



Material Safety Data Sheet (MSDS): *BioBased 501*

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name *BioBased 501* semi-rigid polyurethane spray foam insulation

Manufacturer BioBased Systems, LLC
1315 N. 13th Street
Rogers, AR 72756
800-803-5189

EMERGENCY CONTACT

**IN CASE OF CHEMICAL EMERGENCIES:
CALL CHEMTREC AT 800-424-9300
OR (COLLECT) 703-527-3887 (USA)**

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Common Chemical Name polyurethane foam

Synonyms urethane; urethane plastic

SECTION 2: INGREDIENT INFORMATION

BioBased 501

Chemical Name	CAS Number	Percent	PEL (OSHA)	TLV (ACGIH)	LD ₅₀	LC ₅₀
Polyurethane Foam	n/a	90 to 100%	(not established)	(not established)	(not established)	(not established)

SECTION 3: HAZARD IDENTIFICATION

Routes of Entry for Solids	Inhalation, eye contact, and skin contact—only if dust is generated during cutting or abrasive removal processes.
Routes of Entry for Gases	(not applicable)
Eyes	Dust may cause mechanical irritation to the eyes.
Skin	No irritation to the skin determined.
Dust Inhalation	Dust may cause mechanical irritation to the respiratory system.
Dust Ingestion	Dust may cause choking if swallowed.
Toxicological Information	Refer to “ <i>Section 11: Toxicological Information</i> ”.
Carcinogenicity	Refer to “ <i>Section 15: Regulatory Information</i> ”.

SECTION 4: FIRST AID MEASURES

Skin	Thoroughly wash with soap and water.
Eyes	If irritated by contaminants, irrigate with water. If irritation persists, seek medical attention.
Ingestion	No adverse effects anticipated by this route.
Inhalation	Move to fresh air. Aid in breathing if necessary and get immediate medical attention. Supplemental oxygen may be indicated.

SECTION 5: FIRE FIGHTING MEASURES

Flammability	Flammable. Combustion occurs at 400°F (205°C) (material will not sustain combustion on its own).
Conditions of Flammability	Heat, sparks, open flame
Extinguishing Media	Dry chemical such as monoammonium phosphate, potassium sulfate, or potassium chloride. For large fires, carbon dioxide, high expansion (proteinic) chemical foam, and water spray should be used.
Special Procedures	Wear self-contained breathing apparatus and turn-out gear.
Flash-Point	(not determined)
Auto-ignition Temperature	400°F (205°C)
Hazardous Combustion Products	Decomposition can include carbon monoxide, carbon dioxide, hydrogen products, and nitrogen oxides.
Installation Precaution	Semi-rigid polyurethane foam should not be installed to any interior wall or ceiling without prompt and subsequent application of approved thermal barriers.



Semi-rigid polyurethane foam—like other organic materials such as paper, wood, cotton, etc.—can produce fire risks if incorrectly installed and then exposed to sources of ignition and adequate oxygen. Once ignited, fires can burn rapidly and produce rapid flamespread, quick flashover, toxic or flammable gases, smoke, and intense heat.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Waste Disposal Refer to "Section 13: Disposal Considerations" for disposal instructions.

SECTION 7: HANDLING AND STORAGE

Eye Protection	Use safety glasses during cutting and abrasive removal operations.
Skin Protection	Specialized protective clothing is not necessary.
Respiration Protection	Use a dust mask during cutting and abrasive removal operations.
Ventilation	Provide adequate ventilation to keep dust exposure below 5 mg/m ³ (breathable nuisance dust).

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls

Ventilation	Use adequate ventilation to ensure that the occupational exposure limit is not exceeded. Ventilation must be to the outside, not to other parts of the building.
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Personal Protection

Eye Protection	Use safety glasses during cutting and abrasive removal operations.
Skin Protection	Specialized protective clothing is not necessary.
Respiration Protection	Use a dust mask during cutting and abrasive removal operations.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical Appearance	Cream colored cellular foam (may become yellow to light brown if exposed to sunlight for extended time). Looks similar to angel food cake.
Odor	neutral
Density	0.5 lb/ft ³
Melting Point	not applicable; thermoset
Decomposition Temperature	>250°F (>120°C)
Maximum Service Temperature	180°F (80°C)
Solubility in Water	none
Solubility in Other Solvents	not determined

SECTION 10: STABILITY AND REACTIVITY

Stability	Stable under normal conditions.
Materials to Avoid (incompatibility)	None known.
Hazardous Decomposition Products	Decomposition can include carbon monoxide, carbon dioxide, hydrogen products, and nitrogen oxides.
Hazardous Polymerization	Will not occur.
Corrosive Properties	Not determined.
Oxidizer Properties	Is not an oxidizer.
Chemical Resistance	Stable in the presence of most solvents found in binders, bituminous materials, wood preservatives and sealers. <ul style="list-style-type: none">• Resistant to facers containing plasticizers, fuel, mineral oil, weak acids, and weak bases.• Resistant to fungi and microbes.• UV rays cause a darkening and embrittlement of the surface of the foam over time.



