

SAFETY DATA SHEET

SDS DATE: July 16, 2021

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: c-Jun Transcription Factor Activity Assay Kit (Colorimetric)

PRODUCT CODES: Cat# K2097-100

RESTRICTIONS ON USE: For laboratory research purposes. Not for drug or household use.

MANUFACTURER: BioVision, Inc.

ADDRESS: 155 S. Milpitas Blvd. Milpitas, CA 95035

EMERGENCY PHONE: 858-373-8066

OTHER CALLS: 408-493-1800

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EMAIL: sds@biovision.com

SECTION 2: HAZARDS IDENTIFICATION

Component	Description	Volume	Safety Information
Plate Coated with DNA Probes	--	1	No hazards
Binding Buffer (5X)	Proprietary Buffer (contains Glycerol)	2.2 ml	See below
DTT (100 mM)	contains DTT	100 µl	See below
Protease Inhibitor Cocktail	Liquid (contains DMSO)	20 µl	See below
c-Jun Primary Antibody	Liquid	1 ml	No hazards
Antibody Diluent Buffer	Liquid (contains BSA)	20 ml	See below
HRP Conjugate Stock	Liquid	8 µl	No hazards
Wash Buffer (10X)	Liquid (contains BSA)	27 ml	See below
Competitor Oligo (20 pmole)	Liquid	25 µl	No hazards
Non-Competitor Oligo (20 pmole)	Liquid	25 µl	No hazards
TMB Substrate	Liquid	10 ml	No hazards
Stop Solution	Liquid (contains Sulfuric acid)	6 ml	See below
Positive Control	Liquid	50 µl	No hazards
Plate Sealing Film	--	2	No hazards

DTT:

Emergency Overview

OSHA Hazards: Target Organ Effect, Toxic by ingestion, Irritant

Target Organs: Central nervous system

GHS Classification:

Acute toxicity, Oral (Category 5)

Skin irritation (Category 2)

Eye irritation (Category 2A)

GHS Label elements, including precautionary statements



Pictogram:

Signal word:

Warning

Hazard statement(s):

H303 May be 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

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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: Toxic if swallowed.

Bovine Serum Albumin (BSA):

Emergency Overview:

GHS Classification: Acute Toxicity; Oral, Category 4
GHS Label elements, including precautionary statements



Pictogram:

Signal word:

Warning

Hazard statement(s):

H302: Harmful if swallowed.

Precautionary statement(s):

P264: Wash {hands} thoroughly after handling.
P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P330: Rinse mouth.

Adverse Human Health:

Harmful if swallowed.

Effects and Symptoms:

Material may be irritating to the mucous membranes and upper respiratory tract.
May be harmful by inhalation or skin absorption.
May cause eye, skin, or respiratory system irritation.
To the best of our knowledge, the toxicological properties have not been thoroughly investigated

HMIS Classification

Health hazard: 1
Flammability: 0
Physical hazards: 0

NFPA Rating

Health Hazard: 1
Fire: 0
Reactivity Hazard: 0

Potential Health Effects

Inhalation: May be harmful by inhalation. Material may be irritating to the mucous membranes and upper respiratory tract.
Skin: Harmful if absorbed through skin. May cause skin irritation.
Eyes: Cause eye irritation.
Ingestion: Harmful if swallowed

Glycerol:

Emergency Overview

OSHA Hazards: Not available

Target Organs: Eyes, Skin

GHS Classification: Not available

GHS Label elements, including precautionary statements



Pictogram:

Signal word:

Warning

Hazard statement(s):

Not available

Precautionary statement(s):

none

HMIS Classification

Health hazard: 1
Chronic Health Hazard: 0
Flammability: 1
Physical hazards: 0

NFPA Rating

Health hazard: 1
Fire: 0
Reactivity Hazard: 0

Potential Health Effects

Inhalation: Low hazard for usual industrial handling. Inhalation of a mist of this material may cause respiratory tract irritation.

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Skin: May cause skin irritation. Low hazard for usual industrial handling

Eyes: May cause eye irritation.

Ingestion: Ingestion of large amounts may cause gastrointestinal irritation. Low hazard for usual industrial handling. May cause headache.

Sulfuric acid (H₂SO₄):

Emergency Overview

GHS Classification: Acute toxicity, Oral (Category 5)

Skin corrosion (Category 1A)

Serious eye damage (Category 1)

Acute aquatic toxicity (Category 3)

Chronic aquatic toxicity (Category 3)

GHS Label elements, including precautionary statements:

Pictogram:



Signal word: Danger

Hazard statement(s): H303 May be harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s): P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
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.

