

## Material Safety Data Sheets

### Product Category: ELISA MAX™ Standard sets, ELISA MAX™ Deluxe sets, and LEGEND MAX™ kits

#### 1. MATERIAL SAFETY DATA SHEET (MSDS)-Antibodies and Recombinant Proteins

This MSDS covers i) Capture antibody, ii) detection antibody, iii) Avidin-HRP and iv) recombinant protein standards.

#### **IDENTIFICATION:**

The following products from BioLegend are covered under this MSDS.

- ◆ Recombinant proteins
- ◆ Purified monoclonal and polyclonal antibodies of mouse, rat, hamster, goat, donkey or rabbit origin
- ◆ Antibody and Protein conjugates to these molecules:
  - Horseradish peroxidase (HRPO)

These products are provided either as dry powder or in aqueous buffer solution. Where applicable, the preservative is either 0.09% (w/v) sodium azide or 0.1% (v/v) Kathon.

#### **HAZARDOUS INGREDIENTS:**

Materials Sodium azide, 0.09% (w/v) CAS# 26628-22-8  
Kathon, 0.1% (v/v)

Toxicity Data LD50 (sodium azide)=27mg/kg (oral-rat)  
LD50 (Kathon)=3350mg/kg (oral-rat)

#### **POTENTIAL HAZARD:**

The only hazards identified with these products are those associated with sodium azide or Kathon. Each is present at very low concentrations. Other components are purified proteins, fluorescent dye and buffer salt, none of which are considered hazardous.

#### **PHYSICAL DATA:**

The physical properties of these products have not been determined but are believed to be very close to those of water:

- ◆ Physical state: Odorless and colorless powder (recombinant proteins). Odorless and colorless clear liquid (recombinant proteins or antibodies, and biotin- or AKP-conjugates). Odorless and colored clear liquid (protein or antibody conjugates to fluorescent dyes-FITC, APC and PE dyes, Cy5, and enzyme HRPO).
- ◆ Boiling point: Undetermined
- ◆ Vapor pressure: Undetermined
- ◆ Solubility in water: Soluble
- ◆ Melting point: Undetermined
- ◆ Vapor density: Not applicable

#### **REACTIVITY DATA:**

These products are non-reactive to strong acid or base. Fluorescent dye-labeled products suffer photo-bleaching when exposed to light for prolonged time.



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#### **FIRE AND EXPLOSION HAZARD DATA:**

There is no unusual fire or explosion hazard associated with these products.

- ◆ Flash point: Not applicable
- ◆ Flammable Limits in Air: Not applicable
- ◆ Extinguishing media: Water, carbon dioxide, dry chemical powder, alcohol resistant foam
- ◆ Fire fighting procedures: Use respirator

#### **HEALTH HAZARD DATA:**

- ◆ Inhalation: May cause irritation
- ◆ Ingestion: Harmful if swallowed
- ◆ Skin contact: May cause irritation
- ◆ Eye contact: May cause irritation
- ◆ Acute effects by overexposure: May cause local discomfort if in contact with skin, eyes, inhaled, or ingested
- ◆ Emergency first aid procedures:
  - Skin: Rinse with water thoroughly. Wash with soap.
  - Eyes: Flush immediately with water for at least 15 minutes. Seek medical attention if irritation persists.
  - Inhaled: Remove to fresh air
  - Ingested: Wash mouth with plenty of water. See a physician if stomach discomfort persists

#### **SPILL, LEAK AND DISPOSAL PROCEDURES:**

If spilled or leaked, flush the area with water and drain to the sewer if allowed. Otherwise, collect on absorbent and dispose in approved landfill. In any case, waste disposal should be in accordance with ALL FEDERAL, STATE, and LOCAL ENVIRONMENTAL REGULATIONS.

#### **PROTECTION INFORMATION:**

Follow good laboratory practice when handling these products. The following precautionary measures are recommended:

- ◆ Eye protection: Laboratory safety goggles
  - ◆ Hands: Chemical resistant gloves
  - ◆ Skin: Laboratory protective clothing
- Handle the material in areas with adequate ventilation.

#### **SPECIAL PRECAUTIONS:**

Store products under conditions specified in the Product Information Sheet.  
All products from BioLegend are intended for research use only.

## **2. MATERIAL SAFETY DATA SHEET (MSDS)-TMB Substrate (Reagent A and Reagent B)**

**This MSDS covers TMB Substrate (Reagent A and Reagent B) which is provided in Deluxe Sets, and TMB Substrate Solution provide in the LEGEND MAX™ kits.**

#### **IDENTIFICATION:**

Product Name Reagent A, TMB Substrate Reagent Set (Deluxe Set)

Product Name TMB Substrate Solution (LEGEND MAX™ kit)

The product is provided as an aqueous buffer solution.

