

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY/UNDERTAKING

1.1 Product Name: Enzyme-Linked Immunosorbent Assay Kit

1.2 Catalog Number: EKF

1.3 Recommended Use: For Laboratory Research Use Only.

1.4 Company: Biomatik Corporation

4 Third Ave, Kitchener, Ontario, N2C 1N6, Canada

Telephone Number: 1-519-489-7195

Email: info@biomatik.com

Emergency Telephone Number: Chemtrec 1-800-424-9300

2. HAZARD IDENTIFICATION

Component Items	Physical form	Hazardous Ingredient	Concentration	CAS No.
Biotinylated Detection Ab/Ag	Odorless and colorless, liquid	Proclin 300	0.05%	96118-96-6
Dilution Buffer	Odorless and colorless, liquid	Proclin 300	0.05%	96118-96-6
HRP Conjugate	Odorless and colorless, liquid	Proclin 300	0.05%	96118-96-6
Standard	Odorless and white/faint yellow, Clear powder/ solid	Proclin 300	0.05%	96118-96-6
Substrate	Odorless and colorless, liquid	H ₂ O ₂	0.1%	7722-84-1
Stop solution	Slight pungent and colorless, liquid	Sulfuric acid (H ₂ SO ₄)	2%	7664-93-9

2.1 Hazard Statement

Classification according to GHS

Signal Word: WARNING

Danger symbol:

**2.1.1 Proclin 300**

H317: May cause an allergic skin reaction.

2.1.2 Sulfuric acid (H₂SO₄)

H315: Causes skin irritation.

H319: Causes serious eye irritation.

2.1.3 Hydrogen Peroxide (H₂O₂)

H271: May cause fire or explosion; strong oxidizer

H302: Harmful if swallowed

H314: Causes severe skin burns and eye damage

H332: Harmful if inhaled

2.2 PRECAUTION STATEMENT

Classification according to GHS

2.2.1 Proclin 300

P261: Avoid breathing dust/fumes/gas/mist/vapors/spray.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P302+352: IF ON SKIN: Wash with plenty of soap and water.

P333+313: If skin irritation or rash occurs: Get medical advice/attention

2.2.2 Sulfuric acid (H₂SO₄)

P264: Wash hands thoroughly after handling.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P302+352: IF ON SKIN: Wash with plenty of soap and water.

P332+313: If skin irritation occurs, get medical advice/attention.

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present, and easy to do. Continue rinsing.

2.2.3 Hydrogen Peroxide (H₂O₂)

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

P283 Wear fire-resistant or flame-retardant clothing.

P264 Wash thoroughly after handling it.

P271 Use only outdoors or in a well-ventilated area.

P301+P317 IF SWALLOWED: Get medical help.

P330 Rinse mouth.

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P304+P340 IF INHALED: Remove the person to fresh air and keep 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.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS#	Chemical Name	% Concentration	EINECS#
7732-18-5	Water	96.34 %	231-791-2
7647-14-5	Sodium chloride	0.8%	231-598-3
7558-79-4	Disodium hydrogenorthophosphate	0.12%	231-448-7
7447-40-7	Potassium chloride	0.02%	231-211-8
7778-77-0	Potassium dihydrogen orthophosphate	0.02%	231-913-4
9005-64-5	Tween20	0.05%	500-018-3
9048-46-8	BSA	1%	--
96118-96-6	Proclin 300	0.05%	--
7664-93-9	Sulfuric acid (H2SO4)	2%	231-639-5
7722-84-1	H2O2	0.1%	231-765-0
77-92-9	Citric acid	0.2%	201-069-1
54827-17-7	3,3',5,5'-tetramethylbenzidine	0.01%	259-364-6

4. FIRST AID MEASURES

Classification according to GHS

4.1 General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

4.2 If inhaled

If breathed in, move the person into fresh air. If not breathing, give artificial respiration. Consult a physician.

4.3 In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

4.4 In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

4.5 If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES**5.1 Suitable extinguishing media**

Suitable: Water spray, alcohol-resistant foam, dry chemical, carbon dioxide, or appropriate foam. For small fires, use media such as "alcohol" foam, dry chemicals, or carbon dioxide. For large fires, apply water from as far away as possible. Use large quantities of water applied as mist or spray. Solid streams of water may be ineffective. Cool affected containers with flooding quantities of water.

5.2 Special precautions for fire-fighters

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

5.3 Special hazards arising from the substance or mixture

Carbon oxides, Nitrogen oxides (NOx), Sulphur oxides, Hydrogen chloride gas.

6. ACCIDENTAL RELEASE MEASURES**6.1 Person-related safety precautions**

Use personal protective equipment. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

6.2 Measures for environmental protection

Prevent further leakage or spillage if safe to do so. Do not let enter drains. Discharge into the environment must be avoided.

