



**Section 1: Product and Company Identification**

Product Name: Antibodies and Interferon Products

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Manufacturer: PBL Biomedical Laboratories  
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This MSDS is applicable to the following products in accordance with OSHA CFR 29 1910.1200 and includes products exempt from requiring MSDS for informational purposes.

Product No.	Product Name	Composition
11002	Human Interferon Alpha Sampler Set (12 individual species)	< 1% Bovine Serum Albumin (BSA)
11100	Human Interferon Alpha A (Alpha 2a)	< 1% BSA
11101	Human Interferon Alpha A (Alpha 2a), carrier- free	None
11105	Human Interferon Alpha 2 (Alpha 2b)	<1 % BSA
11115	Human Interferon Alpha B2 (Alpha 8)	< 1% BSA
11120	Human Interferon Alpha C (Alpha 10)	< 1% BSA
11125	Human Interferon Alpha D (Alpha 1)	< 1% BSA
11130	Human Interferon Alpha F (Alpha 21)	< 1% BSA
11135	Human Interferon Alpha G (Alpha 5)	< 1% BSA
11145	Human Interferon Alpha H2 (Alpha 14)	< 1% BSA
11150	Human Interferon Alpha I (Alpha 17)	< 1% BSA
11160	Human Interferon Alpha J1 (Alpha 7)	< 1% BSA
11165	Human Interferon Alpha K (Alpha 6)	< 1% BSA
11175	Human Interferon Alpha 1 (Alpha D)	< 1% BSA
11177	Human Interferon Alpha 4a (Alpha M1)	< 1% BSA



## pbl assay science

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11180	Human Interferon Alpha 4b (Alpha 4)	< 1% BSA
11190	Human Interferon Alpha WA (Alpha 16)	< 1% BSA
11200	Universal Type I Interferon	< 1% BSA
11350	Human Leukocyte Interferon	None
11395	Human Interferon Omega	m2% BSA
11410	Human Interferon Beta 1a, mammalian	None
11415	Human Interferon Beta 1a, mammalian	<1% w/v Sodium Acetate, < 1% BSA
11420	Human Interferon Beta 1b, <i>E. coli</i>	< 1% BSA
11500	Human Interferon Gamma	< 1% BSA
11720	Human Interleukin-28A/Interferon Lambda 2, Human Cell Expressed	< 1% BSA
11725	Human Interleukin-29/Interferon Lambda 1, Human Cell Expressed	< 1% BSA
11730	Human Interleukin-28B/Interferon Lambda 3, Human Cell Expressed	< 1% BSA
11810	Human Interleukin-2	< 1% BSA
11815	Human Interleukin-3 (Multi-Colony Stimulating Factor)	< 1% BSA
11820	Human Interleukin-28A/Interferon Lambda 2	< 1% BSA
11821	Human Interleukin-28A/Interferon Lambda 2, carrier-free	None
11825	Human Interleukin-29/Interferon Lambda 1	< 1% BSA
11826	Human Interleukin-29/Interferon Lambda 1, carrier-free	None
11965	Human Erythropoietin (EPO), ultrapure	< 1% BSA
12100	Mouse Interferon Alpha A	< 1% BSA
12105	Mouse Interferon Alpha 1	< 1% BSA