#### **HAZARDOUS INGREDIENTS:**

Materials Hydrogen Peroxide (H<sub>2</sub>O<sub>2</sub>), <0.1% CAS# 7722-84-1

Toxicity Data LD50 = 4060 mg/kg (skin-rat)

The solution is a mixture of the above listed material with non-hazardous additions. The concentration of H<sub>2</sub>O<sub>2</sub> is below the regulatory threshold limits described by OSHA standard 29 CFR 1910.1200.

**PHYSICAL DATA:**

Physical state: Colorless clear liquid, odorless  
Boiling point: Undetermined  
Vapor pressure: Not applicable  
Solubility in water: Soluble  
Melting point: Undetermined  
Vapor density: Undetermined

**REACTIVITY DATA:**

The product has no known dangerous reactions or dangerous decomposition products. Avoid strong oxidizing agents. Protect from light.

**FIRE AND EXPLOSION HAZARD DATA:**

There is no unusual fire and explosion hazard associated with this product.

- ◆ Flash point: Not applicable
- ◆ Explosion limits: No explosion hazard
- ◆ Extinguishing media: Water, carbon dioxide, dry chemical powder, alcohol resistant foam
- ◆ Fire fighting procedures: Wear self-contained breathing apparatus. Wear fully protective suit.

**HEALTH HAZARD DATA:**

Based on our knowledge, when used and handled according to specification, the product does not have harmful effects.

- ◆ Ingestion: May be harmful
- ◆ Skin contact: No irritating effect
- ◆ Eye contact: No irritating effect
- ◆ Inhalation: No irritating effect
- ◆ Emergency first aid procedures:
  - Skin: Immediately wash with water and soap. Rinse thoroughly with water.
  - Eyes: Flush immediately with water for at least 15 minutes. Consult doctor if discomfort exists.
  - Inhaled: Supply with fresh air. Consult doctor if discomfort exists.
  - Ingested: Immediately wash mouth with plenty of water. Consult doctor if discomfort exists.

**SPILL, LEAK AND DISPOSAL PROCEDURES:**

If small quantity spilled or leaked, collect on absorbent and dispose with solid waste. Disposal should be in accordance with ALL FEDERAL, STATE, and LOCAL ENVIRONMENTAL REGULATIONS.

**PROTECTION INFORMATION:**

Follow good laboratory practice when handling this product. The precautionary measures are as follows:

Eye protection: Laboratory safety goggles  
Hands: Chemical resistant gloves  
Skin: Laboratory protective clothing  
Respiratory: Fume hood or in areas with adequate ventilation/exhaustion.

**SPECIAL PRECAUTIONS:**

Store at 2-8°C in a well-sealed container.  
Protect from light.  
Keep away from strong oxidizing agents.  
This product is intended for research use only.

**IDENTIFICATION:**

Product Name Reagent B, TMB Substrate Reagent Set



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The product is provided as an aqueous buffer solution.

#### **HAZARDOUS INGREDIENTS:**

Materials TMB (3,3',5,5' tetramethylbenzidine dihydrochloride), < 0.1% (w/v)  
CAS# 7411-49-6  
Methanol, 40% (v/v) CAS# 67-56-1  
Dimethyl Sulfoxide (DMSO), <2% (v/v) CAS# 67-68-5

Toxicity Data LD50 (methanol) = 5628 mg/kg (oral-rat)  
LD50 (DMSO) = 14500mg/kg (oral-rat)

The solution is a mixture of the above listed materials with non-hazardous additions. Toxic if contacted through skin, inhaled or ingested.

#### **PHYSICAL DATA:**

- ◆ Physical state: Colorless clear liquid, odor of methanol
- ◆ Boiling point: Undetermined
- ◆ Vapor pressure: Not applicable
- ◆ Solubility in water: Soluble
- ◆ Melting point: Undetermined
- ◆ Vapor density: Undetermined

#### **REACTIVITY DATA:**

The product has no known dangerous reactions or dangerous decomposition products. Avoid strong oxidizing agents and protect from light.

#### **FIRE AND EXPLOSION HAZARD DATA:**

The product is highly flammable; it is not self igniting and has no explosion hazard.

- ◆ Flash point: Not applicable
- ◆ Explosion limits: Lower 0.9% Vol.%; upper 44.0 Vol. %
- ◆ Extinguishing media: Water, carbon dioxide, dry chemical powder, alcohol resistant foam
- ◆ Fire fighting procedures: Wear self-contained breathing apparatus. Wear fully protective suit.

#### **HEALTH HAZARD DATA:**

The product exhibits danger of serious irreversible effects through all means of contact.

