SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Collagenase Activity Colorimetric Assay Kit
PRODUCT CODES: Cat# K792-100
MANUFACTURER: BioVision, Inc.
DIVISION:
ADDRESS: 155 S. Milpitas Blvd. Milpitas, CA 95035
EMERGENCY PHONE: 858-373-8066
CHEMTREC PHONE: 408-493-1800
OTHER CALLS: 408-493-1801
FAX PHONE: 408-493-1801

SECTION 2: HAZARDS IDENTIFICATION

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
<th>Volume</th>
<th>Safety Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collagenase Assay Buffer</td>
<td>Liquid</td>
<td>20 ml</td>
<td>No hazard</td>
</tr>
<tr>
<td>Collagenase</td>
<td>Liquid</td>
<td>1 ml</td>
<td>No hazard</td>
</tr>
<tr>
<td>Collagenase Substrate</td>
<td>Liquid</td>
<td>4 ml</td>
<td>No hazard</td>
</tr>
<tr>
<td>Inhibitor (1,10-Phenanthroline)</td>
<td>In Ethanol (Contains 1,10-Phenanthroline)</td>
<td>50 µl</td>
<td>See below</td>
</tr>
</tbody>
</table>

1,10-Phenanthroline:
Emergency Overview
GHS Classification: Acute toxicity, Oral (Category 3), H301
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

GHS Label elements, including precautionary statements
Pictogram:

Signal word: Danger
Hazard statement(s): H301 Toxic if swallowed
H410 Very toxic to aquatic life with long lasting effects.
Precautionary statement(s): P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician
P321 Specific treatment (see supplemental first aid instructions on this label).
P330 Rinse mouth.
P391 Collect spillage.
P405 Store locked up.
P501 Dispose of contents/container to an approved waste disposal plant.

HMIS Classification
Health hazard: 2
Flammability: 0
Physical hazards: 1

NFPA Rating
Health Hazard: 2
Fire: 0
Reactivity Hazard: 1

Potential Health Effects
Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.
Skin: Harmful if absorbed through skin. Causes skin irritation.
Eyes: Causes eye irritation.
Ingestion: Harmful if swallowed.

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): H225: Highly flammable liquid and vapour
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.

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

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>EC-No.</th>
<th>Molecular Weight</th>
<th>Chemical Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,10-Phenanthroline</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>200-578-6</td>
<td>46.07</td>
<td>C2H6O</td>
</tr>
</tbody>
</table>

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:
Condition of flammability: Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.
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 breathing vapors, mist, or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Methods for cleaning up: Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Keep away from sources of ignition—no smoking. Take measures to prevent the build up 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.
SAFETY DATA SHEET
Cat# K792-100 Collagenase Activity Colorimetric Assay Kit
Recommended storage temperature: -20°C.

SDS DATE: May 20, 2015

SECTION 8: EXPOSURE CONTROLS/PERSOAL PROTECTION

Ethanol:

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>TWA</td>
<td>1,000 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
</tbody>
</table>

Remarks: Upper respiratory tract irritation. Confirmed animal carcinogen with unknown relevance to humans.

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>TWA</td>
<td>1,000 ppm</td>
<td>USA. OSHA: TABLE Z-1 Limits for Air Contaminants – 1910.1000</td>
</tr>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>TWA</td>
<td>1,000 ppm</td>
<td>USA. Occupational Exposure Limits (OSHA): Table Z-1 Limits for Air Contaminants</td>
</tr>
</tbody>
</table>

The value in mg/m³ is approximate.

1,10-Phenanthroline:
Contains no substances with occupational exposure limit values.

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
Tightly fitting safety goggles. Face shield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin 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

<table>
<thead>
<tr>
<th>Property</th>
<th>1,10-Phenanthroline</th>
<th>Ethanol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance:</td>
<td>Powder</td>
<td>Clear liquid</td>
</tr>
<tr>
<td>pH:</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Water Solubility:</td>
<td>No data available</td>
<td>Completely soluble</td>
</tr>
<tr>
<td>Other Solubility:</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling Point (°C):</td>
<td>No data available</td>
<td>78-80 °C (172.4-176 °F)</td>
</tr>
<tr>
<td>Melting Point (°C):</td>
<td>No data available</td>
<td>-144 °C (-227.2 °F)</td>
</tr>
<tr>
<td>Flash Point (°C):</td>
<td>No data available</td>
<td>14 °C (57.2 °F)</td>
</tr>
<tr>
<td>Ignition Temperature (°C):</td>
<td>No data available</td>
<td>383 °C (685 °F)</td>
</tr>
<tr>
<td>Density:</td>
<td>No data available</td>
<td>0.79 g/cm³</td>
</tr>
</tbody>
</table>

SECTION 10: STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Property</th>
<th>1,10-Phenanthroline</th>
<th>Ethanol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical stability:</td>
<td>Stable under recommended storage conditions</td>
<td></td>
</tr>
<tr>
<td>Conditions to avoid:</td>
<td>No data available</td>
<td>Heat, flames, sparks, extreme temperatures, direct sunlight</td>
</tr>
<tr>
<td>Materials to avoid:</td>
<td>Strong oxidizing agents, strong acids</td>
<td>Oxidizing agents, alkali metals, ammonia, peroxides</td>
</tr>
<tr>
<td>Hazardous decomposition products:</td>
<td>No data available</td>
<td>Carbon oxides</td>
</tr>
</tbody>
</table>

SECTION 11: TOXICOLOGICAL INFORMATION

1,10-Phenanthroline:
Acute toxicity: LD50 Oral - rat - 132 mg/kg
Skin corrosion/irritation: no data available
Serious eye damage/eye irritation: no data available
REACH 101 Pre-Registration Data Package

SAFETY DATA SHEET
Cat# K792-100 Collagenase Activity Colorimetric Assay Kit

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
Specific target organ toxicity – single exposure (GHS): no data available
Specific target organ toxicity – repeated exposure (GHS): no data available
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: not available

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
  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

SECTION 12: ECOLOGICAL INFORMATION

1,10-Phenanthroline:
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.

SECTION 13: DISPOSAL CONSIDERATIONS

Product: Observe all federal, state, and local environmental regulations.
Contaminated packaging: Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

1,10-Phenanthroline:
DOT (US): UN number: 2811 Class: 6.1 Packing group: III
SAFETY DATA SHEET
Cat# K792-100 Collagenase Activity Colorimetric Assay Kit

Proper shipping name: Toxic solids, organic, n.o.s. (1,10-Phenanthroline)
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG:
UN number: 2811 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (1,10-Phenanthroline)
Marine pollutant: No
IATA:
UN number: 2811 Class: 6.1 Packing group: III
Proper shipping name: Toxic solid, organic, n.o.s. (1,10-Phenanthroline)

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

SECTION 15: REGULATORY INFORMATION

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: SARA 313: 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.
SARA 311/312 Hazards: 1,10-Phenanthroline: Acute Health Hazard
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: 1,10-Phenanthroline, CAS-No. 66-71-7
Ethanol, CAS-No. 64-17-5, Revision Date: 2007-03-01
New Jersey Right To Know Components: 1,10-Phenanthroline, CAS-No. 66-71-7
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

<table>
<thead>
<tr>
<th>Component</th>
<th>Risk Phrases</th>
<th>Safety Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>R11, R20/21/22</td>
<td>S16, S36/37/39, S45</td>
</tr>
<tr>
<td>1,10-Phenanthroline</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

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.