12115	Mouse Interferon Alpha 4, mammalian	< 1% BSA
12125	Mouse Interferon Alpha 11	< 1% BSA
12130	Mouse Interferon Alpha 13	< 1% BSA
12295	Mouse Limitin	< 1%BSA
12400	Mouse Interferon Beta	< 1% BSA
12401	Mouse Interferon Beta, carrier-free	None
12405	Mouse Interferon Beta, mammalian	< 1% BSA
12410	Mouse Interferon Beta, mammalian, carrier-free	None
12820	Mouse Interleukin-28B/Interferon Lambda 3	< 1% BSA
12821	Mouse Interleukin-28B/Interferon Lambda 3, carrier-free	None
13100	Rat Interferon Alpha	< 1% Rat Serum Albumin (RSA)
13400	Rat Interferon Beta	None
13500	Rat Interferon Gamma	< 1% BSA
14110	Rhesus/Cynomolgus Interferon Alpha 2	< 1% BSA
15100	Feline Interferon Alpha	< 1% BSA
16105	Cynomolgus Interferon Alpha 2 (Ile 16), mammalian	< 1% BSA
17105	Porcine Interferon Alpha	<1 %BSA
19615	Bovine Interferon Tau 2B	< 1% BSA
21100	Anti-Human Interferon Alpha, Clone MMHA-2 (MAb)	< 1% BSA
21101	Anti-Human Interferon Alpha, Clone MMHA-3 (MAb)	< 1% BSA
21105	Anti-Human Interferon Alpha, Clone MMHA-1 (MAb)	< 1% BSA



21110	Anti-Human Interferon Alpha, Clone MMHA-8 (MAb)	< 1% BSA
21112	Anti-Human Interferon Alpha, Clone MMHA-11 (MAb)	< 1% BSA
21112-3	FITC Conjugated Anti-Human Interferon Alpha, Clone MMHA-11 (MAb)	< 1% BSA, 0.05 % Kathon CG/ICP
21116	Anti-Human Interferon Alpha, Clone MMHA-13 (MAb)	< 1% BSA
21118	Anti-Human Interferon Alpha, Clone MMHA-17 (MAb)	< 1% BSA
21125	Anti-Human Interferon Alpha, Clone MMHA-6 (MAb)	< 1% BSA
21127	Anti-Human Interferon Alpha, Clone MMHA-9 (MAb)	< 1% BSA
21129	Anti-Human Interferon Alpha, Clone MMHA-14 (MAb)	< 1% BSA
21370	Mouse Monoclonal Antibody against Human Interferon Alpha/Beta Receptor 1, Clone MMHAR-3	None
21370-3	R-Phycoerythrin (PE) Conjugated Mouse Monoclonal Antibody against Human IFN Alpha/Beta Receptor 1, Clone MMHAR-3 (MAb)	1.5% BSA, 0.1 % Kathon CG/ICP
21375	Anti-Human Interferon Alpha/Beta Receptor 1, Clone MMHAR-1 (MAb)	None
21375-3	PE Conjugated Anti-Human Interferon Alpha/Beta Receptor 1, Clone MMHAR-1 (MAb)	0.5% BSA, 0.1% Sodium Azide
21376-3	CFS Conjugated Anti-Human Interferon Alpha/Beta Receptor 1, Clone MMHAR-2 (MAb)	<1% BSA, 0.1% Sodium Azide
21385	Anti-Human Interferon Alpha/Beta Receptor Chain 2, Clone MMHAR-2 (MAb)	< 1% BSA
21385-3	PE Conjugated Anti-Human Interferon Alpha/Beta Receptor Chain 2, Clone MMHAR-2 (MAb)	1.5% BSA, 0.1 % Kathon CG/ICP
21395	Anti-Human Interferon Omega, Clone OMG-4 (MAb)	None
21400	Anti-Human Interferon Beta, Clone MMHB-3 (MAb)	< 1% BSA
21400-3	FITC Conjugated Anti-Human Interferon Beta, Clone MMHB-3 (MAb)	< 1% BSA, 0.05 % Kathon CG/ICP
21405	Anti-Human Interferon Beta, Clone MMHB-1 (MAb)	< 1% BSA
21410	Anti-Human Interferon Beta, Clone MMHB-2 (MAb)	None
21450	Anti-Human Interferon Beta, Clone MMHB-12 (MAb)	< 1% BSA