- ◆ Ingestion: Harmful if swallowed
- ◆ Skin contact: May cause irritation
- ◆ Eye contact: May cause irritation
- ◆ Inhalation: May be harmful if inhaled
- ◆ Emergency first aid procedures:
  - Skin: Immediately wash with water and soap. Rinse thoroughly with water.
  - Eyes: Flush immediately with water for at least 15 minutes. Consult doctor.
  - Inhaled: Supply with fresh air. Consult doctor.
  - Ingested: Immediately wash mouth with plenty of water. Immediately call doctor.

#### **SPILL, LEAK AND DISPOSAL PROCEDURES:**

If spilled or leaked, collect on absorbent. It must not be disposed with solid waste. Disposal should be in accordance with ALL FEDERAL, STATE, and LOCAL ENVIRONMENTAL REGULATIONS.

#### **PROTECTION INFORMATION:**

Follow good laboratory practices when handling this product. The following precautionary measures are recommended:

Eye protection: Laboratory safety goggles  
Hands: Chemical resistant gloves  
Skin: Laboratory protective clothing



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Respiratory: Fume hood or in areas with adequate ventilation/exhaustion.

**SPECIAL PRECAUTIONS:**

- Store at 2-8°C in a well-sealed container.
- Protect from light.
- Keep away from strong oxidizing agents.
- No smoking near this product.
- Ensure good ventilation/exhaustion at the workplace.
- This product is only intended for research use only.

**3. MATERIAL SAFETY DATA SHEET (MSDS)-Assay Diluent**

**This MSDS covers Assay Diluent (included in Deluxe Sets only)**

**IDENTIFICATION:**

Product Name: Assay Diluent (5x)

This product is provided as an aqueous buffer solution.

**HAZARDOUS INGREDIENTS:**

Materials: Kathon, 1.0% (v/v)

Toxicity Data: LD50 (Kathon) =3350mg/kg (oral-rat)

**POTENTIAL HAZARD:**

The only hazards identified with the product are those associated with Kathon, the concentration of which is below the regulatory threshold limits described by OSHA standard 29 CFR 1910.1200.

**PHYSICAL DATA:**

- ◆ Physical State: Odorless, light gold color, clear liquid
- ◆ Boiling point: Undetermined
- ◆ Melting point: Undetermined
- ◆ Vapor pressure: Not applicable
- ◆ Vapor density: Not applicable
- ◆ Solubility in water: Soluble

**REACTIVITY DATA:**

There is no known dangerous reaction or decomposition product. Avoid strong oxidizing agents.

**FIRE AND EXPLOSION HAZARD DATA:**

There are no unusual fire or explosion hazards associated with these products.

- ◆ Flash point: Not applicable
- ◆ Flammable Limits in Air: Not applicable
- ◆ Extinguishing media: Water, carbon dioxide, extinguishing powder, alcohol resistant foam
- ◆ Fire fighting procedures: Use respirator and wear protective suit

**HEALTH HAZARD DATA:**

- ◆ Inhalation: May cause irritation
- ◆ Ingestion: Harmful if swallowed
- ◆ Skin contact: May cause irritation
- ◆ Eye contact: May cause irritation
- ◆ Acute effects by overexposure: May cause local discomfort if in contact with skin, eyes, or inhaled and ingested

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- ◆ Emergency first aid procedures:
  - Skin: Rinse thoroughly with water and soap.
  - Eyes: Flush immediately with water for at least 15 minutes. Seek medical attention if irritation persists.
  - Inhaled: Remove to fresh air
  - Ingested: Wash mouth with plenty of water. See a physician if stomach discomfort persists

#### **SPILL, LEAK AND DISPOSAL PROCEDURES**

If spilled or leaked, flush the area with water and drain to the sewer if allowed. Otherwise, collect on absorbent and dispose in approved landfill. In any case, waste disposal should be in accordance with ALL FEDERAL, STATE, AND LOCAL ENVIRONMENTAL REGULATIONS.

#### **PROTECTION INFORMATION**

Follow good laboratory practice when handling these products. Eye protection and skin protection are required. Handle the material in areas with adequate ventilation.

#### **SPECIAL PRECAUTIONS**

Store the product at 4°C in well-sealed container  
This product is intended for research use only.

### **4. MATERIAL SAFETY DATA SHEET (MSDS)-Coating Buffer** **This MSDS covers Coating Buffer (provided in Deluxe sets only)**

#### **IDENTIFICATION:**

Product Name Coating Buffer (5x) for ELISA MAX Deluxe SET  
The product is provided as an aqueous buffer solution containing sodium carbonate and sodium bicarbonate.

