
Hazard statement(s): none
Precautionary statement(s): none

HMIS Classification
- **Health hazard**: 0
- **Flammability**: 0
- **Physical hazards**: 0

NFPA Rating
- **Health Hazard:** 0
- **Fire**: 0
- **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.

Sulfuric acid:

Emergency Overview
OSHA Hazards: Target organ effect, Corrosive
Target Organs: Teeth, Lungs
GHS Classification:
Corrosive to metals
Skin corrosion (Category 1A)
Serious eye damage (Category 1)
Acute aquatic toxicity (Category 3)
GHS Label elements, including precautionary statements
Pictogram:

Signal word: Danger
Hazard statement(s): H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
Precautionary statement(s): P234 Keep only in original container.
P264 Wash skin thoroughly after handling.
P280 Wear eye protection/ face protection.

P280 Wear protective gloves.
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.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P390 Absorb spillage to prevent material damage.
P406 Store in corrosive resistant stainless steel container with a resistant inner liner.

HMIS Classification
- **Health hazard**: 3
- **Chronic health hazard**: *
- **Flammability**: 0
- **Physical hazards**: 2

NFPA Rating
- **Health hazard**: 3
- **Fire**: 0
- **Reactivity hazard**: 0
- **Special hazard**: W

Potential Health Effects
- **Inhalation:** May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
- **Skin:** May be harmful if absorbed through skin. Causes skin burns.
- **Eyes:** Causes eye burns.
- **Ingestion:** May be harmful if swallowed.

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: Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.
In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.
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

Condition of flammability: Not flammable or combustible.
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.

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 environemtn 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. Avoid inhalation of vapor or mist.
Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.
Recommended storage temperature: MT

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Methanol:

Components	CAS-No.	Value	Control parameters	Basis
Methanol	67-56-1	TWA	200 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks:	Headache. Eye damage. Substances for which there is a Biological Exposure Index or Indices. Danger of cutaneous absorption.			
		STEL	250 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Headache. Eye damage. Substances for which there is a Biological Exposure Index or Indices (see BEI ®			

	section). Danger of cutaneous absorption.			
		TWA	200 ppm 260 mg/m^3	USA. OSHA – Table Z-1 Limits for Air Contaminants – 1910.1000
	Skin notation.			
		STEL	250 ppm 325 mg/m^3	USA. OSHA – Table Z-1 Limits for Air Contaminants – 1910.1000
	Skin notation.			
		TWA	200 ppm 260 mg/m^3	USA. Occupational Exposure Limits (OSHA) – Table Z-1 Limits for Air Contaminants
	The value in mg/m^3 is approximate.			
		TWA	200 ppm 260 mg/m^3	USA. NIOSH recommended exposure limits
	Potential for dermal absorption.			

Sulfuric acid:

Components	CAS-No.	Value	Control parameters	Basis
Sulfuric acid	7664-93-9	TWA	0.2 mg/m^3	USA. ACGIH Threshold Limit Values (TLV)
		TWA	1 mg/m^3	USA. OSHA – Table Z-1 Limits for Air Contaminants – 1910.1000
		TWA	1 mg/m^3	USA. Occupational Exposure Limits (OSHA) – Table Z-1: Limits for Air Contaminants

BSA:

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	Methanol	BSA	Sulfuric acid
Appearance:	Clear liquid	Lyophilized powder	Liquid
pH:	No data available	4.8-7.5	1.2 at 5 g/l
Water Solubility:	Completely soluble	Slightly soluble	Soluble
Other Solubility:	No data available	No data available	290 ^{o}C (554 ^{o}F)
Boiling Point (°C):	64.7 ^{o}C (148.5 ^{o}F)	No data available	3 ^{o}C (37 ^{o}F)
Melting Point (°C):	-98 ^{o}C (-144 ^{o}F)	No data available	No data available
Flash Point (°C):	11.0 ^{o}C (51.8 ^{o}F)	No data available	No data available
Ignition Temperature (°C):	455 ^{o}C (851 ^{o}F)	No data available	1.84 g/cm^3
Density:	0.791 g/ml at 25 ^{o}C (77 ^{o}F)	No data available	**Sulfuric acid**

SECTION 10: STABILITY AND REACTIVITY

Property	Methanol	BSA	Sulfuric acid
Chemical stability:	Stable under recommended storage conditions		
Conditions to avoid:	Heat, flames, sparks, extreme temperatures, direct sunlight	No data available	No data available
Materials to avoid:	Acid chlorides, acid anhydrides, oxidizing agents, alkali metals, reducing agents, acids	Strong oxidizing agents	Bases, halides, organic materials, carbides, fulminates, nitrates, picrates, cyanides, chlorates, alkali halides, zinc salts, permanganates, hydrogen peroxide, azides, perchlorates, nitromethane, phosphorus.

