



PBL InterferonSource

Section 1: Product and Company Identification

Product Name: *iLite*TM Human Interferon Alpha Kit Cat. No. 51100

Document # MSDS51100 Rev.00

Effective Date: 05/15/2007

Manufacturer: PBL Biomedical Laboratories
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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
A. <i>iLite</i> TM Cells	1) < 2.5 % DIMETHYLSULFOXIDE (DMSO) 2) Pro-monocytic human cell line characterized by expression of MHC Class II antigens
B. Interferon Standard	None
C. Assay Diluent	None
D. Steady-Glo [®] Luciferase Assay Buffer	None
E. Steady-Glo [®] Luciferase Assay Substrate	Lyophilized mixture of: 3) Dithiothreitol (DTT) (50-75%) 4) Sodium Dithionite (1-5%)
F. 96-well Sterile Microtiter Plate	None
G. Negative Control	None
H. Positive Control	None

Note: The following information pertains to the hazardous ingredients in pure form and not at the supplied concentrations.

A) *iLite*TM Cells

- 1) Dimethylsulfoxide (DMSO)
 - CAS Number: 67-68-5
 - EC Number: 200-644-3
 - Symbol: Xi Irritant
 - R-Phrases: R 36,37,38



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2) Pro-monocytic human cell line

- The cell line is characterized by expression of MHC Class II antigens, the human lymphocyte antigen (HLA-DR) in particular, on the cell surface. The cells are assigned Risk Group 1 (RG1).

E) Steady-Glo Luciferase Assay Substrate

1) Dithiothreitol (DTT)

- Ingredient: 1,4-Dithiothreitol
- Molecular formula: C₄H₁₀O₂S₂
- Synonym: Cleland's Reagent; Threitol; DITHIOTHREITOL; 2,3-Butanediol; 1,4-dimercapto DI-threo
- CAS Number: 3483-12-3, 27565-41-9
- EC Number: 248-531-9
- Symbol: Xn Harmful
- R-Phrases: R 22,36,38

2) Sodium dithionite

- Ingredient: Sodium hydrosulfite
- Synonym: Sodium dithionite, Sodium hydrosulfite, Sodium sulfoxylate
- CAS Number: 7775-14-6
- EC Number: 231-890-0
- Symbol: Xn Harmful
- R-phrase: R 7,22,31

Section 3: Hazards Identification

A) *iLite*TM Cells

1] < 2.5 % Dimethylsulfoxide (DMSO)

- Readily absorbed through skin.
- May be harmful if absorbed through skin, swallowed or inhaled.
- May cause irritation to skin, eyes and respiratory tract.
- Target Organs are skin and eyes.

2) Pro-monocytic human cell line

- Because the cells are from human source, they must be treated as potentially infectious and contaminated biological specimens. Universal precautions must be maintained.

E) Steady-Glo Luciferase Assay Substrate

1] 50-75 % Dithiothreitol (DTT)

- Harmful if swallowed. Can cause nausea, headache, vomiting, weakness and diarrhea.
- Irritant to eyes, skin and respiratory system.
- Information on chronic exposure is unavailable.
- Target Organs : May affect Nervous system; Affects Pulmonary system.

2] 1-5 % Sodium Dithionite

- In its pure form Sodium Dithionite is spontaneously combustible and liberates toxic gas in contact with water and acids. Information on these effects at a concentration of 1-5 % is not available.
- Harmful if swallowed.



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Section 4: Symptoms and First Aid Measures

Symptoms:

- *Inhalation*: Shortness of breath, nausea, weakness, bluish skin color, irregular heartbeat.
- *Skin Contact*: Redness, itching and pain.
- *Eye Contact*: Redness and pain.
- *Ingestion*: Nausea, vomiting, diarrhea, weakness.

First Aid Measures:

- *Ingestion / Oral exposure*: If the person is conscious wash mouth with water. If swallowed call a physician immediately.
- *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.
- *Skin Contact*: Wash with ample amounts of soap and water for at least 15 minutes. Remove soiled clothing. Seek medical attention if irritation develops.
- *Eye Contact*: Check for and remove any contact lenses. Immediately flush eyes with ample amounts of water for at least 15 minutes. Seek medical attention if irritation occurs.

