



# Green Plains

## GHS SAFETY DATA SHEET

BIO-CULTURE

SDS DATE: 09/28/2017

### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME (GHS Product Identifier):** Bio-Culture  
**(Other means of Identification):** Methanator Bugs, Methanogens

**PRODUCT INTENDED USE AND RESTRICTION:** Product is for external use only

**MANUFACTURER:** Green Plains, Inc.  
**DIVISION:**

<b>Green Plains Atkinson LLC.</b> 87590 Hill Crest Rd. Atkinson, NE 68713 P.O. Box 391, Atkinson, NE 68713 Phone: 402-925-5570 Fax: 402-925-2988 <input type="checkbox"/>	<b>Green Plains Bluffton LLC.</b> 1441 S. Adams St., Bluffton, IN 46714 Phone: 260-353-1212 Fax: 260-353-1100 <input checked="" type="checkbox"/>	<b>Green Plains Central City LLC.</b> 214 20 <sup>th</sup> St., Central City, NE 68826 Phone: 308-946-9700 Fax: 308-946-2623 <input type="checkbox"/>	<b>Green Plains Fairmont LLC.</b> 1125 N Bixby Road, Fairmont, MN 56031 Phone: 507-238-3600 Fax: 507-238-3624 <input type="checkbox"/>	<b>Green Plains Hereford LLC</b> 4300 County Road 8 Hereford, TX 79045 Phone: 806-258-7800 Fax: 806-258-7801 <input type="checkbox"/>
<b>Green Plains Holdings II LLC.-Lakota</b> 1660 428 <sup>th</sup> St., Lakota, IA 50451 Phone: 515-886-2222 Fax: 515-886-2127 <input type="checkbox"/>	<b>Green Plains Holdings II LLC.-Riga</b> 7025 Siberhorn Hwy, Blissfield, MI 49228 P.O. Box 12, Riga, MI 49276 Phone: 517-486-6190 Fax: 517-486-6192 <input type="checkbox"/>	<b>Green Plains Hopewell LLC</b> 701 South 6th Avenue Hopewell, VA 23860 Phone: 804-668-0010 Fax: 804-668-0020 <input type="checkbox"/>	<b>Green Plains Madison LLC</b> 395 Bissell St Madison, IL 63060 Phone: 618-451-4420 Fax: 618-452-8946 <input type="checkbox"/>	<b>Green Plains Mt Vernon LLC</b> 8999 W Franklin Rd Mt Vernon, IN 47620 Phone: 812-985-4023 Fax: 812-985-9983 <input type="checkbox"/>
<b>Green Plains Obion LLC.</b> 2098 McDonald Rd., Rives, TN 38253/P.O. Box 95, Obion, TN 38240 Phone: 731-536-1286 Fax: 731-536-1434 <input type="checkbox"/>	<b>Green Plains Ord LLC.</b> 48267 Val-E Road, Ord, NE 68862 Phone: 308-496-4823 Fax: 308-496-4890 <input type="checkbox"/>	<b>Green Plains Otter Tail LLC.</b> 24096 170th Ave., Fergus Falls, MN 56537 Phone: 218-998-4301 Fax: 218-998-4302 <input type="checkbox"/>	<b>Green Plains Shenandoah LLC.</b> 4124 Airport Rd., Shenandoah, IA 51601 Phone: 712-246-2932 Fax: 712-246-3988 (offline but not decommissioned) <input checked="" type="checkbox"/>	<b>Green Plains Superior LLC.</b> 1495 320th Ave, Superior, IA 51363 Phone: 712-858-4666 Fax: 712-858-4684 <input type="checkbox"/>
<b>Green Plains Wood River LLC.</b> 7874 South 140th Road, Wood River, NE 68883 Phone: 308-385-1200 Fax: 308-385-9990 <input type="checkbox"/>	<b>Green Plains York LLC</b> 1414 County Rd O York, NE 68467 Phone: 402-362-2285 Fax: 402-362-7041 <input type="checkbox"/>			
<b>Green Plains Grain Company LLC. Archer</b> 2132 Archer Road Archer, NE 68816 Phone: 308-795-2211 <input type="checkbox"/>	<b>Green Plains Grain Company LLC. Cimarron</b> 19016 Road I Kismet, KS 67859 Phone: 620-624-6296 Fax: 620-624-4411 <input type="checkbox"/>	<b>Green Plains Grain Company LLC. Essex</b> 411 North Street, Essex, IA 51638 Phone: 712-379-3155 Fax: 712-379-3175 <input type="checkbox"/>	<b>Green Plains Grain Company LLC. Hopkins</b> 200 N. Railroad Hopkins, MO 64461 Phone: 660-778-3331 Fax: 660-778-3676 <input type="checkbox"/>	

**CHEMTREC PHONE (24HR Emergency Telephone):** 1-800-424-9300 (Within U.S.A)

**INTERNATIONAL CHEMTREC CALL:** 1-703-527-3887

**OTHER CALLS:** 1-402-884-8700 (M-F; 6AM-4PM; Central Time (U.S.A &Canada); Within U.S.A)

**FAX PHONE:** 1-402-884-8776 (M-F, 8 AM-5 PM, Central time (U.S.A & Canada); within U.S.A)

**SECTION 1 NOTES:** None Available

### SECTION 2: HAZARDS IDENTIFICATION

**GHS LABELING AND CLASSIFICATION:** This product meets the definition of the following hazard classes as defined by the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).



