

MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Product name	Enzyme-linked immunosorbent assay kit for research use only
Application	For research use only
Company	Novus Biologicals
Address	10771 E Easter Ave Centennial, CO 80112, USA
Website	www.novusbio.com
Phone	1-888-506-6887
SDS Date	2024.4.2

SECTION 2 HAZARDS 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%	124-43-6
Stop solution	Slight pungent and colorless, liquid	Sulfuric acid (H ₂ SO ₄)	2%	7664-93-9

2.1 Proclin 300


2.1.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [GHS/CLP] or 29 CFR

1910.1200 [OSHA] Sensitization, skin - Category 1

2.1.1 Label Element

Labeling according to Regulation (EC) No 1272/2008 [GHS/CLP]

Pictogram(s):	
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Signal Word: WARNING

Hazard statements:

H317: May cause an allergic skin reaction.

Precautionary statements:

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

P272: Contaminated work clothing should not be allowed out of the workplace.

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.

P362+P364: Take off contaminated clothing and wash it before reuse.

Other Hazards: None.

2.2 Sulfuric acid (H₂SO₄)

2.2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [GHS/CLP] or 29 CFR 1910.1200


[OSHA]

Skin Corrosion/Irritation - Category 2

Serious eye damage/eye irritation - Category 2A

2.2.1 Label Element

Labeling according to Regulation (EC) No 1272/2008 [GHS/CLP]

Pictogram(s):	
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Signal Word: WARNING

Hazard statements:

H315: Causes skin irritation.

H319: Causes serious eye irritation.

Precautionary statements:

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.

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact

2.3 Hydrogen Peroxide (H₂O₂)

Emergency Overview: These products do not contain any substances above any specific or generic concentration limits according to EC directives or respective national laws.

Classification of the mixture: These products do not contain any substances above any specific or generic concentration limits according to EC directives or respective national laws.

Label Elements: The products do not need to be labeled with hazard elements.

Other Hazards: None known.

SECTION 3 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	0.2%	--
96118-96-6	Proclin 300	0.05%	--
7664-93-9	Sulfuric acid (H ₂ SO ₄)	2%	231-639-5
7722-84-1	H ₂ O ₂	0.1%	231-765-0
77-92-9	Citric acid	0.2%	201-069-1
54827-17-7	3,3',5,5'-tetramethylbenzidine	0.1%	259-364-6

SECTION 4 FIRST-AID MEASURES

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 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.

SECTION 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 chemical or carbon dioxide.

For large fires, apply water from as far as possible. Use large quantities of water applied as a 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 (NO_x), Sulphur oxides, Hydrogen chloride gas.

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1 Person-related safety precautions

Use appropriate personal protective equipment to prevent contamination of skin, eyes and personal clothing. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe 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

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

SECTION 7 HANDLING AND STORAGE

7.1 Handling

- Wear appropriate protective clothing and safety gloves.
- Avoid inhalation.

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- Avoid contact with eyes, skin and clothing.
 - Mechanical exhaust required.
 - Keep away from ignition sources, heat and flame.
 - No smoking at working site.
 - Incompatibilities: Strong oxidizing agents, Strong acids. Handling and unloading should be light, to prevent packaging broken, damp and cause losses.
 - Working place should be equipped with appropriate varieties and quantities of firefighting equipment and leakage emergency treatment equipment.

7.2 Storage

- Store in cool place. Keep 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.

SECTION 8 EXPOSURE CONTROL/PPE

8.1 Engineering Controls

Mechanical exhaust 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.

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- Hand/skin: Protective 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.
 - 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 and eating at working site. Wash thoroughly after handling.

SECTION 9 PHYSICAL/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

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- 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

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- 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 concn 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: octanol/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

SECTION 10 STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Heat, flames and sparks

10.5 Incompatible materials

Strong oxidizing agent, Light sensitive, Alcohols, Organic materials, Heavy metals,

Powdered metals, Strong reducing agents, Amines, Mercaptans.

10.6 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.

SECTION 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 - 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 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 to its carcinogenicity to humans (Group 3).

Reproductive toxicity: no data available

STOT-single exposure

The substance is corrosive to the eyes, skin and respiratory tract. Corrosive on ingestion. The vapour is severely irritating to the respiratory tract. Ingestion may cause strong foam formation with 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 vapour may cause chronic inflammation of the upper respiratory tract. Lungs may be affected by repeated or prolonged exposure.

The substance may have effects on the hair. This may result in bleaching.

Aspiration hazard

A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C.

SECTION 12 ECOLOGICAL INFORMATION

12.1 Proclin 300

Ecotoxicity

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Results of PBT and vPvB assessment

No data available

Other adverse effects

No data available

12.2 Sulfuric acid (H₂SO₄)

Ecotoxicity

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Results of PBT and vPvB assessment

No data available

Other adverse effects

No data available

12.3 Hydrogen Peroxide (H₂O₂)

Toxicity

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

Persistence and degradability

no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

Other adverse effects

no data available

SECTION 13 DISPOSAL CONSIDERATION

13.1 Disposal methods

Dispose of waste in accordance to applicable national, regional, or local regulations.

Burn in a chemical incinerator equipped with an afterburner and scrubber b 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.

13.2 Contaminated packaging

Dispose in the same manner as unused product.

SECTION 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.

SECTION 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 which 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 which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

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

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Reactive 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).

Sulphuric acid Substances	CAS-No.	CWA – Reportable	Quantities	Quantities
	7664-93-9	1000 lb		X

California Prop. 65 Components

This product contains the following Proposition 65 chemicals.

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

SECTION 16 OTHER INFORMATION

The above information is believed to be correct but does not purport to be all inclusive

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