

PRODUCT AND COMPANY INFORMATION

- ◆ **Product name:** Bradford - Protein Assay Kit
- ◆ **Catalog number:** BA00100
- ◆ **Chemical name or synonyms:** none
- ◆ **Kit contains:**
 - **1X Bradford reagent** – reagent containing water, orthophosphoric acid (10-15 %) and methanol (5 %) – 500 mL (catalog number BA00050)
 - **Standards of Bovine Serum Albumin** – Bovine serum albumin in solution with 0.9% NaCl and 0.05 % sodium azide. 2 sets of 7 vials containing 2 mL each. (catalog number BA00070)
- ◆ **Kit Applications:** Laboratory chemicals for research used only
- ◆ **Manufacturer:**
OZ Biosciences
Parc Scientifique de Luminy, BP 13
13273 Marseille cedex 9 - France
- ◆ **Contact:**
OZ Biosciences
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Phone: +33 (0)4.91.82.81.72 / Fax: +33 (0)4.91.82.81.70 / www.ozbiosciences.com / contact@ozbiosciences.com
- ◆ **Information department:** Technical service; customer support

HAZARDOUS INGREDIENTS

Composition: Mixture of substances listed below with non-hazardous additions:

List of components:

- Water (CAS: 7732-18-5, EINECS: 231-791-2, RTECS: ZC 0110000), >80%
- Orthophosphoric acid (CAS: 7664-38-2, EINECS: 231-633-2, RTECS: TB 6300000), C; R 22/34/37/38/41 10-15%
- Methanol (CAS: 67-56-1, EINECS: 200-659-6, RTECS: PC 1400000), T, F; R 11-23/24/25-39/23/24/25, 5%
- Bovine serum albumin, (CAS 7732-18-5, EINECS: 231-791-2)

Components with very limit values (traces) that require monitoring at the workplace:

- Sodium chloride, (CAS 7647-14-5, EINECS : 231-598-3), 0.9%
- Sodium azide, (CAS 26628-22-8, EINECS : 247-852-1), 0.05%

This product contains hazardous ingredients (yes; no; n/a; n/i): yes
This product contains hazardous carcinogens (y; n; n/a; n/i): no

HEALTH HAZARD DATA

- ◆ **Health Effects (acute and chronic):**
Contain orthophosphoric acid (CAS: 7664-38-2) and methanol (CAS: 67-56-1).
Toxic if swallow or inhale. Risk of damage to eyes. Fumes may cause eyes irritation. May cause severe skin and respiratory tract irritation. The symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. **EXERCISE CAUTION AT ALL TIMES.**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
Irritant To Skin
X_n Harmful
- ◆ **Primary Routes of Entry:**
Inhalation and ingestion
Eye contact from splashes possible
Readily absorbed through the skin.
- ◆ **Medical Conditions Aggravated by Exposure:**
Not known

- ◆ **Emergency First Aid Procedures:**
 - **Eye contact** – Flush contaminated eye(s) with large volumes of water for at least 15 minutes. Get medical attention if eye(s) remain irritated.
 - **Skin contact** – Flush contaminated areas with large volumes of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if skin remains irritated.
 - **Ingestion** – Keep victim warm and calm. Get immediate medical attention.
 - **Inhalation** – Move victim to fresh air. Give oxygen if breathing becomes difficult. Should breathing stop, give artificial respiration.
 - Wash contaminated clothing before reuse.

- ◆ **Classification (Hazard identification):**

R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed

R 68/20/21/22 Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed

S26/36/37/45/60

The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.



- ◆ **NFPA ratings (scale 0-4):**

- *IX Bradford reagent* Health = 2; Fire = 0; Reactivity = 0
- *Standards of Bovine Serum Albumin* Health = 0; Fire = 0; Reactivity = 0

- ◆ **OSHA hazard ratings**

Moderate hazard

PHYSICAL AND CHEMICAL PROPERTIES

- ◆ **Physical state and appearance:**

- *IX Bradford reagent* liquid, color brown, order recognizable
- *Standards of Bovine Serum Albumin* liquid, colorless and odorless