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### GHS CLASSIFICATION ACCORDING TO ANNEX II:

HEALTH	ENVIRONMENTAL	PHYSICAL
Skin corrosion/irritation-3 Mild skin irritation Serious eye damage/eye irritation-2B Mild irritation	Not classified	Not classified
<b>SIGNAL WORD:</b>		<b>WARNING</b>
<b>SYMBOL:</b>		None
<b>HAZARD STATEMENT:</b>		H316:Causes mild skin irritation H320:Causes eye irritation
<b>PRECAUTIONARY STATEMENTS:</b>	<b>PREVENTIVE:</b>	P102:Keep out of reach of children P103:Read label before use
	<b>RESPONSE:</b>	P337+P313:If eye irritation persists: Get medical advice/attention P337+P338+P351: If eye irritation persists, remove contact lenses, if present and easy to do. Rinse cautiously with water for several minutes P332+P313 :If skin irritation occurs: Get medical advice/attention
	<b>STORAGE:</b>	Not specified
	<b>DISPOSAL:</b>	P501:Dispose of contents/container to relevant local and national regulations

**Any Regional Considerations:** N/A

**SECTION 2 NOTES:** None Available

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

**CHEMICAL NAME:** Bio-culture  
**COMMON NAME:** Methanator bugs  
**CHEMICAL FAMILY:** Anaerobic bacteria  
**CHEMICAL FORMULA:** Not available  
**SYNONYMS:** Not Available

**INGREDIENT:** Anaerobic bacteria  
 Water

NAME	CAS#	EC#	ICSC#	% WT	% VOL
Anaerobic bacteria/water	N/A	N/A	N/A	N/A	N/A

**CARCINOGENICITY:** NO  
**OSHA:** NO DATA  
**OTHER:** Unknown

**ACGIH:** NO DATA

**NTP:** NO DATA

**IARC:** NO DATA

**IMPURITIES/STABILIZING ADDITIVES IDENTIFICATION:** Not applicable

**IMPURITIES/STABILIZING ADDITIVES CLASSIFICATION (if applicable):** N/A

**SECTION 3 NOTES:** None Available

### SECTION 4: FIRST AID MEASURES

*Contaminated individuals of chemical exposure must be taken for medical attention if any adverse effect occurs. Rescuers should be taken for medical attention, if necessary. Take copy of label and MSDS to health professional with contaminated individual.*

**EMERGENCY OVERVIEW:** Avoid physical contact; flush contaminated body part with large amount of clean water immediately

#### ROUTES OF ENTRY/FIRST AID:

**EYES CONTACT:** Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Get medical attention.

**SKIN CONTACT:** May be harmful in contact with skin. In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention. In case of serious skin contact, wash with a disinfectant soap and voer the contaminated skin with an anti-bacterial cream. Seek medical attention.



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**INHALATION:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms appear. In case of serious inhalation, evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

**INGESTION:** Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

**ACUTE HEALTH HAZARDS:** Unknown

**CHRONIC HEALTH HAZARDS:** Unknown

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:** Unknown

**NOTES TO PHYSICIANS OR FIRST AID PROVIDERS:** N/A

**SECTION 4 NOTES:** None Available

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## SECTION 5: FIRE-FIGHTING MEASURES

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**EXTINGUISHING MEDIA:** Water

**PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHTERS:** None

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** None; non-hazardous  
*(Define specific hazards arising from the chemical e.g., nature of any hazardous combustion products)*

**HAZARDOUS DECOMPOSITION PRODUCTS:** N/A

**FLAMMABLE LIMITS IN AIR (% by volume):**

UPPER: N/A  
LOWER: N/A

**FLASH POINT:**N/A

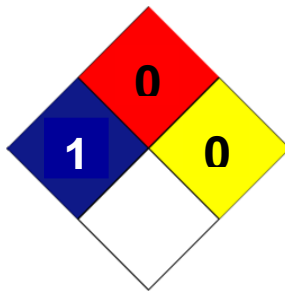
F:  
C:

**METHOD USED:** N/A

**AUTOIGNITION TEMPERATURE:** N/A

F:  
C:

**NFPA HAZARD CLASSIFICATION:**



HEALTH=1  
FLAMMABILITY=0  
REACTIVITY=0  
OTHER=N/A

**HMS HAZARD CLASSIFICATION (0-4 scale):**

Bio-culture	
HEALTH	1
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	B
Safety glasses; gloves	

**SECTION 5 NOTES:** None Available

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

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**PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:** Avoid physical contact



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**ENVIRONMENTAL PRECAUTIONS:** N/A

**METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP:** May mop up spills; may flush down sanitary drain into waste water treatment lines.