6.3 Measures for containment and cleaning

Contain spillage, and then collect with non-combustible absorbent material (eg. sand, diatomaceous earth, vermiculite). Place it in a container for disposal according to local regulations. Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal. Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in a container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE**7.1 Handling**

- Wear appropriate protective clothing and safety gloves.
- Avoid inhalation.
- Avoid contact with eyes, skin and clothing.

- Mechanical exhaust required.
- Keep away from ignition sources, heat, and flame.
- No smoking at the work site.
- Incompatibilities: Strong oxidizing agents, Strong acids. Handling and unloading should be light, to prevent the package from breaking, damp and causing losses.
- The workplace should be equipped with appropriate varieties and quantities of firefighting equipment and leakage emergency treatment equipment.

7.2 Storage

- Store in a cool place. Keep the container tightly closed in a dry and well-ventilated place.
- Keep away from heat, sparks, and flame.
- Keep away from sources of ignition.
- Incompatible: Strong oxidizing agents, Strong acids.
- Storage place should be equipped with appropriate varieties and quantities of firefighting equipment and leakage emergency treatment equipment.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Engineering Controls

Mechanical exhaust is required. Safety shower and eye bath.

8.2 Personal Protective Equipment

- Respiratory: Government-approved respirator if needed.
- Eye/face: Chemical safety goggles if needed.
- Clothing: Wear appropriate protective clothing.
- Hand/skin: Protective gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching the 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.
- Body protection: Wear suitable protective clothing according to the concentration and amount of the substance at the workplace.

8.3 Other Protect

No smoking, drinking, or eating at the work site. Wash thoroughly after handling it.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Proclin 300

- a. Appearance: Liquid
- b. Odour: No data available
- c. Odour threshold: No data available
- d. pH 4.1 at 100 g/L

- e. Melting point/freezing point: -40 °C
- f. Initial boiling point and boiling range: 189 °C
- g. Flash point: 118 °C - closed cup
- h. Evaporation rate: No data available
- i. Flammability (solid, gas): No data available
- j. Upper/lower flammability or explosive limits: No data available
- k. Vapour pressure: No data available
- l. Vapour density: No data available
- m. Relative density: 1.03 g/cm³
- n. Water solubility: Soluble
- o. Auto-ignition temperature: No data available
- p. Decomposition temperature: No data available
- q. Viscosity: No data available
- r. Explosive properties: No data available
- s. Oxidizing properties: No data available

9.2 Sulfuric acid (H₂SO₄)

- a. Appearance: Colorless Liquid
- b. Odor: Pungent
- c. Odor threshold: No data available
- d. pH: ~1
- e. Melting point/freezing point: No data available
- f. Boiling point/Boiling range: No data available
- g. Flash point: No data available
- h. Evaporation rate: No data available
- i. Flammability (solid, gas): No data available
- j. Upper/lower flammability or explosive limits: No data available
- k. Vapor density: No data available
- l. Vapor pressure: No data available
- m. Relative density: No data available
- n. Solubility in/Miscibility with Water: Soluble
- o. Partition coefficient: noctanol/water: No data available
- p. Auto igniting: No data available
- q. Decomposition temperature: No data available
- r. Viscosity: No data available

9.3 Hydrogen Peroxide (H₂O₂)

- a. Appearance: Colorless liquid
- b. Odour: ODORLESS, OR HAVING AN ODOR RESEMBLING THAT OF OZONE
- c. Odour threshold: No data available

- d. pH: Weak acid; H₂O₂ Conc. wt% = 35, 50, 70, 90; corresponding true pH: 4.6, 4.3, 4.4, 5.1
- e. Melting point/freezing point: -0.43 °C
- f. Initial boiling point and boiling range: 126°C
- g. Flash point: Non-flammable
- h. Evaporation rate: No data available
- i. Flammability (solid, gas): Noncombustible Liquid, but a powerful oxidizer.
- j. Upper/lower flammability or explosive limits: No data available
- k. Vapour pressure: 23.3 mm Hg (30 °C)
- l. Vapour density: 1 (vs air)
- m. Relative density: 1.11g/mL at 20°C
- n. Water solubility: greater than or equal to 100 mg/mL at 72° F (NTP, 1992)
- o. Partition coefficient: noctanol/water: -1.36
- p. Auto-ignition temperature: Not flammable. (USCG, 1999)
- q. Decomposition temperature: no data available
- r. Viscosity: 1.245 centipoises (liquid)
- s. Explosive properties: No data available

10. STABILITY AND REACTIVITY

- **Reactivity:** No data available
- **Chemical stability:** Stable under recommended storage conditions
- **Possibility of hazardous reactions:** No data available
- **Conditions to avoid:** Heat, flames and sparks
- **Incompatible materials:** Strong oxidizing agent, Light sensitive, Alcohols, Organic materials, Heavy metals, Powdered metals, Strong reducing agents, Amines, Mercaptans.
- **Hazardous decomposition products**
 - **Other decomposition products:** No data available
 - Hazardous decomposition products formed under fire conditions: Carbon oxides, Nitrogen oxides (NO_x), Sulphur oxides, Hydrogen chloride gas.