- ◆ **Melting point:**

- *IX Bradford reagent* undetermined
- *Standards of Bovine Serum Albumin* 0°C

- ◆ **Boiling Point:**

- *IX Bradford reagent* 64 °C
- *Standards of Bovine Serum Albumin* undetermined

- ◆ **Flash point:** not applicable

- ◆ **Ignition temperature:** 455°C

- ◆ **Auto igniting:** Product is not self-igniting

- ◆ **Vapor Pressure at 20 °C:** 23.0 hPa

- ◆ **Vapor density:** Not determined

- ◆ **Density at 20°C:** Standards of Bovine Serum Albumin 1 g/cm³

- ◆ **pH-value at 20°C:** 6.9, Standards of Bovine Serum Albumin

- ◆ **Solubility in Water:**

- *IX Bradford reagent* fully miscible
- *Standards of Bovine Serum Albumin* Soluble

- ◆ **Specific Gravity (water = 1):** ~1

- ◆ **Danger of explosion:** Products does not present an explosion hazard

- ◆ **Percent volatile by volume (%):** N/A

- ◆ **Evaporation Rate:** 0.36 (compared to butyl acetate)

- ◆ **Solvent contents:**

- *IX Bradford reagent* Organic solvents 5%, water 85%
- *Standards of Bovine Serum Albumin* Organic solvents 0%, water 98.9%

PHYSICAL HAZARD DATA

◆ **Special Fire Fighting Procedures:**

Wear self-contaminated breathing apparatus and protective garments. If possible have this product removed from fire scene. CO2 extinguishing powder or water spray.

◆ **Unusual Fire and Explosion Hazards:** Product does not present an explosion hazard

REACTIVITY DATA

◆ **Incompatibility (material to avoid):**

Reactive with organic materials

◆ **Hazardous Decomposition Products:**

Not applicable

◆ **Will Hazardous Polymerization Occur:**

Will not occur

◆ **Is the product stable:**

Yes, under normal handling and storage conditions.

◆ **Condition to avoid/stability:**

Excess heat, flame or pressure.

◆ **Handling and storage:**

- *Information for safe handling:* Ensure good ventilation/exhaustion at the workplace. No special precautions are necessary if used correctly.
- *Information about protection against explosions and fires:* No special measures required.
- *Requirements to be met by storerooms and receptacles:* No special requirements.
- *Information about storage in one common storage facility:* Not required.
- *Further information about storage conditions:* Keep receptacle tightly sealed.

◆ **Stability and reactivity:**

- *Thermal decomposition / conditions to be avoided:* No decomposition if used according to specifications.
 - *Dangerous reactions* No dangerous reactions known
 - *Dangerous products of decomposition:* No dangerous decomposition products known
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SPILL AND LEAK PROCEDURES

◆ **Steps to be taken in Case Material is Released or Spilled:**

Ventilate the area. Initiate cleaning up immediately. If the product is dry, mop up. If the product is a solution, use an absorbent material to contain/pick up the spilled solution. Once spent, place all the contaminated disposables into a suitable container, seal, label and dispose.

◆ **Waste Disposal Method:**

Dispose in accordance with governmental environmental regulations. Must not be disposed of together with household garbage. Do not allow product to reach sewage system. Hand over to hazardous waste disposers.

◆ **Measure for environmental protection:**

Dilute with plenty of water. Do not allow to enter sewers/ surface or ground water

EXPOSURE CONTROL INFORMATION

◆ **Ventilation Data:**

Provide adequate general exhaust ventilation.

◆ **Respiratory Protection:**

None required if ventilation is adequate.

◆ **Protective Gloves:**

Rubber or chemical resistant gloves should be worn.

◆ **Other Protective Equipment:**

Safety glasses with side shields are advised. Eye wash stations and deluge showers should also be available. Finally, a lab coat should be worn.

◆ **Other Engineering Controls:**

None

◆ **Work Practices:**

Good laboratory technique should be used when handling this product. Do not mouth pipette. Observe appropriate chemical hygiene. Avoid contact with skin or eyes.

◆ **Hygienic Practices:**

Do not eat, drink, or smoke while working with reagents. Upon completion of work activities involving this product, wash any exposed body areas thoroughly with soap and water.

