



PBL Interferonsource Material Safety Data Sheet

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Section 1: Product and Company Identification

Product Name: Interferon ELISA Kits

Manufacturer: PBL Biomedical Laboratories
131 W Ethel Road
Suite 6
Piscataway, NJ 08854 USA
Tel: 732.777.9123, Facsimile: 732.777.9141

This MSDS is applicable to the following products:

Product Number	Product Name
41100	Human Interferon Alpha ELISA kit
41105	Human Interferon Alpha Multi-subtype ELISA kit
41110	Human Interferon Alpha Serum Samples ELISA kit
41410	Human Interferon Beta ELISA kit
42400	Mouse Interferon Beta ELISA kit
42420	TLR-3 Ready™ Mouse Interferon Beta ELISA kit

Note: To the best of our knowledge, at the supplied concentrations stated below, the products do not pose a hazard equivalent to the hazard posed by the individual ingredients in their pure form and have thereby classified each in its entirety as non-hazardous.

In compliance with CFR 29 1910.1200(g) 2(i) (C) (3), all ingredients that may present minor physical hazards while in the mixture have been listed.

It is recommended to the user to follow Sections 4 to 7 in event of an emergency and for proper handling and storage instructions. The user should refer to Section 8 with regard to appropriate protective equipment.

Section 2: Composition / Information on Ingredient

Component	Composition
Coated Plates	<0.1 % Kathon CG/ICP
A: Wash Concentrate	0.1 % v/v Kathon CG/ICP
B: IFN standard	< 1 % w/v Bovine Serum Albumin (BSA)
C: Dilution Buffer/ Sample Diluent	< 1 % w/v BSA; 0.1 % v/v Kathon CG/ICP
D: Antibody Concentrate	None
E: HRP Conjugate Concentrate	None
F: HRP Concentrate Diluent	< 1 % w/v BSA; 0.1 % v/v Kathon CG/ICP
G: TMB Substrate solution	<0.1 % v/v Tetramethylbenzidine Dihydrochloride
H: TMB STOP Solution	< 2% v/v Hydrochloric Acid; < 2% v/v Sulfuric Acid
I: Antibody Diluent *	< 1 % w/v BSA, 0.1 % v/v Kathon CG/ICP
Poly (I:C) +	5'-Inosinic acid homopolymer, complex with 5'- Cytidylic acid homopolymer 1:1

* Only in product 41110

+ Only in product 42420



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Section 2: Composition / Information on Ingredient continued

1) Kathon CG/ICP

- Ingredients: 5-Chloro-2-Methyl-4-Isothiazolin-3-One, 2-Methyl-4-Isothiazolin-3-One, Magnesium Chloride anhydrous, Magnesium Nitrate, Copper Nitrate Trihydrate, water
- CAS Number: 26172-55-4, 2682-20-4, 7786-30-3, 10377-60-3, 10031-43-3
- EC Number: 247-761-7 (Kathon CG/ICP)
- Symbol: C
- R-Phrases: R 34, 43

2) TMB Dihydrochloride

- 3,3',5',5' Tetramethylbenzidine Dihydrochloride
- Molecular Formula: $C_{16}H_{20}N_2 \cdot 2HCl \cdot H_2O$
- CAS Number: 64285-73-0
- EC Number: 264-769-6
- Symbol: Xn
- R-Phrases: R20/21/22, R40

3) H: STOP Solution

- | | | |
|----------------------|----------------------|------------------|
| • Ingredient: | a) Hydrochloric Acid | b) Sulfuric Acid |
| • Molecular formula: | a) HCL | b) H_2SO_4 |
| • Synonym: | a) Muriatic acid | b) none |
| • CAS Number: | a) 7647-01-0 | b) 7664-93-9 |
| • EC Number: | a) 231-595-7 | b) 231-639-5 |
| • Symbol: | a) C | b) C |
| • R-Phrases: | a) R34, R37 | b) R35 |