**SECTION 6 NOTES:** None Available

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## SECTION 7: HANDLING AND STORAGE

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**PRECAUTION FOR SAFE HANDLING:** Avoid eye contact

**CONDITIONS FOR SAFE STORAGE (any incompatibilities):** Avoid excessive heat; store finished product in a cool or cold, dry place; store concentrate in a refrigerated area; avoid direct sunlight

**SECTION 7 NOTES:** None Available

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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**EXPOSURE LIMITS/GUIDELINES:** For external use only; if taken internally may cause intestinal upset; if taken internally, DO NOT INDUCE VOMITING

INGREDIENTS	ACGIH	NIOSH	OSHA-FINAL PELs
Anaerobic Bacteria/water	N/A	N/A	N/A

**ENGINEERING CONTROLS:** N/A

**VENTILATION:** No Special Requirements

**PERSONAL PROTECTIVE EQUIPMENT (PPE):**

**RESPIRATORY PROTECTION:** None Required

**EYE PROTECTION:** Safety Glasses and/or Goggles required

**SKIN PROTECTION:** Rubber Gloves recommended

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT:** None Required

**SECTION 8 NOTES:** None Available

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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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**APPEARANCE:** Gray-Black Liquid

**PHYSICAL STATE:** Liquid

**COLOR:** Gray-black

**ODOR:** Slight Sulfur Odor

**pH AS SUPPLIED:** 8.8-7.2

**pH (Other):**

**FREEZING POINT:**

**F:** 32°F

**C:** 0°C

**BOILING POINT:**

**F:** 212°F

**C:** 100°C

**MELTING POINT:** N/A

**F:**



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C:

FLASH POINT: Not applicable

F:  
C:

EVAPORATION RATE: Equivalent to water  
BASIS (=1):

FLAMMABILITY (by %volume): Non-flammable  
UPPER FLAMMABILITY LIMIT: N/A  
LOWER FLAMMABILITY LIMIT: N/A

VAPOR PRESSURE (mmHg): Equivalent to water  
@

F:  
C:

VAPOR DENSITY (AIR = 1): Equivalent to water  
@

F:  
C:

SOLUBILITY IN WATER: Complete

PARTITION COEFFICIENT n-octanol/water: N/A

AUTO-IGNITION TEMPERATURE: N/A

F:  
C:

DECOMPOSITION TEMPERATURE: N/A

F:  
C:

SPECIFIC GRAVITY (H2O = 1): Approximately 1  
@

F: Ambient Temperature  
C: Ambient Temperature

PERCENT SOLIDS BY WEIGHT: Unknown

PERCENT VOLATILE: N/A  
BY WT/BY VOL @

F:  
C:

VOLATILE ORGANIC COMPOUNDS (VOC): NONE  
WITH WATER: LBS/GAL  
WITHOUT WATER: LBS/GAL

MOLECULAR WEIGHT: Not Applicable

VISCOSITY: No Data  
@

F:  
C:

SECTION 9 NOTES: None Available

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY: No reaction with most chemicals; product is anaerobic bacteria

STABILITY: Stable

CONDITIONS TO AVOID (STABILITY): Excessive heat; strong acids or bases and bacterial compounds



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**POSSIBILITY OF HAZARDOUS REACTIONS:** N/A

**INCOMPATIBILITY MATERIAL:** Not compatible with strong acids or bases or bacterial compounds

**HAZARDOUS DECOMPOSITION PRODUCTS:** N/A

**SECTION 10 NOTES:** None Available

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### SECTION 11: TOXICOLOGICAL INFORMATION

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**TOXICOLOGICAL INFORMATION:** Unknown

