


SAFETY DATA SHEET

**Lysis and
Binding Buffer
(LBB)**

1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION			
Product Name:	Lysis and Binding Buffer (LBB)	Manufacturer:	Bionano Genomics
Description:	Mixture	Address:	9540 Towne Centre Drive, Ste. 100 San Diego, CA 92121
Product Number:	20375	Telephone:	(858) 888-7600
SDS Issued:	April 17, 2019		

2 HAZARDS IDENTIFICATION	
<p><u>Hazard Class/Category:</u> This product contains a hazardous material under Globally Harmonized System (GHS) classification schemes (29 CFR 1910, 1200 Appendix A and Appendix B; United Nations Globally Harmonized System of Classification and Labelling, Sixth Edition, Chapters 2 and 3). Acute Toxicity 4 (Oral, Inhalation) H302+322, Skin Irritant 2 H315; Eye Irritant 2A H319</p>	
<p><u>Label Elements:</u> Hazard</p>	
<p>Hazard Pictograms:</p>	
	
<p>Signal Word: Warning</p>	
<p>Hazard Statements: H302- Harmful if swallowed, H322 – Harmful if inhaled. H315- Causes skin irritation H319- Causes serious eye irritation</p>	
<p>Precautionary Statements: P264 - Wash hands, forearms, face thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P271 - Use only in a well-ventilated area. P280 - Wear protective gloves/protective clothing/eye protection/face protection. P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P302+P352 - IF ON SKIN: Wash with plenty of soap and water. P332+P313 - If skin irritation occurs: Get medical advice/attention. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 If eye irritation persists: Get medical advice/ attention. P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P330 - If swallowed, rinse mouth.Call a POISON CENTER/doctor if you feel unwell. P362 - Take off contaminated clothing and wash before reuse. P501 - Dispose of contents/container to approved waste facility</p>	

3 COMPOSITION/INFORMATION ON INGREDIENTS		
3.1 Substance: Not applicable		
3.2 Mixture		
Component:	CAS No.:	Percent Composition:
Guanidine hydrochloride	50-01-1	<90%

4 FIRST AID MEASURES	
<u>Eye Contact:</u>	Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
<u>Skin Contact:</u>	Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Consult a doctor/medical service. Get medical advice/attention.
<u>Ingestion:</u>	Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a POISON CENTER/doctor/physician if you feel unwell.
<u>Inhalation:</u>	Assure fresh air breathing. Allow the exposed person to rest.
<u>Most Important Symptoms and Effects/Acute and Delayed:</u>	
Symptoms/injuries after skin contact: Causes skin irritation. Causes serious eye irritation.	
Symptoms/injuries after ingestion/inhalation: This product is harmful if swallowed or inhaled.	
<u>Indication of Immediate Medical Attention/Special Treatment:</u> No additional information available	

5 FIRE FIGHTING MEASURES

<u>Flammability of the Product:</u>	Not flammable.
<u>Extinguishing Media:</u>	Foam. Dry powder. Carbon dioxide. Water spray. Sand. Avoid (reject) fire-fighting water to enter environment.
<u>Special Firefighting Procedures:</u>	Do not enter fire area without proper protective equipment, including respiratory protection.
<u>Unusual Fire & Explosion Hazards:</u>	The products of thermal decomposition include irritating vapors, nitrogen oxides, chlorine compounds, carbon monoxide, and carbon dioxide.

6 ACCIDENTAL RELEASE MEASURES

<u>Personal precaution:</u>	Avoid generating splashes/sprays mist. Ensure adequate ventilation. Evacuate person to safe areas.
<u>Environmental precautions:</u>	Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.
<u>Methods for cleaning up:</u>	Personnel who have received basic chemical safety training can generally handle small-scale releases. Gloves, lab coat, and safety glasses must be worn when cleaning-up spills. Use caution during clean-up; contaminated floors and items may be slippery. Wipe-up spilled material with polypad or other absorbent material. Place clean-up materials in appropriate waste container for proper disposal.