			Reacts violents with: cyclopentadiene, cyclopentanone oxime, nitroaryl amines, hexalithium disilicide, phosphorus (III) oxides, powdered metals
Hazardous decomposition products:	Carbon oxides	No data available	Sodium oxides

SECTION 11: TOXICOLOGICAL INFORMATION

Methanol:

Acute toxicity: LD50 Oral – rat – 5,628 mg/kg
LC50 Inhalation – rat – 4 h – 64000 ppm
LC50 Inhalation – rat – 4 h – 87.6 mg/l
LD50 Dermal – rabbit – 15,800 mg/kg
Skin corrosion/irritation: Skin – rabbit – no skin irritation
Serious eye damage/eye irritation: Eyes – rabbit – no eye irritation
Respiratory or skin sensitization: Guinea pig – OECD Test Guideline 406 – does not cause skin sensitization.
Germ cell mutagenicity: Genotoxicity in vitro – non-mammalian – other cell types – negative
Genotoxicity in vivo – mouse – male and female – intraperitoneal - negative
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
Specific target organ toxicity – single exposure (GHS): Causes damage to organs.
Specific target organ toxicity – repeated exposure (GHS): no data available
Potential Health Effects

- **Inhalation:** Toxic if inhaled. Causes respiratory tract irritation.
- **Skin:** Toxic if absorbed through skin. Causes skin irritation.
- **Eyes:** Causes eye irritation.
- **Ingestion:** Toxic if swallowed.

Signs and Symptoms of Exposure: Methyl alcohol may be fatal or cause blindness if swallowed. Cannot be made non-poisonous. Effects due to ingestion may include: nausea, headache, vomiting, gastrointestinal disturbance, dizziness, weakness, confusion, drowsiness, unconsciousness. May cause convulsions.
Additional information: Repeated dose toxicity – monkey – Gavage – 72 h→ lowest observed adverse effect level – 2,340 mg/kg
RTECS: PC1400000

BSA:

Acute toxicity: no data available
Irritation and corrosion: no data available
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
Specific target organ toxicity – single exposure (GHS): no data available
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.

Synergistic effects: no data available
Additional information: RTECS: not available

Sulfuric acid:

Acute toxicity: LD50 Oral – rat – 2,140 mg/kg
LC50 Inhalation – rat – 2 h – 510 mg/m^3
Skin corrosion/irritation: Skin – rabbit – extremely corrosive and destructive to tissue
Serious eye damage/eye irritation: Eyes – rabbit – severe eye irritation
Respiratory or skin sensitization: no data available
Germ cell mutagenicity: no data available
Carcinogenicity: The International Agency for Research on Cancer (IARC) has determined that occupational exposure to strong-inorganic-acid mists containing sulfuric acid is carcinogenic to rats (Group 1).

IARC:	No component of this product present at levels greather than or equal to 0.1% is identified as probable, possible or confirmed rat 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
Aspiration hazard: no data available
Potential Health Effects
Inhalation: May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Skin: May be harmful if absorbed through skin. Causes skin burns.
Eyes: Causes eye burns. Causes severe eye burns.
Ingestion: May be harmful if swallowed.
Signs and Symptoms of Exposure: Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting, pulmonary edema. Effects may be delayed. 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: WS5600000