21455	Anti-Human Interferon Beta, Clone MMHB-13 (MAb)	< 1% BSA
21460	Anti-Human Interferon Beta, Clone MMHB-14 (MAb)	< 1% BSA
21465	Anti-Human Interferon Beta, Clone MMHB-15 (MAb)	< 1% BSA
21470	Anti-Human Interferon Beta, Clone MMHB-16 (MAb)	< 1% BSA
21500	Anti-Human Interferon Gamma, Clone MMHG-1 (MAb)	< 1% BSA
21550	Anti-Human Interferon Gamma, Clone MMHG-2 (MAb)	< 1% BSA
21585	Anti-Human Interferon Gamma Receptor Chain 2, Clone MMHGR-2 (MAb)	< 1% BSA
21900	Anti-Human ISG15 (MAb)	None
22100	Anti-Mouse Interferon Alpha, Clone RMMA-1 (MAb)	None
22100-3	FITC Conjugated Anti-Mouse Interferon Alpha, Clone RMMA-1 (MAb)	< 1% BSA, 0.05 % Kathon CG/ICP
22400	Anti-Mouse Interferon Beta, Clone RMMB-1 (MAb)	< 1% BSA
22400-3	FITC Conjugated Anti-Mouse Interferon Beta, Clone RMMB-1 (MAb)	< 1% BSA, 0.05 % Kathon CG/ICP
22500	Anti-Mouse Interferon Gamma, Clone RMMG-1 (MAb)	< 1% BSA
23500	Anti-Rat Interferon Gamma, Clone DB-1 (MAb)	None
23510	Anti-Rat Interferon Gamma, Clone DB-13 (MAb)	None
23515	Anti-Rat Interferon Gamma, Clone DB-14 (MAb)	None
23520	Anti-Rat Interferon Gamma, Clone DB-10 (MAb)	None
27100	Anti-Pig Interferon Alpha, Clone K9 (MAb)	None
27105	Anti-Pig Interferon Alpha, Clone F17 (MAb)	None
31100	Anti-Human Interferon Alpha, Sheep Serum (PAb)	Neat Serum or Serum diluted in phosphate- buffered saline (PBS)
31101	Anti-Human Interferon Alpha, Rabbit Serum (PAb)	Neat Serum or Serum diluted in PBS



31130	Anti-Human Interferon Alpha, Rabbit Serum (PAb)	Neat Serum or Serum diluted in PBS
31375-3	Biotinylated Goat Anti-Human Interferon Alpha/Beta Receptor 1 (PAb)	None
31400	Anti-Human Interferon Beta, Sheep Serum (PAb)	Neat Serum or Serum diluted in PBS
31401	Anti-Human Interferon Beta, Sheep Serum (PAb)	Neat Serum or Serum diluted in PBS
31405	Anti-Human Interferon Beta, Rabbit IgG, protein A purified (PAb)	None
31410	Anti-Human Interferon Beta, Rabbit Serum (PAb)	Neat Serum or Serum diluted in PBS
31420	Anti-Human Interferon Beat, Goat IgG, Affinity Purified (PAb)	None
31420-3	Biotinylated Goat Anti-Human Interferon Beta (PAb)	None
31500	Anti-Human Interferon Gamma, Rabbit Serum (PAb)	Neat Serum or Serum diluted in PBS
32100	Anti-Mouse Interferon Alpha, Rabbit Serum (PAb)	Neat Serum or Serum diluted in PBS
32120	Anti-Mouse Interferon Alpha, Chicken IgY, Purified (PAb)	< 1% BSA
32400	Anti-Mouse Interferon Beta, Rabbit Serum (PAb)	Neat Serum or Serum diluted in PBS
32401	Anti-Mouse Interferon Beta, Rabbit IgG, Protein A purified (PAb)	None
32500	Anti-Mouse Interferon Gamma, Rabbit Serum (PAb)	Neat Serum or Serum diluted in PBS
33100	Anti-Rat Interferon Alpha, Rabbit IgG, Protein A purified (PAb)	None
33400	Anti-Rat Interferon Beta, Rabbit IgG, Protein A purified (PAb)	None
33500	Anti-Rat Interferon Gamma, Rabbit IgG, Protein A purified (PAb)	None
33505	Anti-Rat Interferon Gamma, Rabbit IgG, ligand purified (PAb)	None

