Safety Data Sheet

1. Identification of the substance/mixture and of the company/undertaking

Product Name ： EzBradford Protein Assay Kit
Bradford Reagent
Protein Diluent
BSA Standard
BGG Standard

Product Code ： WSE-7510

Company Information

Company Name: ATTO Corporation
Address: 3-2-2 Motoasakusa, Taito-ku, Tokyo 111-0041, Japan
Department: Head Office Customer Department
Telephone Number: 03-5827-4861
Fax Number: 03-5827-6647
Emergency Contact: 03-5827-4871
Intended Use: For laboratory and research purposes

2. Hazards identification

Protein Diluent: Not classified according to GHS criteria
BSA Standard: Not classified according to GHS criteria
BGG Standard: Not classified according to GHS criteria

Bradford Reagent

GHS Classification:

Hazardous to Health
Skin Corrosion/Irritation Category 1
Serious Eye Damage/Eye Irritation Category 1
Reproductive Toxicity Category 1B
Specific Target Organ Toxicity (Single Exposure) (Central Nervous System) Category 2
Specific Target Organ Toxicity (Single Exposure) (Visual Organ) Category 2
Specific Target Organ Toxicity (Single Exposure) (Respiratory System) Category 2
Specific Target Organ Toxicity (Single Exposure) (Systemic Toxicity) Category 2

Specific Target Organ Toxicity (Repeated Exposure) (Central Nervous System) Category 2

Specific Target Organ Toxicity (Repeated Exposure) (Visual Organ) Category 2

Label:

Signal Word: Danger

Hazard Information:

H360 May cause harm to fertility or the unborn child

H371 May cause damage to the central nervous system, vision, respiratory system, and general systemic toxicity

H373 May cause damage to the central nervous system and vision through prolonged or repeated exposure

Precautions:

Safety Measures

- Obtain special instructions before use.
- Do not breathe dust/fume/gas/mist/vapors/spray.
- Wash face, hands, and any exposed skin thoroughly after handling.
- Wear protective gloves/protective clothing/eye protection/face protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. Immediately call a doctor.

First-Aid Measures:

- IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
- IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
- IF EXPOSED or CONCERNED: Get medical advice/attention.
- Call a doctor immediately.

Storage:

- Store locked up.

Disposal:

- Dispose of contents/container in accordance with local/regional/national/international regulations.

3. Composition/information on ingredients

Classification of the product: Mixture

Bradford Reagent			
Component	Content(%)	Chemical formula	CAS No.
Phosphoric acid	10%>	H3PO4	7664-38-2
1-Hydroxyethane-1,1-diphosphonic Acid	5%>	CH3C[PO(OH)2]2OH	2809-21-4
Methanol	5%>	C16H20N2	67-56-1
Protein Diluent			
Component	Content(%)	Chemical formula	CAS No.
-	-	-	-
BSA Standard			
Component	Content(%)	Chemical formula	CAS No.
-	-	-	-
BGG Standard			
Component	Content(%)	Chemical formula	CAS No.
-	-	-	-

4. First Aid Measures

If inhaled: Move to a place with fresh air, keep warm and at rest, and ensure thorough gargling. Seek medical attention.

If skin contact: Wash with plenty of water and soap. If inflammation occurs, seek medical treatment.

If eye contact: Immediately flush with plenty of clean water for at least 15 minutes. Seek immediate medical attention.

If swallowed: Induce vomiting with plenty of water and seek immediate medical attention.

5. Firefighting measures

Flammability: Possibility of ignition.

Extinguishing media: Use a method of extinguishing suitable for the local situation and the surrounding environment.

Specific hazards arising from the fire: Thermal decomposition can release irritating and toxic gases and vapors.

Special firefighting procedures: No available information.

Protection of fire-fighters: Wear personal protective equipment. Firefighters must wear self-contained breathing apparatus and full protective gear.

