

**SAFETY DATA SHEET****Product Trade Name:** BioVert NWB**Revision Date:** 09-Oct-2015**Revision Number:** 12**1. Identification****1.1. Product Identifier**

**Product Trade Name:** BioVert NWB  
**Synonyms:** None  
**Chemical Family:** Polymer  
**Internal ID Code** HM006996

**1.2 Recommended use and restrictions on use**

**Application:** Viscosifier  
**Uses Advised Against** No information available

**1.3 Manufacturer's Name and Contact Details****Manufacturer/Supplier**

Halliburton Energy Services, Inc.  
P.O. Box 1431  
Duncan, Oklahoma 73536-0431  
Emergency Telephone: (1-866-519-4752 (US, Canada, Mexico) or 1-760-476-3962

Halliburton Energy Services  
645 - 7th Ave SW Suite 2200  
Calgary, AB  
T2P 4G8  
Canada

**Prepared By** Chemical Stewardship  
Telephone: 1-281-871-6107  
e-mail: fdunexchem@halliburton.com

**1.4. Emergency telephone number**

**Emergency Telephone Number** 1-866-519-4752 or 1-760-476-3962

**2. Hazard(s) Identification****2.1 Classification in accordance with paragraph (d) of §1910.1200**

Combustible dust	Combustible dust
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**2.2. Label Elements****Hazard Pictograms**

**Signal Word** Warning

**Hazard Statements**

May form combustible dust concentrations in air.

**Precautionary Statements**

<b>Prevention</b>	None
<b>Response</b>	None
<b>Storage</b>	None
<b>Disposal</b>	None

### **2.3 Hazards not otherwise classified**

None known

## **3. Composition/information on Ingredients**

<b>Substances</b>	<b>CAS Number</b>	<b>PERCENT (w/w)</b>	<b>GHS Classification - US</b>
Polylactide resin	Proprietary	60 - 100%	Combustible Dust

The specific chemical identity of the composition has been withheld as proprietary. The exact percentage (concentration) of the composition has been withheld as proprietary.

## **4. First-Aid Measures**

### **4.1. Description of first aid measures**

<b>Inhalation</b>	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
<b>Eyes</b>	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.
<b>Skin</b>	Wash with soap and water. Get medical attention if irritation persists.
<b>Ingestion</b>	If swallowed, induce vomiting immediately by giving two glasses of water and sticking fingers down throat; never give anything to an unconscious person. Get medical attention.

### **4.2 Most important symptoms/effects, acute and delayed**

No significant hazards expected.

### **4.3. Indication of any immediate medical attention and special treatment needed**

**Notes to Physician** Treat symptomatically.

## **5. Fire-fighting measures**

### **5.1. Extinguishing media**

#### **Suitable Extinguishing Media**

Water fog, carbon dioxide, foam, dry chemical.

#### **Extinguishing media which must not be used for safety reasons**

None known.

### **5.2 Specific hazards arising from the substance or mixture**

#### **Special Exposure Hazards**

Decomposition in fire may produce harmful gases. Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential.

### **5.3 Special protective equipment and precautions for fire-fighters**

#### **Special Protective Equipment for Fire-Fighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment. Spills of this product are very slippery. Avoid contact with skin, eyes and clothing. Avoid creating and breathing dust. Ensure adequate ventilation.

See Section 8 for additional information

### 6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas.

### 6.3. Methods and material for containment and cleaning up

Scoop up and remove.

## 7. Handling and storage

### 7.1. Precautions for Safe Handling

#### Handling Precautions

Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Avoid dust accumulations. Ensure adequate ventilation. Use appropriate protective equipment.

#### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

### 7.2. Conditions for safe storage, including any incompatibilities

#### Storage Information

Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Store between 40.5 F (4.7 C) and 120.5 F (49 C). Store away from oxidizers. Store in a cool, dry location. Product has a shelf life of 24 months.

## 8. Exposure Controls/Personal Protection

### 8.1 Occupational Exposure Limits

Substances	CAS Number	OSHA PEL-TWA	ACGIH TLV-TWA
Polylactide resin	Proprietary	15 mg/M3	10 mg/M3

### 8.2 Appropriate engineering controls

Engineering Controls Use in a well ventilated area.

### 8.3 Individual protection measures, such as personal protective equipment

**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

**Respiratory Protection** If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.

Not normally needed. But if significant exposures are possible then the following respirator is recommended:

Dust/mist respirator. (N95, P2/P3)

**Hand Protection** Use gloves which are suitable for the chemicals present in this product as well as other environmental factors in the workplace.

**Skin Protection** Normal work coveralls.

**Eye Protection** Wear safety glasses or goggles to protect against exposure.

Other Precautions	None known.
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## 9. Physical and Chemical Properties

### 9.1. Information on basic physical and chemical properties

Physical State:	Powder	Color:	Clear
Odor:	Sweet	Odor	No information available
		Threshold:	

Property	Values
Remarks/ - Method	
pH:	No data available
Freezing Point/Range	No data available
Melting Point/Range	No data available
Boiling Point/Range	No data available
Flash Point	No data available
Flammability (solid, gas)	No data available
upper flammability limit	No data available
lower flammability limit	No data available
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	1.25
Water Solubility	Insoluble in water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

### 9.2. Other information

VOC Content (%)	No data available
Bulk Density	54.5 lbs/ft3

## 10. Stability and Reactivity

### 10.1. Reactivity

Not expected to be reactive.

### 10.2. Chemical Stability

Stable

### 10.3. Possibility of Hazardous Reactions

Will Not Occur

### 10.4. Conditions to Avoid

Temperature over 440 F (240 C). Keep away from heat, sparks and flame.

### 10.5. Incompatible Materials

Strong oxidizers. Strong alkalis.

