

# Material Safety Data Sheet

## OptiBind™ Buffers



### 1. Product and Company Identification

Product Name	OptiBind™ Buffers
Product Number	OM-052 (A-L)
MSDS Number	0009
Validation Date	November 14, 2011
Print Date	November 14, 2011
Company	Siloam Biosciences, Inc.
Address	413 Northland Blvd Cincinnati, OH 45240 United States
Telephone	+1 513 429 2976
Fax	+1 513 429 2946
Emergency Phone	+1 513 429 2976 (Monday-Friday, 8:00AM-5:00PM, ET)
Use of Substance/Preparation	Refer to the instruction booklet for proper and intended use. Otherwise, contact supplier for specific applications.

### 2. Hazards Identification

#### OSHA/HCS Status

The toxicity of OptiBind™ Buffers has not been evaluated against the criteria established in CFR 1910.1200 App A for Toxic and Hazardous Substances.

OptiBind™ Buffers are composed of two materials formulated in distilled water. Trade Secret #16 is present at concentrations ranging from 0.56 – 3.10% w/v. Trade Secret #17 is present at concentrations of 0.27 – 1.77 % w/v.

Note that Trade Secrets #16 and 17 in their powdered form (prior to their formulation as components of OptiBind™) are classified as irritants by OSHA.

#### Emergency Overview

May cause mild irritation to skin and eyes following contact. May cause mild irritation to airways if buffer is aerosolized and inhaled. May cause mild irritation to mouth following exposure to liquid or aerosol.

Wear proper personal protective equipment and practice safe laboratory technique (See Section 8) to prevent exposure.

If exposure occurs, follow the first aid procedures described in Section 4 of this document.

#### Routes of Entry

Dermal contact. Eye contact. Inhalation. Ingestion.

## OptiBind™ Buffers

### Potential Acute Health Effects

Skin	May cause skin irritation.
Eyes	May cause eye irritation.
Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	May be harmful if swallowed.

### Potential Chronic Health Effects

Chronic Effects	OptiBind™ Buffers' potential for chronic health effects have not been evaluated.
Carcinogenicity	OptiBind™ Buffers' potential for chronic health effects have not been evaluated.
Mutagenicity	OptiBind™ Buffers' potential for chronic health effects have not been evaluated.
Teratogenicity	OptiBind™ Buffers' potential for chronic health effects have not been evaluated.
Developmental Effects	OptiBind™ Buffers' potential for chronic health effects have not been evaluated.
Fertility Effects	OptiBind™ Buffers' potential for chronic health effects have not been evaluated.
Target Organs	None known.

### Over-Exposure Signs/Symptoms

Inhalation	Not defined.
Ingestion	Not defined.
Skin	Not defined.
Eyes	Not defined.

Medical Conditions Aggravated By Over-Exposure	Not defined.
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The preparation is not classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification	Not Classified.
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See toxicological information (Section 11)

## 3. Composition/Information on Ingredients

### United States

<u>Name</u>	<u>CAS Number</u>	<u>%</u>
Trade Secret #16	-	0.56 – 3.10
Trade Secret #17	-	0.27 – 1.77

### Substance/Preparation    Preparation

There are no ingredients or additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

## **4. First Aid Measures**

<b>Skin Contact</b>	Wash contaminated skin with soap and water. Consult a physician if necessary.
<b>Eye Contact</b>	Flush the affected eye with water immediately using an eye wash station. Continue washing for least 15 minutes. Consult a physician.
<b>Inhalation</b>	Move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
<b>Ingestion</b>	Rinse mouth with water. Consult a physician. Never give anything by mouth to an unconscious person.
<b>Protection of First-Aiders</b>	No action shall be taken involving any personal risk or without suitable training.

See section 11 for more detailed information on health effects and symptoms.

## **5. Fire-fighting Measures**

<b>Flammability of The Product</b>	OptiBind™ Buffers are not flammable or combustible.
<b>Extinguishing Media</b>	
<b>Suitable</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<b>Not Suitable</b>	None known.
<b>Special Exposure Hazards</b>	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
<b>Hazardous Combustion Products</b>	Hazardous decomposition products formed under fire conditions include oxides of phosphorus, sodium oxides, carbon oxides.
<b>Special Protective Equipment for Fire-Fighters</b>	Wear self-contained breathing apparatus for firefighting if necessary.