**ROUTES OF EXPOSURE:**N/A

**SYMPTOMS RELATED TO THE PHYSICAL, CHEMICAL AND TOXICOLOGICAL CHARACTERISTICS:**

**CONTACT WITH EYES:** May be irritating to the eyes

**CONTACT WITH SKIN:** May produce an allergic reaction

**INHALATION:** N/A

**INGESTION:** Product is for external use only; if taken internally call Doctor immediately. DO NOT INDUCE VOMITING

**DELAYED AND IMMEDIATE EFFECTS AND ALSO CHRONIC EFFECTS FROM SHORT- AND LONG-TERM EXPOSURE:** No Data

**NUMERICAL MEASURES OF TOXICITY:**

**LD50/LC50:** No data available

**IRRITATION DATA:** No data available

**CARCINOGENICITY:** No data available

**EPIDEMIOLOGY:** No data available

**TERATOGENICITY:** No data available

**REPRODUCTIVE EFFECTS:** No data available

**NEUROTOXICITY:** No data available

**MUTAGENICITY:** No data available

**OTHER:** No data available

**SECTION 11 NOTES:** None Available.

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### SECTION 12: ECOLOGICAL INFORMATION

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**ECOTOXICITY (AQUATIC AND TERRESTRIAL, WHERE AVAILABLE):** Not applicable

**PERSISTENCE AND DEGRADABILITY:** All ingredients are organic and completely biodegradable

**BIOACCUMULATIVE POTENTIAL:** No

**MOBILITY IN SOIL:** Anaerobic bacteria will be deactivated in exposure of oxygen in air

**OTHER ADVERSE EFFECTS:** No data

**SECTION 12 NOTES:** None Available

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### SECTION 13: DISPOSAL CONSIDERATIONS

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**DISPOSAL METHOD:** Comply with all local, State, and Federal Regulations

**RCRA HAZARD CLASS:** N/A



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**DESCRIPTION OF WASTE RESIDUES AND INFORMATION ON THEIR SAFE HANDLING AND METHODS OF DISPOSAL, INCLUDING ANY CONTAMINATED PACKAGING:** Anaerobic bacteria will die off in exposure to oxygen in air; Do not reuse container. Dispose of container in accordance with all Local, State and Federal Regulations

**SECTION 13 NOTES:** None Available

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### SECTION 14: TRANSPORT INFORMATION

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#### U.N. GHS TRANSPORT REQUIREMENT

**UN NUMBER:** N/A  
**PROPER SHIPPING NAME:** Bio-culture  
**TRANSPORT HAZARD CLASS:** N/A  
**PACKING GROUP:** N/A  
**LABEL STATEMENT:** N/A  
**MARINE POLLUTANT:** NO

**SPECIAL PRECAUTIONS FOR USER:** Avoid eye contact

**SECTION 14 NOTES:** None Available

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### SECTION 15: REGULATORY INFORMATION

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#### U.S. FEDERAL REGULATIONS

**TOXIC SUBSTANCE CONTROL ACT (TSCA):** N/A

**OCCUPATIONAL, SAFETY AND HEALTH ADMINISTRATION (OSHA):** N/A

**COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT (CERCLA):** N/A

**CLEAN WATER ACT (CWA):** N/A

**CLEAN AIR ACT (CAA):** N/A

**SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA) TITLE III INFORMATION:**

**SARA SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES:** N/A

**SARA SECTION 311/312 (40 CFR 370) HAZARD CATEGORIES:** N/A

**SARA 313 REPORTABLE INGREDIENTS:** N/A

**STATE REGULATIONS:** N/A

**INTERNATIONAL REGULATIONS:** N/A

**SECTION 15 NOTES:** None Available

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### SECTION 16: OTHER INFORMATION

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**DISCLAIMER:** The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Green Plains Inc. be liable for any claims, losses or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Green Plains Inc. has been advised of the possibility of such damages.

#### REFERENCES:

GHS Annex II  
GHS SDS Instruction

#### ACRONYMS/ABBREVIATIONS:

ACGIH-American Conference of Governmental Industrial Hygienists  
CAA-Clean Air Act  
CAS-Chemical Abstracts Service



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CERCLA-Comprehensive Response Compensation and Liability Act  
CHEMTREC-It serves as a round-the-clock resource for obtaining immediate response information for incidents involving hazardous material and dangerous goods.  
CWA-Clean Water Act  
EC-European Commission  
GHS-Globally Harmonized System of Classification and Labeling of Chemicals  
IARC-International Agency for the Research on Cancer  
ICSC-International Chemical Safety Cards  
LC50-The concentration of a chemical in air or of a chemical in water which causes the death of 50% of a group of test animals.  
LD50-The amount of a chemical, given all at once, which causes the death of 50% of a group of test animals.  
N/A-Not Applicable  
NIOSH-The National Institute for Occupational Safety and Health  
NTP-National Toxicology Program  
OSHA-Occupational Safety and Health Administration  
RCRA-Resource Conservation and Recovery Act  
SARA-Superfund Amendments and Reauthorization Act  
STOST-SE-Specific Target Organ Toxicity Single Exposure  
TSCA-Toxic Substance Control Act  
U.N.-United Nation  
UNCED-United Nations Conference on Environment and Development  
VOL-Volume  
WT-Weight