**Discontinued Products:**

11450	Human Interferon Kappa	None
16100	Cynomolgus Interferon Alpha 2 (Ile 16)	< 1% BSA



21501-3	MAB to Hu-Interferon-Gamma FITC labeled, Mouse IgG1	<1% BSA, 0.05% Kathon CG/ICP
33405	PAb to Rat Interferon Beta, Rabbit IgG, ligand purified, neutralizing	None

## Section 2: Composition / Information on Ingredient

### 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) Bovine Serum Albumin (BSA) and Rat Serum Albumin (RSA)

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

### 3) Neat Serum and IgG

- CAS Number: N/A
- EC Number: N/A
- R-phrase: No information required.
- Note: The serum derived products, to the best of the supplier's knowledge, were collected from animals that did not show signs of List A\* (OIE) diseases and were not vaccinated against the diseases of List A (OIE). [www.oie.int/eng/maladies/en\\_classification.htm](http://www.oie.int/eng/maladies/en_classification.htm)
- The animals were tested negative for specific pathogens prior to bleed.

### 4) Sodium Acetate

- CAS Number: 127-09-3
- EC Number: 204-823-8
- R-phrase: Not available

### 5) Sodium Azide

- Molecular formula: NaN<sub>3</sub>
- CAS Number: 26628-22-8
- EC Number: 247-852-1
- Symbol: T+, N
- R-phrase: R28, R32, R50, R53

## Section 3: Hazards Identification

### Emergency Overview



1) Kathon CG/ICP

**Note: The following information pertains to pure Kathon CG/ICP. Information on toxicity at the supplied concentration of Kathon CG/ICP (< 0.2 % v/v) is unavailable.**

- Corrosive
- Skin sensitizer
- May cause burns

2) BSA and RSA

- Mild irritants to the mucous membrane, and respiratory tract
- BSA can cause allergic reactions to users with an allergy to dairy products.

3) Neat Serum and IgG

- Universal protection measures are recommended.

4) Sodium Acetate

**Note: The following information pertains to pure Sodium Acetate anhydrous. Information on toxicity at the supplied concentration of Sodium Acetate (< 1 % w/v) is unavailable.**

- Causes irritation to eyes, skin, and GI tract (large amounts)

5) Sodium Azide:

Note: The following information pertains to pure Sodium Azide in powder form.

- Very toxic by inhalation, in contact with skin and if swallowed. Can be fatal.
- Readily absorbed through skin
- Reacts with lead and copper to form highly explosive metal azides
- Heating causes explosion
- Very toxic to aquatic organisms, can cause long term adverse effects to aquatic environment

## 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.
- *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:** Sodium Azide: Pure Sodium Azide (not at the supplied concentration) explodes upon decomposition producing Nitrogen gas and Sodium oxide

## 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 contact with skin and eyes, and avoid ingestion.
- **Storage:** Refer to the storage temperatures indicated in the protocol. It is recommended to use original containers for storage.
- **Intended Use:** Refer to the protocol supplied for proper use. If questions arise please contact [info@pblsaysci.com](mailto:info@pblsaysci.com)
- **Packaging materials:** Use original containers.

## Section 8: Exposure Controls/Personal Protection

- Engineering Controls
  - Safety Shower and Eye Wash
- Personal Protective Equipment
  - Body: Lab Coat
  - Hands: Gloves
  - Eyes: Safety Glasses (recommended)
  - NIOSH approved respirator for pure Sodium Azide in powder form. Respirator not required for handling product 21376.
- Exposure Limits:
  - 1) Kathon CG/ICP
    - OSHA PEL- Not Established
    - ACGIH TLV- Not Established
  - 2) BSA and RSA
    - OSHA PEL- Not Established
    - ACGIH TLV- Not Established



- 3) Neat Serum and IgG  
OSHA PEL- Not Established  
ACGIH TLV- Not Established
- 4) Sodium Acetate  
OSHA PEL- None listed  
ACGIH TLV- None listed
- 5) Sodium Azide (powder form)  
OSHA PEL: 0.1 PPM for HN3  
ACGIH TLV- 0.1 PPM for HN3

### Section 9: Physical and Chemical Properties

- Physical State and Appearance: May be frozen or in liquid state depending on storage conditions.
- Dispersion properties: Not available
- Solubility: Not applicable
- Odor: Odorless
- Taste: Not available
- Color: Colorless. The color may change with change in pH. Neat serum may have a brownish tinge.