4) BSA

- Ingredient: Serum Albumin
- CAS Number: 9048-46-8
- EC Number: 232-936-2
- R-phrase: No information required

5) Poly I:C

- Ingredient: 5'-Inosinic acid homopolymer, complex with 5'- Cytidylic acid homopolymer (1:1)
- Synonym: Poly C poly I, Polycytidylic-polyinosinic acid, Polyinosinate-polycytidylate, Ploy (I).poly (C)
- CAS Number: 24939-03-5
- EC Number: None
- R-phrase: N/A



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Section 3: Hazards Identification

Emergency Overview

1) Kathon CG/ICP

Note: Information on toxicity at the supplied concentration of Kathon CG/ICP (0.1 % v/v) is unavailable. The following information pertains to pure Kathon CG/ICP.

- Corrosive
- Skin sensitizer
- May cause burns

2) TMB Dihydrochloride

- Avoid contact and inhalation.

3) STOP Solution

Ingredients: a) < 2 % v/v Hydrochloric acid b) < 2 % v/v Sulfuric acid

Note: Information on toxicity at the supplied concentration of Sulfuric Acid and Hydrochloric Acid is unavailable. The following information pertains to 99% Sulfuric Acid and 99 % Hydrochloric Acid.

- Corrosive
- Harmful by inhalation
- Causes skin and eye burns
- Toxic if swallowed

4) BSA

- Mild irritant to the mucous membrane, respiratory tract
- Can cause allergic reactions to users with an allergy to dairy products.

5) Poly (I:C)

- Universal protection measures are recommended.

Section 4: Symptoms and First Aid Measures

Symptoms:

- *Inhalation:* Lung irritants.
- *Skin Contact:* May be skin irritants and non-sensitizers. Skin inflammation is characterized by itching, reddening, and occasional blistering.
- *Eye Contact:* Eye irritants.
- *Ingestion:* Can cause nausea and vomiting.

First Aid Measures:

- *Ingestion / Oral exposure:* If the person is conscious wash mouth with water. If large quantity of any component is swallowed call a physician immediately. Loosen any tight clothing.
- *Inhalation:* If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms persist or reappear.



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Section 4: Symptoms and First Aid Measures continued

- *Skin Contact:* If large quantity of any component is in contact with the skin, wash with ample amounts of soap and water for at least 15 minutes. Cover the skin with an emollient. Get medical attention if irritation develops. Cold water may be used.
- *Eye Contact:* Check for and remove any contact lenses. Immediately flush eyes with ample amounts of water for at least 15 minutes. Cold water may be used. Get medical attention if irritation occurs.

Section 5: Fire Fighting Measures

- *Flammability of Product:* May be combustible at extreme temperatures.
- *Flash Points:* Not available for the provided concentrations.
- *Fire Hazards in presence of Various Substances:* Not available
- *Fire Fighting Media:* Small Fire: Use DRY chemical powder.
Large fire: Use water spray, fog or foam. Do not use water jet.
- *Protective Clothing (Fire):* Use an approved/certified respirator or equivalent. Use protective clothing to avoid contact with skin and eyes.
- *Special Remarks on Fire Hazards:* Not available
- *Hazardous thermal decomposition products:* STOP solution: Hydrogen chloride, hydrogen gas, oxides of sulfur, chlorine. BSA: Toxic fumes.

Section 6: Accidental Release Measures

- *Procedures of Personal Precautions:* Wear safety glasses, lab coat and use an approved certified respirator or equivalent. Must wear Gloves.
- *Small Spill and Leak:* Use appropriate tools to put the spilled solid in a waste disposal container. Finish cleaning by water on the contaminated surface and dispose of according to local and regional authority requirements.
- *Environmental Precautions and Clean-up Methods:* Use a shovel to put the material into a waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow the water to evacuate through the sanitary system.