SECTION 12: ECOLOGICAL INFORMATION

Methanol:
Persistence and degradability: Biodegradability (aerobic)→ Result: 72% - rapidly biodegradable
Toxicity:
Toxicity to fish→ LC50 – Oncorhynchus mykiss (rainbow trout) – 19,000 mg/l – 96 h
Mortality LC50 – Lepomis macrochirus (Bluegill) – 15,400 mg/l – 96 h
Toxicity to daphnia and other aquatic invertebrates→ EC50 – Daphnia magna (Water flea) – 24,500 mg/l – 48 h
EC100 – Daphnia magna (Water flea) – 10,000 mg/l – 24 h
Toxicity to algae→ Growth inhibition EC50 – Scenedesmus capricornutum (fresh water algae) – 22,000 mg/l
Bioaccumulative potential: Bioaccumulation→ Cyprinus carpio (Carp) – 72 d at 20 ^oC; Bioconcentration factor (BCF): 1.0
Mobility in soil: Will not adsorb on soil.
PBT and vPvB assessment: no data available
Other adverse effects: no data available

BSA:
Persistence and degradability: no data available
Toxicity: no data available
Bioaccumulative potential: no data available
Mobility in soil: no data available
PBT and vPvB assessment: no data available
Other adverse effects: no data available

Sulfuric acid:
Persistence and degradability: no data available
Toxicity: Toxicity to fish: LC50 – Gambusia affinis (Mosquito fish) – 42 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: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life with long lasting effects.

SECTION 13: DISPOSAL CONSIDERATIONS

Product: Offer surplus and non-recyclable solutions to a licensed disposal company. Contact licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scruber but exert extra care in igniting as some components in this kit are highly flammable.
Contaminated packaging: Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

Methanol:
DOT (US): UN-number: 1230, Class: 3, Packing group: II; Proper shipping name: Methanol; Reportable Quantity (RQ): 5000 lbs.; Marine pollutant: No; Poison inhalation hazard: No
IMDG: UN-number: 1230, Class: 3 (6.1), Packing group: II; EMS-No: F-E, S-D; Proper shipping name: METHANOL; Marine pollutant: No
IATA: UN-number: 1230, Class: 3(6.1), Packing group: II; Proper shipping name: Methanol

BSA:
DOT (US): Not dangerous goods.
IMDG: Not dangerous goods.
IATA: Not dangerous goods.

Sulfuric acid:
DOT (US): UN-number: 1830, Class: 8, Packing group: II; Proper shipping name: Sulfuric acid; Reportable Quantity (RQ): 1000 lbs.; Marine pollutant: No; Poison inhalation hazard: No
IMDG: UN-number: 1830, Class: 8, Packing group: II; EMS-No: F-A, S-B; Proper shipping name: SULFURIC ACID; Marine pollutant: No
IATA: UN-number: 1830, Class: 8, Packing group: II; Proper shipping name: Sulfuric acid

SECTION 15: REGULATORY INFORMATION

SARA 302 Components: The following components are subject to reporting levels established by SARA Title III, Section 302:
Sulfuric acid, CAS-No. 7664-93-9; Revision Date: 2007-07-01
SARA 313 Components: The following components are subject to reporting levels established by SARA Title III, Section 313:
Sulfuric acid, CAS-No. 7664-93-9; Revision Date: 2007-07-01
Methanol, CAS-No. 67-56-1; Revision Date: 2007-07-01
SARA 311/312 Hazards:
Sulfuric acid: Acute Health Hazard, Chronic Health Hazard
Methanol: Fire Hazard, Acute Health Hazard, Chronic Health Hazard
Massachusetts Right To Know Components: Sulfuric acid, CAS-No. 7664-93-9; Revision Date: 2007-07-01
Methanol, CAS-No. 67-56-1; Revision Date: 2007-07-01
Pennsylvania Right To Know Components:
Methanol, CAS-No. 67-56-1; Revision Date: 2007-07-01
Bovine Serum Albumin (BSA), CAS-No. 9048-46-8
Sulfuric acid, CAS-No. 7664-93-9; Revision Date: 2007-07-01
New Jersey Right To Know Components:
Methanol, CAS-No. 67-56-1; Revision Date: 2007-07-01
Bovine Serum Albumin (BSA), CAS-No. 9048-46-8
Sulfuric acid, CAS-No. 7664-93-9; Revision Date: 2007-07-01
California Prop. 65 Components: WARNING! This product contains a chemical known to the State of California to cause cancer:
Sulfuric acid, CAS-No. 7664-93-9; Revision Date: 2007-09-28

EU regulations

Component	Risk Phrases	Safety Phrases
Methanol	R11, R23/24/25, R33	S16, S24/25, S36/37, S45
BSA	--	--
Sulfuric acid	R35	S26, S30, S45

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. 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.