HMIS Classification

Health hazard: 3

Chronic Health Hazard: *

Flammability: 0

Physical hazards: 2

NFPA Rating

Health hazard: 3

Fire: 0

Reactivity Hazard: 2

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. Causes respiratory tract irritation.

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

Eyes: Causes eye burns. Causes severe eye

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.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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Component	CAS Number	EC-No.	Molecular Weight	Chemical Formula	Concentration
DTT	3483-12-3	222-468-7	154.25	C ₄ H ₁₀ O ₂ S ₂	<20%
BSA	9048-46-8	232-936-2	--	--	<5%
Glycerol	56-81-5	200-289-5	92.09	C ₃ H ₈ O ₃	<60%
Sulfuric acid	7664-93-9	--	98.079	H ₂ SO ₄	<5%
DMSO	67-68-5	200-664-3	78.13	C ₂ H ₆ OS	<100%

SECTION 4: FIRST AID MEASURES

General advice: : First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

If inhaled: Move person to fresh air; if effects occur, consult a physician.

In case of skin contact: Immediately flush skin with water while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Contaminated leather items such as shoes should be disposed of properly. Safety shower should be located in immediate work area.

In case of eye contact: : Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist. Eye wash fountain should be located in immediate work area.

If swallowed: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Notes to physician: Maintain adequate ventilation and oxygenation of the patient. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient

SECTION 5: FIRE-FIGHTING MEASURES

DTT:

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 fire fighting if necessary.

Hazardous combustion products: Hazardous decomposition products formed under fire conditions— carbon oxides, sulfur oxides, hydrogen sulfide gas.

Conditions of flammability: Not flammable or combustible

Bovine Serum Albumin (BSA):

Suitable extinguishing media: Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray. Use water spray to cool fire-exposed containers.

Unsuitable extinguishing media: A solid water stream may be inefficient.

Special protective equipment for fire fighters: As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

Further information: No data available

Glycerol:

Suitable extinguishing media: Use water spray to cool fire-exposed containers. Use agent most appropriate to extinguish fire. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Special hazards arising from the substance or mixture: Thermal decomposition can lead to release of irritating gases and vapors.

Advice for firefighters: Wear protective eyewear, gloves, and clothing.

Further information: Avoid inhaling gases, fumes, dust, mist, vapor, and aerosols. Avoid contact with skin, eyes, and clothing

Sulfuric acid (H₂SO₄):

Conditions of flammability: Not flammable or combustible.

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

Special protective equipment for firefighters: Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products: Hazardous decomposition products formed under fire conditions. - Sulphur oxides.

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 combustion products formed under fire conditions – no data available.

Further information: Use water spray to cool unopened containers.

SECTION 6: ACCIDENTAL RELEASE MEASURES

DTT:

Personal precautions: Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions: Do not let product enter drains.

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Methods for cleaning up: Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal. Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal

Bovine Serum Albumin (BSA):

Personal precautions, Protective equipment and emergency procedures: Avoid raising and breathing dust, and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

Environmental precautions: Take steps to avoid release into the environment, if safe to do so.

Methods for cleaning up: Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations

Glycerol:

Personal precautions, protective equipment and emergency procedures: Ensure adequate ventilation. Ensure that air-handling systems are operational. Should not be released into environment. Prevent from reaching drains, sewer, or waterway.

Methods and materials for containment and cleaning up: Wear protective eyewear, gloves, and clothing. If necessary use trained response staff or contractor. Evacuate personnel to safe areas. Keep in suitable closed containers for disposal

Sulfuric acid (H₂SO₄):

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

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 and materials for containment and cleaning up: Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

DMSO:

Personal precautions: Use personal protective equipment. 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: Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

SECTION 7: HANDLING AND STORAGE

DTT

Precautions for safe handling Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.

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. Air sensitive. Store under inert gas.

Bovine Serum Albumin (BSA):

Precautions for safe handling: Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid prolonged or repeated exposure.

Conditions for safe storage: Keep container tightly closed. Store in accordance with information listed on the product insert.

Glycerol:

Precautions for safe handling: Wash thoroughly after handling. Wash thoroughly after handling. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Wash clothing before reuse.

Conditions for safe storage, including any incompatibilities: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. No special precautions indicated

Sulfuric acid (H₂SO₄):

Handling: Avoid inhalation of vapour or mist.

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.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

DTT:

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 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: Chemical safety goggles

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Hygiene measures: General industrial hygiene practice.