6. Accidental release measures

Precautions for human body, protective gear, and emergency procedures:

Indoors: Ventilate sufficiently until cleanup is complete. Prohibit entry by non-essential personnel by cordoning off the area around the leak. Wear appropriate protective gear during work to prevent skin contact with splashes and inhalation of dust and gas. Work upwind and evacuate downwind personnel.

Environmental precautions:

Take care not to discharge the leaked product into rivers, etc., to prevent environmental impact. Ensure contaminated waste is treated properly to prevent environmental discharge. Clean contaminated objects and areas in accordance with environmental regulations.

Recovery and neutralization:

Prohibit open flames, and absorb with vermiculite or similar material, then collect in an empty container, and wash the area with plenty of water afterwards. Always wear protective gear during work.

7. Handling and Storage

Handling

Technical measures:

Avoid contact with alkaline substances. Use local exhaust ventilation.

Precautions:

Do not mishandle containers by dropping, impacting, or dragging. Prevent leaks, spills, and dispersion, and do not unnecessarily generate vapor or mist. Seal the container after use. After handling, wash hands, face, etc., thoroughly and gargle. Do not eat or smoke outside designated areas. Do not bring gloves or other contaminated protective gear into rest areas.

Safety precautions:

Avoid contact with skin, eyes, and clothing. Wear personal protective equipment.

Storage

Appropriate storage conditions: Avoid direct sunlight and store tightly closed in a

refrigerator (2-10° C).

Safe container packaging materials:	Polyethylene
Substances to avoid:	Alkaline substances

8. Exposure Controls and Personal Protection

Facility Measures:

For indoor use, enclose the source of emissions or install local exhaust ventilation. Provide safety showers and hand/face washing facilities near the handling area and clearly mark their locations.

Exposure limit guidelines:

Phosphoric acid

Japan	OEL-M: 1mg/m3
ACGIH TLV	TWA: 1 mg/m3, STEL: 3 mg/m3

Methanol

Japan	ACL: 200 ppm, OEL-M: 200 ppm 260mg/m3
ACGIH TLV	TWA: 200 ppm, STEL: 250 ppm

Personal protective equipment:

Respiratory protection:	Protective mask
Hand protection:	Impervious gloves
Eye protection:	Safety glasses
Skin and body protection:	Protective boots, protective clothing

9. Physical and Chemical Properties

Bradford Reagent

Physical state:	Liquid
Color:	Brown
Odor:	None
pH:	1-3

Specific temperatures/temperature ranges at which physical state changes:

Boiling point:	Not available
Boiling range:	Not available
Melting point:	Not available
Flash point:	None
Autoignition point:	Not available

Explosive properties: None
Vapor pressure: Not available
Vapor density: Not available
Density: Not available
Solubility: Not available
Octanol/water partition coefficient: Not available
Other data: None

Protein Diluent

Physical state: Liquid
Color: Transparent
Odor: None
pH: None
Specific temperatures/temperature ranges at which physical state changes:
Boiling point: Not available
Boiling range: Not available
Melting point: Not available
Flash point: None
Autoignition point: Not available
Explosive properties: None
Vapor pressure: Not available
Vapor density: Not available
Density: Not available
Solubility: Not available
Octanol/water partition coefficient: Not available
Other data: None

BSA Standard

Physical state: Liquid
Color: Transparent
Odor: None
pH: None
Specific temperatures/temperature ranges at which physical state changes:
Boiling point: Not available
Boiling range: Not available
Melting point: Not available
Flash point: None

Autoignition point: Not available
Explosive properties: None
Vapor pressure: Not available
Vapor density: Not available
Density: Not available
Solubility: Not available
Octanol/water partition coefficient: Not available
Other data: None

BGG Standard

Physical state: Liquid
Color: Transparent
Odor: None
pH: None
Specific temperatures/temperature ranges at which physical state changes:
Boiling point: Not available
Boiling range: Not available
Melting point: Not available
Flash point: None
Autoignition point: Not available
Explosive properties: None
Vapor pressure: Not available
Vapor density: Not available
Density: Not available
Solubility: Not available
Octanol/water partition coefficient: Not available
Other data: None

10. Stability and Reactivity

Bradford Reagent

Stability: Stable under normal handling conditions.
Reactivity: No particularly dangerous reactivity at room temperature.
Conditions to avoid: Sunlight, heat, alkaline substances.
Hazardous decomposition products: Phosphorus oxides.