## **6. Accidental Release Measures**

<b>Personal Precautions</b>	Do not take action involving personal risk without suitable training. Use personal protective equipment (see section 8). Avoid skin and eye contact. Avoid breathing vapor or mist if present. Keep unnecessary and unprotected personnel away from spill. Do not touch or walk through spilled material.
<b>Environmental Precautions</b>	Limit dispersal of the spilled material. Prevent contact of the material with soil, waterways, drains, and sewers. Inform the relevant authorities if the product has caused environmental pollution (entry to sewers, waterways, soil, or air).
<b>Small Spill</b>	OptiBind™ Buffers are typically supplied and used in small volumes ( $\leq 10$ mL). Follow the Environmental Exposure Controls and Engineering

Measures detailed in Section 8 of this document to minimize the possibility of spills.

In the event of a small spill:

- (1) Wear the recommended personal protection equipment (Section 8) during cleanup operations.
- (2) Immediately contain the spill using absorbent materials such as paper towels or absorbent laboratory paper.
- (3) Following initial containment, discard the used papers according to approved disposal procedures (Section 13).
- (4) Wash the contaminated area with warm tap water containing a laboratory detergent and then rinse the area.
- (5) Discard the used papers according to approved procedures.

### Large Spill

OptiBind™ Buffers may be supplied in larger, custom-packed volumes (e.g. 1 liter) for some users. In the event of a large spill:

- (1) Wear the recommended personal protection equipment (Section 8) during cleanup operations.
- (2) If the spill is on a floor, ensure other laboratory occupants are notified and travel through the spill-area is stopped.
- (3) Immediately contain the spill using absorbent materials such as paper towels or absorbent laboratory paper. For larger spills use diatomaceous earth, vermiculite, or other absorbent material to absorb liquid.
- (4) Wash the contaminated area with warm tap water containing a laboratory detergent and rinse.
- (5) Discard the used papers according to approved procedures.

## 7. Handling and Storage

### Handling

- (1) Wear personal protective equipment detailed in Section 8 of this document when using OptiBind™ Buffers.
- (2) Use the Engineering Measures described in Section 8 of this document.
- (3) Employ the Hygiene Measures and Environmental Exposure Controls detailed in Section 8 of this document.
- (4) Follow the disposal directions detailed in Section 13 of this document.

### Storage

Store at 2 to 8°C (36 to 46°F) in original containers

## 8. Exposure Control/Personal Protection

### Europe

Exposure limits have not been established for OptiBind™ Buffers.

Consult local authorities for acceptable exposure limits.

## OptiBind™ Buffers

### Recommended Monitoring Procedures

Monitoring is not required.

### Engineering Measures

- (1) Use approved pipetting devices for transferring buffer. Do not pipet by mouth.
- (2) If vortex mixing is required, place liquid in a capped-tube and securely close cap before mixing.
- (3) If centrifugation is required, place liquid in a capped-tube and securely close the cap before centrifuging.
- (4) Ensure that safety showers and eyewashes are available and in proper working condition.

### Hygiene Measures

- (1) At the conclusion of laboratory work, wash hands and wrists with soap and water.
- (2) Do not eat, drink, apply cosmetics or contact lenses, or smoke in a laboratory or before washing hands at the conclusion of laboratory work.

If clothing becomes contaminated with buffer, wash contaminated clothing before reusing.

### Personal Protection

#### Respiratory

Respiratory protection is not required for users of OptiBind™ Buffers.

#### Hands

Chemical resistant and impervious rubber gloves are recommended when working with OptiBind™ Buffers.

#### Eyes

Laboratory-approved safety glasses with eye shields are recommended for users of OptiBind™ Buffers. Laboratory-approved goggles or full-face shields may be effective substitutes.

#### Skin

Buttoned knee-length laboratory coats are recommended for users of OptiBind™ Buffers. Launder laboratory coats regularly and following contamination with OptiBind™ Buffers.

### Environmental Exposure Controls

Cover work space on laboratory bench with absorbent paper. Discard absorbent paper appropriately if it becomes contaminated. Ensure that an approved spill containment kit is available in the laboratory and that staff are trained in its use.

## 9. Physical/Chemical Properties

### Physical State

Liquid.

### Color

Colorless.

### Odor

Odorless.

### Solubility

Soluble in water.

### Flash Point

No data available.