### Section 10: Stability and Reactivity

- Stability and Reactivity: The product is stable.
- Conditions to Avoid: Extreme temperatures.
- Materials to Avoid: None. Sodium Acetate is incompatible with strong oxidizing agents.
- Hazardous Decomposition Products: BSA: Toxic Fumes, Sodium Acetate: Carbon monoxide, carbon dioxide, toxic fumes of sodium oxide, Pure Sodium Azide: Nitrogen gas and Sodium oxide
- 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 of Kathon CG/ICP (< 0.2 % 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] BSA and RSA  
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.**

3] Neat Serum and IgG  
Not Applicable. It is recommended to observe universal precautions while handling serum based products.

4] Sodium Acetate  
**This information is based on data on pure Sodium Acetate anhydrous. At the supplied concentration of Sodium Acetate (< 1 % w/v), the toxicological information has not been established.**

LD50:	Rat	Rabbit	Mouse
Oral:	3530 mg/kg	-----	6891 mg/kg
Skin:	-----	>10 gm/kg	-----

Chronic effects on Humans: None known  
Other toxic effects on Humans: Irritant to eyes, skin, and GI tract (large amounts)  
Special Remarks on Chronic Effects on Humans: Not available  
Special remarks on toxicity to Animals: Not available  
Special Remarks on other Toxic Effects on Humans: Not available

5) Sodium Azide  
**This information is based on data on pure Sodium Azide. At the supplied concentration (< 0.1 % w/v), the toxicological information has not been established. It is recommended that gloves and a lab coat be worn while working with product 21376**

LD50:	Rat	Rabbit
Oral:	27 mg/kg	-----
Skin:	-----	20 mg/kg
Inhalation:	37 mg/m <sup>3</sup>	-----

Chronic effects on Humans: Not a known Carcinogen.  
Other toxic effects on Humans: Irritant if absorbed through skin. May be fatal is inhaled or swallowed.  
Special Remarks on Chronic Effects on Humans: Affects the nerves, heart and brain.  
Special remarks on toxicity to Animals: Tumorigen and Mutagen in rats. Causes hyposensitivity on over exposure

**Section 12: Ecological Information**

- Pure Sodium Azide is highly toxic to aquatic life forms

**Section 13: Disposal Considerations**

- For all materials 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.

### Section 15: Regulatory Information

**Regulatory information on the components at their supplied concentrations is not available. Risk phrases at supplied concentrations are not available. Please refer below for definitions of applicable risk phrases to pure form of hazardous components.**

Risk Phrases:

- 20 Harmful by inhalation
- 21 Harmful in contact with skin
- 22 Harmful if swallowed
- 28 Very toxic if swallowed
- 32 Contact with acids liberates very toxic gas
- 34 Causes burns
- 37 Irritating to the respiratory system
- 43 May cause sensitization by skin contact
- 50 Very toxic to aquatic organisms
- 53 May cause long-term adverse effects in the aquatic environment

#### International regulations:

Japan: Chemical Substances Control Law: Kathon CG/ICP (classification: Existing), Sodium Acetate (classification: Existing); Biodegradation and Bioconcentration of Existing Chemical Substances under the Chemical Substances Control Law: Sodium Acetate (listed); Sodium Azide (Chemical Substances Law classification: Existing type III monitoring, Industrial Safety and Health Act: MSDS required)

Note: Product not classified according to EU regulations. For information on Hazard Symbol and EC number of pure form of hazardous constituents, refer to section 2. Japanese regulations pertain to pure forms of components, and not for forms at the concentrations used in the product(s).

### 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.