Section 7: Handling and Storage

- *Handling:* Avoid breathing vapors, contact with skin or ingestion. Wear a fully-buttoned lab coat and gloves while working with the product.
- *Storage:* Keep all containers tightly closed in a cool and well-ventilated area. Refer to the storage temperatures indicated in the protocol. It is recommended to use original containers for storage. Do not wash out container and use it for other purposes.
- *Intended Use:* Refer to the protocol supplied for proper use. If questions arise please contact technical support info@interferonsource.com
- *Packaging materials:* Use original containers.



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Section 8: Exposure Controls/Personal Protection

- Engineering Controls
 - Safety Shower
 - Eye Wash
- Personal Protective Equipment
 - Lab Coat
 - Gloves
 - Safety Glasses (recommended)
- Exposure Limits:
 - 1) Kathon CG/ICP
 - OSHA PEL- Not Established
 - ACGIH TLV- Not Established
 - 2) TMB Substrate Solution
 - Ingredient: 3', 3'-5', 5' Tetramethylbenzidine dihydrochloride

 - OSHA PEL-Not Established
 - ACGIH TLV: Not Established
 - 3) TMB Stop Buffer
 - Sulfuric Acid
 - OSHA PEL- 1 mg/m³ TWA for 8 H
 - ACGIH TLV-1 mg/m³ TWA for 8 H

 - Hydrochloric Acid
 - OSHA PEL-7.5 mg/m³TWA for 8 H
 - ACHGIH TLV-7.5 mg/m³TWA for 8 H
 - 4) BSA
 - OSHA PEL- Not Established
 - ACGIH TLV- Not Established
 - 5) Poly (I:C)
 - OSHA PEL- Not Established
 - ACGIH TLV- Not Established

Section 9: Physical and Chemical Properties

- Physical State and Appearance: All components besides the plates are in liquid state. For Human IFN Beta ELISA kits, vial B (IFN standard) is supplied frozen.
- Dispersion properties: Not available
- Solubility: Not applicable
- Odor: Odorless
- Taste: Not available
- Color: Colorless. The color of the liquid components may vary with time or change in pH.



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Section 10: Stability and Reactivity

- Stability and Reactivity: All components are stable at recommended storage conditions. TMB Stop buffer can react with metals and strong bases.
- Conditions to Avoid: Extreme temperatures.
- Materials to Avoid: Avoid contact of metals and strong bases with the TMB Stop Buffer. Hazardous Decomposition Products:
 - Reaction of TMB Stop buffer with metals and strong bases: Hydrogen chloride, Chlorine, Hydrogen Gas, and Oxides of Sulfur.
 - Combustion of BSA may emit toxic fumes.
 - There are no hazardous decomposition products for the remaining components of the kit.
- Hazardous Polymerization: Will not occur

Section 11: Toxicological Information

1) Kathon CG/ICP

This information is based on data on pure Kathon CG/ICP. At the supplied concentration Kathon CG/ICP 0.1 % v/v, the toxicological information has not been established.

LD50	Rat	Rabbit
Oral:	75 mg/kg	-----
Skin:	-----	>5000 mg/kg

Chronic effects on Humans: None known

Other toxic effects on Humans: Causes burns in the eye, skin and is extremely destructive to the mucous membrane of the upper respiratory tract.

Special remarks on Chronic Effects on Humans: None

Special remarks on Other Toxic effects on Humans: Inhalation may result in spasm, inflammation, and edema. Symptoms: burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting.

Special remarks on toxicity to Animals: Not available

2) TMB dihydrochloride

LD50: Not available

Chronic effects on Humans: None known

Other toxic effects on Humans: Possible irritant to eyes, mucous membrane and respiratory track.

Special Remarks on Chronic Effects on Humans: None

Special Remarks on other Toxic Effects on Humans: None

Special remarks on toxicity to Animals: Not available

3) Stop Solution

This information is based on data on pure Sulfuric Acid (95-98 % v/v) and pure Hydrochloric Acid (95-98 % v/v). At the supplied concentration (< 2 % v/v), the toxicological information has not been established. It is recommended that safety goggles, gloves and a lab coat must be worn while working with STOP solution.

