

MATERIAL SAFETY DATA SHEET

Flow Buffer

1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Flow buffer
Description: Laboratory Reagent
Product Number: 20161
MSDS Issued: September 13, 2010

Manufacturer: BioNano Genomics
Address: 9640 Towne Centre Drive
San Diego, CA 92121
Telephone: (858) 888-7600

2 COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No.	Percent Composition	Exposure Limit or Threshold Level
Polyvinylpyrrolidone	9003-39-8	10%	N/A
Tris-Borate EDTA buffer (TBE)			
Tris (hydroxymethyl) aminomethane	77-86-1	63.4%	
Boric acid	10043-35-3	32.3%	
Ethylenediaminetetraacetic acid disodium dihydrate	6381-92-6	4.3%	
Tween-20	9005-64-5	6%	N/A

3 HAZARDS IDENTIFICATION

PVP-10: May be harmful if inhaled, may cause respiratory tract irritation. May be harmful if absorbed through skin, may cause skin irritation. May cause eye irritation. May be harmful if swallowed.

TBE: Target organ effect, Irritant, Teratogen, Reproductive hazard. Target organs: Testes.

Tween -20: Causes mild skin irritation.

4 FIRST AID MEASURES

Eye Contact: Immediately flush with large quantities of water for at least fifteen minutes. Causes eye irritation.

Skin Contact: Wash off with soap and plenty of water. May be harmful if absorbed through skin. Causes skin irritation.

Ingestion: Wash out mouth with water if person is conscious. Do not give anything by mouth if victim is unconscious. May be harmful if swallowed.

Inhalation: Move victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. May be harmful if inhaled. Causes respiratory tract irritation. Consult a physician.

5 FIRE FIGHTING MEASURES

Extinguishing Media: Use water spray, alcohol resistant foam, dry chemical or carbon dioxide.

Special Firefighting Procedures: Wear self-contained breathing apparatus and protective clothing. Avoid direct contact with runoff from fire fighting.

Unusual Fire & Explosion Hazards:

6 ACCIDENTAL RELEASE MEASURES

Personal precaution: Avoid dust formation. Avoid breathing dust, vapors or gas. Ensure adequate ventilation. Evacuate person to safe areas.

Environmental precautions: Do not let product enter drains.

Methods for cleaning up: Sweep up and shovel. Pick up and ensure disposal with minimal dust formation. Keep in suitable closed containers for disposal.

7 HANDLING AND STORAGE

Handling: Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Storage: Keep container tightly closed in a dry well ventilated place.

8 EXPOSURE CONTROLS, PERSONAL PROTECTION

Eye Protection: Safety glasses or goggles.
Hand Protection: Latex, nitrile or vinyl gloves.
Respiratory Protection: None, if used according to directions. If concerned use respiratory mask.
Ventilation: Use in a well-ventilated laboratory.
Other Protective Equipment: Lab coat or apron.
Hygiene measures: Avoid contact with Skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Safety shower and eye wash facilities should be made available in laboratory.

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance: PVP-10: Powder/Beige
TBE: Liquid
Tween-20: Viscous liquid.

Odor:
Solubility: Water soluble.

10 STABILITY AND REACTIVITY

Incompatibility: PVP-10, TBE, Tween -20: Strong oxidizing agents.
TBE: Potassium, acid anhydrides.

Stability: PVP-10, TBE : Stable under recommended storage conditions.
Hazardous Polymerization: PVP-10, TBE, Tween-20 : Hazardous decomposition products formed under fire conditions (Carbon oxides, nitrogen oxides)
TBE: Hazardous decomposition products formed under fire, Borane/Boron oxides.
Conditions to Avoid: PVP-10: Fire conditions.

11 TOXICOLOGICAL INFORMATION

PVP-10: Acute toxicity: LD50-Oral-Rat 100,000 mg/Kg. Remarks: Diarrhoea.

Signs and symptoms of exposure:

Unexcreted particles may be phagocytized by cells of the reticuloendothelial system and deposited in storage sites in the liver, spleen, lung, bone marrow resulting in the storage disease thesaurosis. Severity and symptoms depend on the storage site and nature of the particle. Pathological changes are not necessarily attributed to the thesaurosis, but in some cases an inflammation or granulomatoma have occurred.

TBE: Toxicity reported for borates in humans: ingestion or absorption may cause nausea, vomiting, diarrhea, abdominal cramps, and erythematous lesions on the skin and mucous membranes. Other symptoms include respiratory collapse, tachycardia, cyanosis, delirium, convulsions, and coma. Death has been reported to occur in infants from less than 5 grams and in adults from 5 – 20grms. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Tween-20: LD50-Oral-Rat-40,554mg/kg. Skin-Human-Mild skin irritation 3d.

No components greater than 0.1% of this product are listed in IARC and NTP.

To the best of our knowledge, the chemical, physical, and toxicological properties of this product have not been thoroughly investigated.

12 ECOLOGICAL INFORMATION

Tween-20: Toxic to fish. LC50-Other fish- 350mg/l- 24h

Data not yet available.

13 DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: PVP-10, TBE, Tween-20: Observe all federal, state and local environmental conditions.
Contaminated packaging: Dispose off as unused product.

14 TRANSPORTATION INFORMATION

To the best of our knowledge, this product is not regulated as a hazardous material.

15 REGULATORY INFORMATION

OSHA hazards: PVP-10, Tween-20: No OSHA hazards.

TBE: Target Organ Effect, Irritant, Teratogen, Reproductive hazard.

TSCA status: PVP-10: On TSCA inventory.

DSL status: PVP-10, TBE, Tween-20 : All components of this product are on the Canadian DSL list.

SARA 302 components: PVP-10, TBE, Tween-20: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 components: PVP-10, TBE, Tween-20 : This material does not contain any chemical components with known CAS numbers that exceed the threshold(De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards: PVP-10, Tween-20: No SARA hazards.

TBE: Acute health hazard, chronic health hazard.

Massachusetts Right to know components: PVP-10., TBE, Tween-20: No components listed.

Pennsylvania Right to know components: PVP-10: 2-Pyrrolidinone, 1-ethenyl-, homopolymer CAS# 9003-39-8

TBE: Water (CAS# 7732-18-5), Tris(hydroxymethyl) aminomethane(CAS# 77-86-1)
Boric acid (CAS#10043-35-3)

Tween-20: (CAS# 9005-64-5)

New Jersey Right to know components: PVP-10: 2-Pyrrolidinone, 1-ethenyl-, homopolymer CAS# 9003-39-8

TBE: Water (CAS# 7732-18-5), Tris(hydroxymethyl) aminomethane(CAS# 77-86-1)
Boric acid (CAS#10043-35-3)

Tween-20: (CAS# 9005-64-5)

California Prop 65 components: PVP-10, TBE, Tween-20: This product does not contain any components known to the state of California to cause cancer, birth or any other reproductive defects.

16 OTHER INFORMATION

Limitations: The information and recommendations set forth in this MSDS are believed to be correct as of this date. BioNano Genomics makes no warranty with respect to the content of this MSDS and disclaims all liability from reliance thereon.