11. Toxicological Information

Bradford Reagent

Acute toxicity: No data available.

Local effects: No data available.

Components of Bradford Reagent

Chemical Name

Methanol

LD50 (oral, rat/mouse)	6200 mg/kg (Rat)
LD50 (dermal, rat/rabbit)	No data available
LC50 (inhalation, rat/mouse)	64000ppm(Rat) 22500ppm(Rat)

Phosphoric acid

LD50 (oral, rat/mouse)	1530 mg/kg (Rat)
LD50 (dermal, rat/rabbit)	No data available
LC50 (inhalation, rat/mouse)	>850mg/m^3(Rat)

12. Ecological information

Mobility:	Data not available
Persistence/Degradability:	Data not available
Bioaccumulation:	Data not available
Ecotoxicity:	Data not available
Environmental Standards:	Data not available

Bradford Reagent

Components

Phosphoric Acid

Ecotoxicity - Acute aquatic toxicity: Cannot be classified due to insufficient data

Ecotoxicity - Long-term aquatic toxicity: Cannot be classified due to insufficient data

Ozone layer toxicity: The substance is not listed in the annexes of the Montreal Protocol.

Methanol

Acute aquatic toxicity: Classified as not hazardous based on a 96-hour LC50 = 15400mg/L for fish (Bluegill) (EHC 196, 1998), and a 96-hour LC50 = 1340mg/L for crustaceans (Brown shrimp) (EHC 196, 1998).

Chronic aquatic toxicity: Classified as not hazardous due to being readily soluble (water

solubility = 1.00×106mg/L (PHYSPROP Database, 2005)) and low acute toxicity.

13. Disposal Considerations

Residual waste: Entrust to a professional waste disposal operator authorized by the prefectural governor.

Contaminated containers/packaging: Wash thoroughly with copious amounts of water and dispose of according to the type of container.

14. Transport Information

IATA / TDG / DOT / IMDG

UN-No	UN1805
Proper Shipping Name	PHOSPHORIC ACID SOLUTION
Hazard Class	8
Packing Group	III

Environmental Hazards	Not Applicable
Special precautions for user	Not Applicable

15. Regulatory information

Chemical Substances Control Law:

Class I specified chemical substance (Article 2 Paragraph 2 of the Law, Article 1 of the Enforcement Order) (Cabinet Order No. 1-207) No.708 (1-Hydroxyethane-1,1-bis(phosphonic acid) solution)

Industrial Safety and Health Law:

Dangerous and harmful substances to be labeled (Article 57 of the Law, Article 18 of the Enforcement Order) Substances to be notified (Article 57-2 of the Law, Article 18-2 of the Enforcement Order, Appendix 9) No.618 (Phosphoric acid) No. 560 (Methanol)

Poisonous and Deleterious Substances Control Law: Not applicable

Chemical Examination Law: 1-422 (Phosphoric acid), 2-2936 & 2-4162 (1-Hydroxyethane-1,1-bis(phosphonic acid) solution), 2-201 (Methanol)

Fire Service Law: Not applicable

Aviation Law: Not applicable

Other Laws: Not applicable

16. Other Information

This Safety Data Sheet (SDS) is prepared based on the latest materials and data available at the current time and may be revised with new findings. The precautions mentioned in the SDS are intended for normal handling. If the product user conducts special handling, please implement safety measures suitable for the application and usage method.
Moreover, while we exercise due care regarding the content mentioned in the SDS, we do not guarantee its content.