### 10.6. Hazardous Decomposition Products

Toxic fumes. Aldehydes. Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**11.1 Information on likely routes of exposure**

**Principle Route of Exposure** Eye or skin contact, inhalation.

**11.2 Symptoms related to the physical, chemical and toxicological characteristics****Acute Toxicity**

<b>Inhalation</b>	May cause mild respiratory irritation.
<b>Eye Contact</b>	May cause mild eye irritation.
<b>Skin Contact</b>	Prolonged or repeated contact may cause slight skin irritation.
<b>Ingestion</b>	Irritation of the mouth, throat, and stomach. Large doses may cause nausea, vomiting and diarrhea.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**11.3 Toxicity data****Toxicology data for the components**

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Polylactide resin	Proprietary	> 5000 mg/kg	> 2000 mg/kg	No data available

**12. Ecological Information****12.1. Toxicity****Ecotoxicity Effects**

Product is not classified as hazardous to the environment.

**Product Ecotoxicity Data**

No data available

**Substance Ecotoxicity Data**

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Polylactide resin	Proprietary	EC50: >1100 mg/l	No information available	No information available	No information available

**12.2. Persistence and degradability**

Substances	CAS Number	Persistence and Degradability
Polylactide resin	Proprietary	No information available

**12.3. Bioaccumulative potential**

Substances	CAS Number	Log Pow
Polylactide resin	Proprietary	No information available

**12.4. Mobility in soil**

Substances	CAS Number	Mobility
Polylactide resin	Proprietary	No information available

**12.5 Other adverse effects**

No information available

**13. Disposal Considerations****13.1. Waste treatment methods**

**Disposal Method** Bury in a licensed landfill according to federal, state, and local regulations.  
**Contaminated Packaging** Follow all applicable national or local regulations.

**14. Transport Information****US DOT**

**UN Number:** Not restricted  
**UN Proper Shipping Name:** Not restricted  
**Transport Hazard Class(es):** Not applicable  
**Packing Group:** Not applicable  
**Environmental Hazards:** Not applicable

**US DOT Bulk**

**DOT (Bulk)** Not applicable

**Canadian TDG**

**UN Number:** Not restricted  
**UN Proper Shipping Name:** Not restricted  
**Transport Hazard Class(es):** Not applicable  
**Packing Group:** Not applicable  
**Environmental Hazards:** Not applicable

**IMDG/IMO**

**UN Number:** Not restricted  
**UN Proper Shipping Name:** Not restricted  
**Transport Hazard Class(es):** Not applicable  
**Packing Group:** Not applicable  
**Environmental Hazards:** Not applicable

**IATA/ICAO**

**UN Number:** Not restricted  
**UN Proper Shipping Name:** Not restricted  
**Transport Hazard Class(es):** Not applicable  
**Packing Group:** Not applicable  
**Environmental Hazards:** Not applicable

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:** Not applicable

**Special Precautions for User:** None

**15. Regulatory Information****US Regulations**

**US TSCA Inventory** All components listed on inventory or are exempt.

**TSCA Significant New Use Rules - S5A2**

Substances	CAS Number	TSCA Significant New Use Rules - S5A2
Polylactide resin	Proprietary	Not applicable

**EPA SARA Title III Extremely Hazardous Substances**

Substances	CAS Number	EPA SARA Title III Extremely Hazardous Substances
Polylactide resin	Proprietary	Not applicable

**EPA SARA (311,312) Hazard Class**

None

**EPA SARA (313) Chemicals**

Substances	CAS Number	Toxic Release Inventory (TRI) - Group I	Toxic Release Inventory (TRI) - Group II
Polylactide resin	Proprietary	Not applicable	Not applicable

**EPA CERCLA/Superfund Reportable Spill Quantity**

Substances	CAS Number	CERCLA RQ
Polylactide resin	Proprietary	Not applicable

**EPA RCRA Hazardous Waste Classification**

If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.

**California Proposition 65** All components listed do not apply to the California Proposition 65 Regulation.**MA Right-to-Know Law** Does not apply.**NJ Right-to-Know Law** Does not apply.**PA Right-to-Know Law** Does not apply.**NFPA Ratings:** Health 1, Flammability 1, Reactivity 0**HMIS Ratings:** Health 1, Flammability 1, Physical Hazard 0**Canadian Regulations****Canadian DSL Inventory** All components listed on inventory or are exempt.**16. Other information****Preparation Information****Prepared By**Chemical Stewardship  
Telephone: 1-281-871-6107  
e-mail: fdunexchem@halliburton.com**Revision Date:** 09-Oct-2015**Reason for Revision** SDS sections updated:2  
3  
5  
6  
7  
8  
10**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key or legend to abbreviations and acronyms**

bw – body weight  
CAS – Chemical Abstracts Service  
EC50 – Effective Concentration 50%  
ErC50 – Effective Concentration growth rate 50%  
LC50 – Lethal Concentration 50%  
LD50 – Lethal Dose 50%  
LL50 – Lethal Loading 50%  
mg/kg – milligram/kilogram  
mg/L – milligram/liter  
NIOSH – National Institute for Occupational Safety and Health  
NTP – National Toxicology Program  
OEL – Occupational Exposure Limit  
PEL – Permissible Exposure Limit  
ppm – parts per million  
STEL – Short Term Exposure Limit  
TWA – Time-Weighted Average  
UN – United Nations  
h - hour  
mg/m<sup>3</sup> - milligram/cubic meter  
mm - millimeter  
mmHg - millimeter mercury  
w/w - weight/weight  
d - day

**Key literature references and sources for data**

[www.ChemADVISOR.com/](http://www.ChemADVISOR.com/)

**Disclaimer Statement**

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**End of Safety Data Sheet**