Components with limit values that require monitoring at the workplace:

7664-38-2 phosphoric acid	
PEL	1 mg/m ³
REL	Short-term value: 3 mg/m ³ Long-term value: 1 mg/m ³
TLV	Short-term value: 3 mg/m ³ Long-term value: 1 mg/m ³
67-56-1 methanol	
PEL	260 mg/m ³ , 200 ppm ³
REL	Short-term value: 325 mg/m ³ , 250 ppm Long-term value: 260 mg/m ³ , 200 ppm Skin
TLV	Short-term value: 328 mg/m ³ , 250 ppm Long-term value: 262 mg/m ³ , 200 ppm Skin; BEI
26628-22-8 sodium azide	
REL	Short-term value: C 0.3** mg/m ³ , C 0.1* ppm *as HN ₃ vapor; **as NaN ₃
TLV	Short-term value: C 0.29** mg/m ³ , C 0.11* ppm *as HN ₃ vapor; **as NaN ₃

General protective and hygienic measures

Keep away from foodstuffs, beverages and feed. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.

Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Protection of hands: Protective gloves.

Material of gloves Synthetic gloves

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection: Goggles recommended during refilling.

TOXICOLOGICAL INFORMATION

◆ **1X Bradford reagent. Acute toxicity: LD/LC50 values for hazardous components per OSHA criteria:**

67-56-1 methanol		
Oral	LD50	5628 mg/kg (rat)
Dermal	LD50	20000 mg/kg (rat)

Primary irritant effect:

on the skin: No irritant effect.

on the eye: No irritant effect.

Sensitization: No sensitizing effects known.

Additional toxicological information: Harmful

Target organs: Skin, Respiratory tract.

◆ **Standards of Bovine Serum Albumin Acute toxicity:**

Primary irritant effect:

on the skin: No irritant effect.

on the eye: No irritant effect.

Sensitization: No sensitizing effects known.

ENVIRONMENTAL INFORMATION

◆ **1X Bradford reagent. General notes:**

Slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

◆ **Standards of Bovine Serum Albumin. General notes:**

Not known to be hazardous to water.

Contact the supplier for all information regarding the proper transportation method for this material.

◆ **SARA (Superfund Amendments and Reauthorization Act of 1986 - USA)**

Section 302/304 (40CFR355.30 / 40CFR355.40):	<i>None of the ingredients is listed.</i>
Section 313 (40CFR372.65):	<i>67-56-1 methanol</i>
TSCA (Toxic Substances Control Act):	<i>All ingredients are listed.</i>

◆ **Cancerogene categories**

EPA (Environmental Protection Agency)	<i>None of the ingredients is listed.</i>
IARC (International Agency for Research on Cancer)	<i>None of the ingredients is listed.</i>
NTP (National Toxicology Program)	<i>None of the ingredients is listed.</i>
TLV (Threshold Limit Value established by ACGIH)	<i>26628-22-8 sodium azide A4</i>
MAK (German Maximum Workplace Concentration)	<i>None of the ingredients is listed.</i>
NIOSH-Ca (National Institute for Occupational Safety and Health)	<i>None of the ingredients is listed.</i>
OSHA-Ca (Occupational Safety & Health Administration)	<i>None of the ingredients is listed.</i>
TSCA (Toxic Substances Control Act):	<i>All ingredients are listed.</i>

◆ **Markings according to EU guidelines:**

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials

◆ **Code letter and hazard designation of product:**

Xn Harmful

◆ **Hazard-determining components of labelling:**

Methanol

◆ **Risk phrases:**

20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

◆ **Safety phrases:**

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

36/37 Wear suitable protective clothing and gloves.

45 In case of accident or if you feel unwell, seek medical advice immediately.

60 This material and its container must be disposed of as hazardous waste.

◆ **National regulations**

Class 1 - Share in % 2.5-5

◆ **Water hazard class: Slightly hazardous for water.**

◆ **Precaution to be taken in Handling and Storage:**

See package insert for storage information.

◆ **Maintenance Precautions:**

Not applicable

◆ **Other Precautions:**

Not applicable

◆ **General protective and hygienic measure:**

Keep away from foodstuffs, beverages and feed; Wash end before and after use.

Avoid contact with the eyes and skin

◆ **Other Comments:**

N-No, Y-Yes, N/A-Not Applicable, N/I-No Information.

The information provided is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. OZ Biosciences shall not be held liable for any damage resulting from handling or from contact with the product.