7 HANDLING AND STORAGE

<u>Handling:</u>	Follow good chemical hygiene practices. Do not smoke, drink, eat, or apply cosmetics in the chemical use area. Avoid inhalation of vapors, mists and sprays. Use in well-ventilated area. Avoid contact with skin or eyes. Remove contaminated clothing promptly. Clean up spilled product immediately. Employees must be appropriately trained to use this product safely as needed. Keep containers closed when not in use.
<u>Storage:</u>	Store containers away from direct sunlight, sources of intense heat, or where freezing is possible. Store this product away from incompatible chemicals. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Empty containers may contain residual liquid; therefore, empty containers should be handled with care.
<u>Incompatibilities:</u>	See Section 10 (Stability and Reactivity).

8 EXPOSURE CONTROLS, PERSONAL PROTECTION

<u>Eye Protection:</u>	Safety glasses or goggles.		
<u>Hand Protection:</u>	Latex, nitrile or vinyl gloves.		
<u>Respiratory Protection:</u>	None, if used according to directions. If concerned use respiratory mask.		
<u>Ventilation:</u>	Use in a well-ventilated laboratory.		
<u>Other Protective Equipment:</u>	Lab coat or apron. Safety shower and eye wash facilities should be made available in laboratory.		
<u>Exposure Limits:</u> The following airborne exposure limits are applicable to components of this product.			
<u>Component:</u>	<u>ACGIH</u>	<u>OSHA</u>	<u>OTHER</u>
Guanidine Hydrochloride	N/A	N/A	N/A

9 PHYSICAL AND CHEMICAL PROPERTIES

<u>Physical State:</u>	Liquid
<u>Appearance:</u>	Colorless
<u>Odor:</u>	None
<u>Odor Threshold:</u>	No data available
<u>pH:</u>	No data available
<u>Melting Point/Freezing Point:</u>	No data available
<u>Initial Boiling Point/Boiling Range:</u>	No data available
<u>Flash Point:</u>	No data available
<u>Evaporation Rate (Water = 1):</u>	No data available
<u>Flammability:</u>	No data available
<u>Upper/Lower Explosive Limits:</u>	No data available
<u>Vapor Pressure:</u>	No data available
<u>Vapor Density:</u>	No data available
<u>Relative Density (Density):</u>	No data available
<u>Solubility:</u>	No data available
<u>Partition Coefficient/n-octanol/water:</u>	No data available
<u>Autoignition Temperature:</u>	No data available
<u>Decomposition Temperature:</u>	No data available
<u>Viscosity:</u>	No data available

10 STABILITY AND REACTIVITY

<u>Reactivity:</u>	No additional information available
<u>Incompatibility:</u>	Strong acids and bases, bleach
<u>Stability:</u>	Stable under recommended storage conditions
<u>Hazardous Polymerization:</u>	No data available
<u>Conditions to Avoid:</u>	Strong oxidizing agents
<u>Hazardous Decomposition Products:</u>	Fume. Carbon monoxide. Carbon dioxide.

11 TOXICOLOGICAL INFORMATION

Component Toxicity Data:
Guanidine Hydrochloride: LD50 (Oral, Rat) = 450 mg/kg; LD50 (Inhalation, Rat – female) = 3.81 mg/L; 4 hours
 To the best of our knowledge, the chemical, physical, and toxicological properties of this product have not been thoroughly investigated.