Section 5: Fire Fighting Measures

- *Flammability of Product*: Materials are not self-igniting at the supplied concentrations.
- *Flash Points*: Not available for the provided concentrations.
- *Fire Hazards in presence of Various Substances*: Not available at the supplied concentrations. Pure Sodium Dithionite self ignites on contact with water and acids.
- *Fire Fighting Media*:
Small fires: CO₂, DRY chemical powder or water spray.
Large fires: Use water spray, fog or alcohol resistant 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*: Sodium dithionite: Sulfur oxides

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. Do not allow to enter sewers/surface or ground water.

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.
 - *iLite™ Cells* - Operate to Biosafety Level I or II



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- **Storage:** Keep all containers tightly closed. Store in original containers according to the storage temperatures indicated in the protocol. Do not wash out container and use for other purposes.
- **Intended Use:** Refer to the protocol supplied for proper use. If questions arise please contact technical support techservice@interferonsource.com
- **Packaging materials:** Use original containers.

Section 8: Exposure Controls/Personal Protection

- Engineering Controls
 - Safety Shower
 - Eye Wash
- Personal Protective Equipment
 - Lab Coat (strongly recommended)
 - Gloves (strongly recommended)
 - Safety Glasses
- Exposure Limits:
 - OSHA PEL- Not established
 - ACGIH TLV- Not established
 - NIOSH- Not established

Section 9: Physical and Chemical Properties

- Physical State and Appearance:
 - *iLite*TM Cells: Frozen
 - Steady-GLO Luciferase assay substrate: Powder
- Dispersion properties: Not available
- Solubility:
 - *iLite*TM Cells: Not applicable
 - Steady-GLO Luciferase assay substrate: Water
- Odor:
 - Steady-GLO Luciferase assay substrate: Sulphurous
- Taste: Not available
- Color:
 - *iLite*TM Cells: Colorless
 - Steady-GLO Luciferase assay substrate: Whitish

Section 10: Stability and Reactivity

- Stability and Reactivity: All components are stable at recommended storage conditions.
- Conditions to Avoid: Temperatures > 100° C
- Steady-GLO Luciferase assay substrate
 - Materials to Avoid: acids, alkalis and oxidizing agents
 - Hazardous Decomposition Products: Sulfur Oxides , Nitrogen Oxides, Carbon Monoxide and Carbon Dioxide
- Hazardous Polymerization: Will not occur



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Section 11: Toxicological Information

A) *iLite*TM Cells

1) Dimethylsulfoxide

This information is based on data on pure Dimethylsulfoxide. At the supplied concentration Dimethylsulfoxide (< 2.5 % v/v), the toxicological information has not been established.

LD50 Rat
Oral: 14500 mg/kg

2) Pro-monocytic cell line

LD50: Not applicable

Because the cells are from human source, they must be treated as potentially infectious and contaminated biological specimens. Universal precautions must be maintained. The cells should be handled in a Class I or Class II biological safety cabinet.

E) Steady-Glo Luciferase Assay Substrate

1) Dithiothreitol

This information is based on data on pure Dithiothreitol. At the supplied concentration (50-75 %), the toxicological information has not been established.

LD50 Rat
Oral: 400 mg/kg

May cause skin irritation

Will cause eye irritation

2) Sodium Dithionite

This information is based on data on pure Sodium Dithionite. At the supplied concentration (1-5 %), the toxicological information has not been established.

LD50: Not available

May cause skin irritation, eye irritation. Sodium Dithionite is an irritant to the mucous membrane and respiratory tract.

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
- For the supplied concentrations, volume and weight of the components, 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. For information on Hazard Symbol and EC number, refer to section 2.



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Risk Phrases:

- 7 May cause fire
- 22 Harmful if swallowed
- 31 Contact with acids liberates toxic gas
- 36, 37, 38 Irritating to eyes, respiratory and skin

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: Sodium Dithionite: Fire, reactive; Dimethylsulfoxide: Fire

SARA 311/312 MSDS distribution-chemical inventory-hazard identification: Dithiothreitol, Sodium dithionite

TSCA 8 (b) inventory: Dithiothreitol, Sodium Dithionite, Dimethylsulfoxide

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)

VCI WGK: WGK1

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.