### Ignition Temperature

No data available.

## 10. Stability and Reactivity

### Chemical Stability

The product is stable under recommended storage conditions.

### Conditions to Avoid

No data available.

## OptiBind™ Buffers

Incompatible Materials	Oxidizing agents, reducing agents, acids, bases, nitrates.
Hazardous Decomposition Products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Possibility of Hazardous Reactions	No data available.

## 11. Toxicological Information

### United States

#### Acute Toxicity

Product/Ingredient Name	Result	Species	Dose	Exposure
OptiBind™ Buffers	Not Evaluated.			
Trade Secret #16	LD50 Oral LC50 LD50 Dermal	Rat	17,000 mg/kg Data unavailable. Data unavailable.	
Trade Secret #17	LD50 Oral	Rat	3,000 mg/kg	

Conclusion/Summary The acute toxicity of OptiBind™ Buffers has not been evaluated.

#### Chronic Toxicity

Conclusion/Summary The chronic toxicity of OptiBind™ Buffers has not been evaluated.

#### Carcinogenicity

Conclusion/Summary The carcinogenicity of OptiBind™ Buffers has not been established.

#### Classification

Product/Ingredient Name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
OptiBind™ Buffers	Not tested.					
Trade Secret #16	NC	NC	No Data	No Data	NC	NC
Trade Secret #17	NC	NC	No Data	No Data	NC	NC

NC=Not  
carcinogen

#### Mutagenicity

Conclusion/Summary The mutagenicity of OptiBind™ Buffers has not been evaluated.

#### Teratogenicity

Conclusion/Summary The teratogenicity of OptiBind™ Buffers has not been evaluated.

#### Reproductive Toxicity

Conclusion/Summary The reproductive toxicity of OptiBind™ Buffers has not been evaluated.

## OptiBind™ Buffers

### Europe

Chronic Effects	No known significant effects or critical hazards.
Carcinogenicity	No known significant effects or critical hazards.
Mutagenicity	No known significant effects or critical hazards.
Teratogenicity	No known significant effects or critical hazards.
Developmental Effects	No known significant effects or critical hazards.
Fertility Effects	No known significant effects or critical hazards.

## 12. Ecological Information

Environmental Effects No known significant effects or critical hazards.

### United States

#### Aquatic Ecotoxicity

Conclusion/Summary The aquatic toxicity of OptiBind™ Buffers has not been evaluated.

Other Adverse Effects No known significant effects or critical hazards.

## 13. Disposal Considerations

Waste Disposal OptiBind™ Buffers are aqueous buffers containing standard buffering materials. The buffers and materials exposed to the buffers should be discarded according to local regulations for such laboratory materials.

Hazardous Waste Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 91/689/EEC.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

## 14. Transport Information

Regulatory Information	UN Number	Proper Shipping Name	Classes	PG*
DOT Classification	Not regulated.	-	-	-
IATA-DGR Class	Not regulated.	-	-	-

PG\*: Packing Group

## 15. Regulatory Information

### United States

HCS Classification Not classified.

U.S. Federal Regulations Not listed.

## OptiBind™ Buffers

### Canada

WHMIS (Canada) Not listed.  
Canadian Lists Not listed.

Canada Inventory Not listed.

### EU Regulations

Risk Phrases This product is not classified according to EU legislation.

### International Regulations

International Lists  
Australia inventory (AICS): Not listed.  
China inventory (IECSC): Not listed.  
Korea inventory (KECI): Not listed.  
Philippines inventory (PICCS): Not listed.  
Japan inventory (ENCS): Not listed.

## 16. Other Information

### Label Requirements

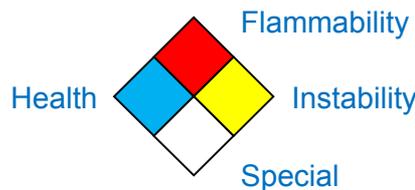
MAY CAUSE RESPIRATORY TRACT, EYE, AND SKIN IRRITATION. MAY BE HARMFUL IF SWALLOWED. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE BASED ON ANIMAL DATA.

### Hazardous Material Information System (U.S.A.)

Health	
Flammability	
Physical Hazards	

**The customer is responsible for determining the PPE code for this material.**

### National Fire Protection Association (U.S.A.)



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Indicates information that has changed from previously issued version.  
Storage condition has been changed.

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