Bovine Serum Albumin (BSA):

Exposure Controls:

CAS#	Partial Chemical Name	Britain EH40	France VL	Europe
9048-46-8	Bovine Serum Albumin (BSA)	No data	No data	No data
CAS#	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other limits
9048-46-8	Bovine Serum Albumin (BSA)	No data	No data	No data

Glycerol:

Personal protective equipment:

Eye protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection

Wear appropriate protective gloves to prevent skin exposure. Wear appropriate protective clothing to minimize contact with skin.

Respiratory protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Sulfuric acid (H₂SO₄):

Exposure Controls:

Components	CAS#	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

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. Faceshield (8-inch minimum). 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.

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

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 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

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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	DTT	BSA	Glycerol	Sulfuric acid	DMSO
Appearance:	Clear liquid	A dry powder	Clear viscous liquid	Clear liquid	Clear liquid
pH:	3-5	No data available	5.5 -8	1.2 at 5 g/l	No data available
Water Solubility:	High	No data available	Miscible	soluble	Completely miscible
Other Solubility:	No data available	No data available	No data available	No data available	No data available
Boiling Point (°C)	No data available	No data available	290 °C (554.00°F)	290 °C (554 °F) - lit	189 °C (372 °F)
Melting Point (°C)	No data available	No data available	17.8 °C (19.94°F)	10.31 °C (50.56 °F)	16-19 °C (61-66 °F)
Flash Point (°C)	No data available	No data available	160 °C	Not applicable	87 °C (189 °F)
Ignition Temp. (°C)	No data available	No data available	No data available	No data available	301 °C (574 °F)
Density:	No data available	No data available	No data available	1.84 g/cm ³ at 25 °C (77 °F)	1.1 g/ml

SECTION 10: STABILITY AND REACTIVITY

Property	DTT	BSA	Glycerol	Sulfuric acid	DMSO
Chemical Stability:	Stable under recommended storage conditions				
Conditions to Avoid:	No data available	No data available	Incompatible materials, ignition sources, excess heat	No data available	Heat, Flames, Sparks
Materials to Avoid:	Bases, Oxidizing agents, Reducing agents, Alkali metals	No data available	Not available	Bases, Halides, Organic materials, Carbides, fulminates, Nitrates, picrates, Cyanides, Chlorates, alkali halides, Zinc salts, permanganates, e.g. potassium permanganate, Hydrogen peroxide, Azides, Perchlorates., Nitromethane, phosphorous, Reacts violently with:, cyclopentadiene, cyclopentanone oxime, nitroaryl amines, hexalithium disilicide, phosphorous(III) oxide, Powdered metals	Acid chlorides, Phosphorus halides, Strong acids, Strong oxidizing agents, Strong reducing agents
Hazardous decomposition products:	Carbon oxides, sulfur oxides, hydrogen sulfide gas	No data available	Carbon monoxide, carbon monoxide, carbon dioxide.	Fire condition: Sulphur oxides	Carbon oxides, sulfur oxides

SECTION 11: TOXICOLOGICAL INFORMATION

DTT

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

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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

Bovine Serum Albumin (BSA):

The toxicological effects of this product have not been thoroughly studied

Glycerol:

Acute toxicity: LD50 Oral - rat – 12,600 mg/kg

LC50 Inhalation - rat - 570 mg/m³/1hr

Dermal – rabbit: Mild eye irritation-24 hr

Skin corrosion/irritation: no data available

Serious eye damage/eye irritation: no data available

Respiratory/skin sensitization: no data available

Germ cell mutagenicity: no data available

Carcinogenicity: Not listed as a carcinogen(ACGIH, IARC, NTP)

Reproductive toxicity: No data available

Mutagenicity: No data available

Sulfuric acid (H₂SO₄):

Acute toxicity

Oral LD50: LD50 Oral - rat - 2,140 mg/kg

Inhalation LC50: LC50 Inhalation - rat - 2 h - 510 mg/m³

Dermal LD50: no data available

Other information on acute toxicity: no data available

Skin corrosion/irritation: Skin - rabbit - Extremely corrosive and destructive to tissue.

Serious eye damage/eye irritation: Eyes - rabbit - Severe eye irritation

Respiratory or skin sensitisation: 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 humans (group 1).

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

Specific target organ toxicity - single exposure (Globally Harmonized System): no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System): 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. Causes respiratory tract irritation.

Ingestion: May be harmful if swallowed.

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

Eyes: Causes eye burns. Causes severe eye burns. Causes eye irritation.