SECTION 11: TOXICOLOGICAL INFORMATION

Oral / Dermal / Inhalation Refer to "Section 2: Ingredient Information".

SECTION 12: ECOLOGICAL INFORMATION

Not Applicable

SECTION 13: DISPOSAL CONSIDERATIONS

Summary BioBased 501 component is not an RCRA "acutely hazardous material", therefore neither the component nor its containers are subject to RCRA regulations governing acutely hazardous material. Dispose in accordance with local, state, and federal regulations.

SECTION 14: TRANSPORT INFORMATION

Not applicable—transportation of bulk finished product is not anticipated.

SECTION 15: REGULATORY INFORMATION

NFPA[®] Suggested Ratings Not determined

HMIS[®] Suggested Ratings Not determined

CAUTION: HMIS[®] ratings are based on a 0–4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS[®] ratings are not required in MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS[®] ratings are to be used only in conjunction with a fully implemented HMIS[®] program by workers who have received appropriate HMIS[®] training. HMIS[®] is a registered trade and service mark of the NPCA. HMIS[®] materials can be purchased exclusively from J. J. Keller (800) 327-6868.

Clean Air Act (CAA) This material does not contain any Class 1 Ozone depletors. This material does not contain any Class 2 Ozone depletors.

Clean Water Act (CWA) None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA None of the chemicals in this product are considered highly hazardous by OSHA

SECTION 16: OTHER INFORMATION

While the descriptions, designs, data, and information contained herein are presented in good faith and believed to be accurate, it is provided for your guidance only. Because many factors can affect the processing or application of the product and/or its use, it is recommended that you make tests to determine the suitability of the product for your particular purpose prior to use. No warranties of any kind—either expressed or implied—including warranties of merchantability or fitness for a particular purpose, are made regarding products described or designs. Data or information may be used without infringing the intellectual property rights of others. In no case shall the descriptions, information, data or designs provided be considered a part of our terms and conditions of sale. Furthermore, it is to be expressly understood and agreed by you that the provision of descriptions, designs, data, and information by *BioBased Systems, LLC* does not assume obligation or liability for the given descriptions, designs, data, and information, or the results obtained from them—all such being given and accepted at your own risk.

Glossary

ACGIH	American Conference of Governmental Industrial Hygienists
CAS Registry Number	Number assigned by the Chemical Abstracts Service Chemical Registry System. Refers to a single or complex substance that has a unique chemical name.
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act—also know as “Superfund”. Enacted in 1980 and administered by the EPA.
CHEMTREC	Chemical Transportation Emergency Center established by the CMA.
CMA	Chemical Manufacturers Association
CWA	Clean Water Act administered by the EPA.
FEV	Forced Expiratory Volume - Lung function test performed by a physician.
FVC	Forced Vital Capacity - Lung function test performed by a physician.
EPA	Environmental Protection Agency
HMIS	Hazardous Materials Information System developed by the National Paint and Coatings Association.
LC ₅₀	Lethal Concentration - The calculated concentration of a substance in air required to kill 50% of a group of test animals in with a single exposure (usually 1 to 4 hours).
LD ₅₀	Lethal Dose - A single calculated dose of a substance expected to kill 50% of a group of test animals.
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health administered by the U.S. Department of Health and Human Services.
NOEL	No Observable Effect Level for reproductive harm (California Proposition 65)
NPCA	National Paint and Coatings Association
NSRL	No Significant Risk Levels for cancer (California Proposition 65)
OECD	Organization for Economic Cooperation and Development



- OSHA Occupational Safety and Health Administration administered by the U.S. Department of Labor.
- PEL Permissible Exposure Limit - An occupational exposure limit established by OSHA's regulatory authority.
- PPM Parts Per Million – measure of concentration of a chemical in a liquid or vapor.
- RCRA Resource Conservation and Recovery Act administered by the EPA.
- SARA Title III Title III of the Superfund Amendments and Reauthorization Act
- STEL Short Term Exposure Limit as defined by the ACGIH.
- TLV Threshold Limit Value - Material concentration value which workers can exist at or below and have no health problems.

MSDS Revision History for *BioBased 501*

Revision	Date	Page(s)	Description
1.00	12/08/04	All	MSDS issued.