Product Toxicity Data:
 The following are calculated estimates for the product:
 Acute Toxicity Estimate (Oral) > 500 mg/kg
 Acute Toxicity Estimate (Dermal) > 5000 mg/kg
 Acute Toxicity Estimate (Inhalation) > 4.2 mg/L

Degree of Irritation: The product can cause skin and serious eye irritation.
Sensitization: This product does not contain any compound reported to be either a skin or respiratory sensitizer.
Review of Acute Symptoms: See Section 2 (Hazards Information) and Section 4 (First-Aid Measures) for additional details.
Carcinogenicity Status: No component of this product is listed as a carcinogen according to the NTP (National Toxicology Program), IARC (International Agency for Research on Cancer), or OSHA (US Occupational Safety and Health Administration).
Reproductive Toxicity Information: The components of this product are not reported to cause reproductive effects under typical circumstances of exposure.
Mutagenic Effects: The components of this product are not reported to cause mutagenic effects under typical circumstances of exposure.
Specific Target Organ Toxicity - Single Exposure: Not applicable.
Specific Target Organ Toxicity – Repeated Exposure: Not applicable.
Aspiration Hazard: Not applicable.
Toxicologically Synergistic Products: None known.
Additional Toxicology Information: This product is harmful if swallowed or inhaled.

12 ECOLOGICAL INFORMATION

Ecotoxicity:

Guanidine, hydrochloride (CAS 50-01-1): LC50 Fish = 1758 mg/L (48 hours; Leuciscus idus)

Persistence and Degradability: When released into the soil, the components of this product are expected to biodegrade, dissipate in soils via oxidation, or otherwise chemically degrade or photo-decompose via solar radiation. Data is available for components, as follows:

Guanidine, hydrochloride (CAS 50-01-1): Not readily biodegradable

Bioaccumulation Potential: The components of this product are not anticipated to bioaccumulate in any significant quantities.

Mobility in Soil: This product is anticipated to be mobile in soil.

13 DISPOSAL CONSIDERATIONS

Prepare, transport, treat, store, and dispose of waste product according to all applicable local, U.S. State and U.S. Federal regulations, the applicable Canadian standards, or other appropriate national standards.

14 TRANSPORTATION INFORMATION

Hazardous Materials Transportation Information: This material is not hazardous for shipment, per the Department of Transportation Hazardous Materials Regulations or International Air Transport Association/International Maritime Organization Dangerous Goods Codes. Please contact the manufacturer if there are questions pertinent to the shipment of this product

Environmental Hazards: None described, as related to transportation.

Special Precautions for Users: Not applicable.

15 REGULATORY INFORMATION

U.S. Environmental Health and Safety Regulations:

- * U.S. SARA HAZARD CATEGORIES (SECTION 311/312): Acute Toxicity; Skin Corrosion/Irritation; Eye Damage/Irritation.
- * U.S. CERCLA REPORTABLE QUANTITY (RQ): This material does not contain any components with a CERCLA RQ.
- * U.S. SARA SECTION 313: 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.
- * U.S. TSCA INVENTORY STATUS: All components of this product are listed on the TSCA Inventory.
- * U.S. CLEAN AIR ACT (Section 112r): No component is designated as a Hazardous Air Pollutant.
- * CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) STATUS: This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

International Regulations:

- * CANADIAN Regulatory Status: The product is not classified as hazardous under Hazardous Products Regulations (SOR-2015-17).
- * WHMIS 2015: See section 2. This SDS contains all the information required by the Hazardous Products Regulations.
- * CANADIAN DSL/NDSL INVENTORY STATUS: The listed components of this product are on the DSL/NDSL Inventory.
- * CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITY SUBSTANCES LISTS: The components of this product are not on the CEPA Priority Substances Lists.
- * EUROPEAN INFORMATION: Caution: Substance not yet fully tested.

16 OTHER INFORMATION

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

Documentation:

Change Indicated: Prepared per OSHA Hazard Communication Standard (29 CFR 1910.1200).

Date of Publication: April 17, 2019

Supersedes: Not applicable.

References for Development:

* SAFETY DATA SHEETS FOR COMPONENT PRODUCTS.

* RTECS – Registry of Effects of Toxic Chemicals

* ECHA: European Chemical Hazards Agency <http://echa.europa.eu/en/information-on-chemicals/>

*TOXNET: <http://toxnet.nlm.nih.gov/>