LD50	Sulfuric Acid (Rabbit)	Hydrochloric Acid (Rat)
Oral:	900 mg/kg	2140 mg/kg

Chronic effects on Humans: Sulfuric Acid-Group 1 Carcinogen, Hydrochloric Acid- Group 3 Carcinogen.

Other toxic effects on Humans: Causes severe burns to eyes, mucous membrane and respiratory track.

Very toxic if swallowed. Causes skin burns on contact.



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Section 11: Toxicological Information continued

Special Remarks on Chronic Effects on Humans: None
Special Remarks on other Toxic Effects on Humans: None
Special Remarks on toxicity to Animals: None

4) BSA

LD50: Not available

Chronic effects on Humans: None known

Other toxic effects on Humans: Possible mild irritant to eyes, mucous membrane and respiratory track.

Special Remarks on Chronic Effects on Humans: None

Special remarks on toxicity to Animals: Not available

Special Remarks on other Toxic Effects on Humans: **BSA may be an allergen to users with an allergy to dairy products. Handle the product with appropriate personal protection gear if there is a known allergy to dairy products.**

5) Poly (I:C)

LD50

Intravenous

Intraperitoneal

Rat

185 mg/kg

365 mg/kg

Mouse

9500 mg/kg

35 mg/kg

Chronic effects on humans: Tests on HeLa cells have shown inhibition of DNA at concentrations above 500 µg/L.

Other toxic effects on humans: Poly (I:C) may stimulate the immune system.

Special remarks on chronic effects: The toxicological properties have not been thoroughly investigated.

Special remarks on toxicity to animals: Tests on rabbits indicate reproductive hazard.

Section 12: Ecological Information

No information available

Section 13: Disposal Considerations

For every component, waste must be disposed according to federal, state and local environment control regulations.

Section 14: Transport Information

DOT Proper Shipping Name: None

The kit is transported as Non-Hazardous. All products and materials are transported at storage conditions mentioned in the protocol.

Section 15: Regulatory Information

Label Requirements

Europe: Product not classified according to EU regulations.



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Section 15: Regulatory Information continued

USA:

HCS Classification: None.

US Federal Regulations

SARA 302/304/311/312 extremely hazardous substances: No components
SARA 302/304 emergency planning and notification: No components
SARA 302/304/311/312 hazardous chemicals: Kathon CG/ICP, Sulfuric Acid, and Hydrochloric Acid

SARA 311/312 MSDS distribution-chemical inventory-hazard identification: Kathon CG/ICP, Sulfuric Acid, and Hydrochloric Acid: Corrosive

TSCA 8 (b) inventory: Sulfuric Acid, Hydrochloric Acid, and Kathon CG/ICP

Clean Water Act (CWA) 307: No components

Clean Water Act (CWA) 311: No components

Clean Air Act (CAA) 112 accidental release prevention: No components

Clean Air Act (CAA) 112 regulated flammable substances: No components

Clean Air Act (CAA) 112 regulated toxic substances: No components

The product is not controlled under WHIMS (Canada)

International Regulations

CEPA DSL: No components

EINECS: Not available

DSCL (EEC): Not classified

Australia (NICNAS): No components

Philippines (RA6969): No components

Germany Water class: No components

VCI WGK: Not classified

Korea (TCCCL): No components

State Regulations

New Jersey Right to Know Components: Sulfuric Acid, Hydrochloric Acid, Kathon CG/ICP

Pennsylvania Right to Know Components: Sulfuric Acid, Hydrochloric Acid, Kathon CG/ICP

California prop. 65: No ingredients found.

Section 16: Other Information

Disclaimer: For R & D use only. Not for drug, household or other uses.

Warranty: The above information is correct to the best of our knowledge. This information is not guaranteed to be all inclusive. The user should handle all materials with care using the MSDS as a guideline only. PBL Biomedical Laboratories shall not be held responsible for any damage resulting from handling or from contact with the above product.