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

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: Skin – rabbit – no skin irritation – 4h

Serious eye damage/eye irritation: Eyes – rabbit – mild eye irritation

Respiratory or 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 and appendages: other: tumors.

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Carcinogenicity – mouse – Oral → Tumorigenic: equivocal tumorigenic agent by RTECS criteria. Leukemia 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: post-implantation mortality (e.g. reduction in number of implants per female; total number of implants per corpora lutea). Effects on embryo/fetus: Fetotoxicity (except death, e.g. stunted fetus). Specific developmental abnormalities: musculoskeletal system.

Teratogenicity: Developmental toxicity – mouse – Intraperitoneal: Effects on embryo/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. 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: Effects due to ingestion may include: nausea, fatigue, and/or headache.

Additional information: RTECS: PV6210000

SECTION 12: ECOLOGICAL INFORMATION

DTT

Elimination information (persistence and degradability): no data available

Ecotoxicity effects: no data available

Further information on ecology: no data available

Bovine Serum Albumin (BSA):

Toxicity: Avoid release into the environment. Runoff from fire control or dilution water may cause pollution.

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

Glycerol:

Persistence and degradability: Easily biodegradable

Toxicity: No data available

Bioaccumulative potential: Not bioaccumulative

Mobility in soil: Aqueous solution has high mobility in soil.

PBT and vPvB assessment: no data available

Other adverse effects: no data available

Sulfuric acid (H₂SO₄):

Toxicity: Toxicity to fish LC50 - Gambusia affinis (Mosquito fish) - 42 mg/l - 96 h

Persistence and degradability: no data available

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.

DMSO:

Elimination information (persistence and degradability): no data available

Ecotoxicity effects: 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

Further information on ecology: no data available

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SECTION 13: DISPOSAL CONSIDERATIONS

DTT:

Product: Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber

Contaminated packaging: Dispose of as unused product

Bovine Serum Albumin (BSA):

Waste Disposal Method: Dispose in accordance with local, state, and federal regulations

Glycerol:

Product: Dispose of in a manner consistent with federal, state, and local regulations.

Storage: No data available

Sulfuric acid (H₂SO₄):

Product: Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging: Dispose of as unused product.

DMSO:

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

Contaminated packaging: Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

DTT:

DOT (US): Not dangerous goods

IMDG: Not dangerous goods

IATA: Not dangerous goods

Bovine Serum Albumin (BSA):

DOT (US): Not dangerous goods

IMDG: Not dangerous goods

IATA: Not dangerous goods

Glycerol:

DOT (US): Not dangerous goods

IMDG: Not dangerous goods.

IATA: Not dangerous goods

Sulfuric acid (H₂SO₄):

DOT (US) UN number: 1830 Class: 8 Packing group: II Proper shipping name: Sulfuric acid Reportable Quantity (RQ): 100 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: SULPHURIC ACID

Marine pollutant: No

IATA UN number: 1830 Class: 8 Packing group: II Proper shipping name: Sulphuric acid

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.

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: 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: DTT: Acute Health Hazard ; Glycerol: Acute Health Hazard, Chronic Health Hazard; Sulfuric acid: 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; Sulfuric acid, CAS-No. 7664-93-9; Revision Date: 2007-07-01


Pennsylvania Right To Know Components: : DTT CAS-No. 3483-12-3; Glycerol, CAS-No. 56-81-5; Revision Date: 2007-03-01; Sulfuric acid, CAS-No. 7664-93-9; Revision Date: 2007-07-01; ; Dimethyl sulfoxide CAS-No. 67-68-5; Revision Date: 2007-03-01

New Jersey Right To Know Components: DTT CAS-No. 3483-12-3; Glycerol, CAS-No. 56-81-5; Revision Date: 2007-03-01; Sulfuric acid, CAS-No. 7664-93-9; Revision Date: 2007-07-01; ; Dimethyl sulfoxide CAS-No. 67-68-5; Revision Date: 2007-03-01

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California Prop. 65 Components:  **WARNING:** This product can expose you to chemicals including Sulfuric acid and TMB, which are known to the State of California to cause cancer. For more information go to www.p65warnings.ca.gov/

EU regulations

Component	Risk Phrases	Safety Phrases
DTT	R20/21/22	S60
BSA	--	--
Glycerol	--	S24/25
Sulfuric acid	R35	S26, S30, S45
DMSO	R10, R36/37/38	S24/25, S36/37/39, S45

SECTION 16: OTHER INFORMATION:

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. 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.