#### **HAZARDOUS INGREDIENTS:**

The solution does not contain hazardous materials, or the concentrations are below the regulatory threshold limits according to OSHA standard 29CFR 1910.1200.

#### **PHYSICAL DATA:**

- ◆ Physical state: Odorless, colorless, clear liquid
- ◆ Boiling point: Undetermined
- ◆ Melting point: Undetermined
- ◆ Vapor pressure: Not applicable
- ◆ Vapor density: Not Applicable
- ◆ Solubility in water: Soluble

#### **REACTIVITY DATA:**

The product has no known dangerous reactions or dangerous decomposition products. Avoid strong oxidizers.

#### **FIRE AND EXPLOSION HAZARD DATA:**

There is no unusual fire and explosion hazard associated with this product.

- ◆ Flash point: Not applicable
- ◆ Flammable Limits in Air: Not applicable
- ◆ Extinguishing media: Water, carbon dioxide, dry chemical powder, alcohol resistant foam
- ◆ Fire fighting procedures: Wear self-contained breathing apparatus. Wear fully protective suit.



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### **HEALTH HAZARD DATA:**

Based on our knowledge, when used and handled according to specification, the product does not have harmful effects.

- ◆ Ingestion: May be harmful if swallowed
- ◆ Skin contact: No irritating effect
- ◆ Eye contact: No irritating effect
- ◆ Emergency first aid procedures:
  - Skin: Immediately wash with water and soap. Rinse with water thoroughly.
  - Eyes: Flush immediately with water for at least 15 minutes.
  - Inhaled: Supply with fresh air or oxygen.
  - Ingested: Immediately wash mouth with plenty of water. Consult doctor if discomfort persists.

### **SPILL, LEAK AND DISPOSAL PROCEDURES:**

If spilled or leaked, collect on absorbent. Small quantity can be disposed with solid waste. Disposal should be in accordance with ALL FEDERAL, STATE, and LOCAL ENVIRONMENTAL REGULATIONS. This product is not considered a RCRA hazardous waste.

### **PROTECTION INFORMATION:**

Follow good laboratory practice when handling this product. The precautionary measures are as follows:

Eye protection: Laboratory safety goggles

Hands: Chemical resistant gloves

Skin: Laboratory protective clothing

Respiratory: Not required

### **SPECIAL PRECAUTIONS:**

Store at 2-8°C in well-sealed container. Store away from strong oxidizing agents. This product is intended for research use only.

## **5. MATERIAL SAFETY DATA SHEET (MSDS)-Stop Solution**

**This MSDS covers Stop Solution (provided in LEGEND MAX™ kits only)**

### **IDENTIFICATION:**

Product Name Stop Solution for LEGEND MAX™ kits

The product is provided as an aqueous buffer solution containing sulfuric acid.

### **HAZARDOUS INGREDIENTS:**

The solution contains hazardous materials: Sulfuric Acid, H<sub>2</sub>SO<sub>4</sub>.

### **PHYSICAL DATA:**

- ◆ Physical state: Slight odor, colorless, clear liquid
- ◆ Boiling point: Undetermined
- ◆ Melting point: Undetermined
- ◆ Vapor pressure: Not applicable
- ◆ Vapor density: Not Applicable
- ◆ Solubility in water: Soluble

### **REACTIVITY DATA:**

WARNING! Strongly corrosive to body tissue and slightly toxic by ingestion. Target organs: Respiratory system, eyes, skin, teeth



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**FIRE AND EXPLOSION HAZARD DATA:**

There is no unusual fire and explosion hazard associated with this product.

- ◆ Flash point: Not applicable
- ◆ Flammable Limits in Air: Not applicable
- ◆ Extinguishing media: use dry chemical or carbon dioxide. DO NOT use water
- ◆ Fire fighting procedures: Wear self-contained breathing apparatus. Wear fully protective suit.

**HEALTH HAZARD DATA:**

Based on our knowledge, when used and handled according to specification, the product does not have harmful effects.

- ◆ Ingestion: May be harmful if swallowed.
- ◆ Skin contact: May be harmful.
- ◆ Eye contact: May be harmful.
- ◆ Emergency first aid procedures:
  - Skin: Wash exposed area with soap and water. If irritation persists, seek medical attention.
  - Eyes: Wash eyes with plenty of water for at least 15 minutes, lifting lids occasionally. Seek Medical Aid.
  - Inhaled: Supply with fresh air or oxygen. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
  - Ingested: Give several glasses of milk or water. Vomiting may occur spontaneously, but DO NOT INDUCE! Never give anything by mouth to an unconscious person.

The above information is believed to be correct but does not purport to be all inclusive and is only intended to be used as a guide. BioLegend shall not be held responsible for any damage resulting from the use of these products or the information contained in this Material Safety Data Sheet.

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