11. TOXICOLOGICAL INFORMATION

11.1 Proclin 300

- **Acute toxicity**
 - LD50 Oral - Rat - 862 mg/kg
 - LD50 Dermal - Rabbit - 2,800 mg/kg
- **Skin corrosion/irritation**
 - Skin corrosion/irritation
 - Skin - Rabbit Result: Corrosive Serious eye damage/eye irritation
 - Eyes - Rabbit Result: Corrosive to eyes
 - Respiratory or skin sensitization - Guinea pig Result: May cause sensitization by skin contact.
 - Carcinogenicity: No component of this product present at levels greater than or equal to 0. 1% is identified as a probable, possible, or confirmed human carcinogen by IARC.

11.2 Sulfuric acid (H₂SO₄)

- **Acute toxicity**
 - LD50 Oral - Rat - 1530 mg/kg
 - LD50 Dermal - Rabbit - 2730 mg/kg
 - LC50 Inhalation- Rat - 850 mg/m³ 1h
- **Skin corrosion/irritation:** Can cause severe burns
- **Serious eye damage/irritation:** Can cause severe burns
- **Respiratory or skin sensitization:** No data available
- **Germ cell mutagenicity:** No data available
- **Carcinogenicity:** No data available
- **Reproductive toxicity:** No data available
- **Aspiration hazard:** Can cause severe burns
- **Ingestion:** May be harmful if swallowed. Causes burns.
- **Skin contact:** May be harmful if absorbed through skin. Causes burns.
- **Eye contact:** Causes eye burns.

11.3 Hydrogen Peroxide (H₂O₂)

- **Acute toxicity**
 - Oral:** no data available
 - Inhalation:** no data available
 - Dermal:** no data available
 - Skin corrosion/irritation:** no data available
 - Serious eye damage/irritation:** no data available
 - Respiratory or skin sensitization:** no data available
 - Germ cell mutagenicity:** no data available
- **Carcinogenicity**
- **Evaluation:** There is inadequate evidence in humans for the carcinogenicity of hydrogen peroxide. There is limited evidence in experimental animals for the carcinogenicity of hydrogen peroxide. Overall evaluation: Hydrogen peroxide is not classifiable as carcinogenic to humans (Group 3).
- **Reproductive toxicity:** no data available
- **STOT-single exposure**

The substance is corrosive to the eyes, skin, and respiratory tract. Corrosive ingestion. The vapor is severely irritating to the respiratory tract. Ingestion may cause strong foam formation with the risk of asphyxiation and aspiration. Exposure to this substance may produce oxygen bubbles (embolism) in the blood, resulting in shock.
- **STOT-repeated exposure**

Repeated or chronic inhalation of the vapor may cause chronic inflammation of the upper respiratory tract. Lungs may be affected by repeated or prolonged exposure. Substances may have effects on the hair. This may result in bleaching.
- **Aspiration hazard:** A harmful contamination of the air can be reached rather quickly through the evaporation of this substance at 20°C.

12. ECOLOGICAL INFORMATION

Data is not available. Do not allow the product to reach groundwater, watercourse, or sewage system.

13. DISPOSAL CONSIDERATIONS

Dispose of waste in accordance with applicable national, regional, or local regulations. Burn in a chemical incinerator equipped with an afterburner and scrubber, highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

14. TRANSPORT INFORMATION

RID/ADR: Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA: Non-Hazardous for Air Transport.

IMO: Non-Hazardous for Sea Transport.

15. REGULATORY INFORMATION**15.1 Proclin 300**

US Federal and State Regulations

SARA 313 Components: Not applicable.

SARA 311/312 Hazards: Not applicable.

CERCLA Reportable Quantity: Not applicable.

California Prop. 65 Components: Not applicable.

15.2 Hydrogen Peroxide (H₂O₂)

US Federal and State Regulations

SARA 313 Components

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals that are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute Health Hazard: No

Chronic Health Hazard: No

Fire Hazard: No

Sudden Release of Pressure Hazard: No

Reactive Hazard: No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

California Prop. 65 Components

This product does not contain any Proposition 65 chemicals.

15.3 Sulfuric acid (H₂SO₄)

SARA 313 Components

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals that are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Sulphuric acid CAS-No. 7664-93-9, Weight 2%, SARA 313 - Threshold Values 1.0

SARA 311/312 Hazard Categories

Acute Health Hazard: No

Chronic Health Hazard: No

Fire Hazard: No

Sudden Release of Pressure Hazard: No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

This product contains the following Proposition 65 chemicals.

Sulphuric acid CAS-No. 7664-93-9, Weight 2%, Category: Carcinogen

16. OTHER INFORMATION

This material is sold for in vitro use and lab research purposes only. It is not for any human or animal therapeutic or clinical diagnostic use.

Disclaimer: The information provided on this MSDS is correct to the best of our knowledge, information, and belief as of the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process unless specified in the text.

End of MSDS