



# Green Plains

## GHS SAFETY DATA SHEET

MODIFIED DISTILLER GRAIN

SDS DATE: 04/17/2019

### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME (GHS Product Identifier):** Modified Distillers Dried Grains with Solubles  
**(Other means of Identification):** MDDGS, Modified feed

**PRODUCT INTENDED USE AND RESTRICTION:** Animal feed additive

**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 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 checked="" type="checkbox"/>	<b>Green Plains Fairmont LLC.</b> 1125 N Bixby Road, Fairmont, MN 56031 Phone: 507-238-3600 Fax: 507-238-3624 <input checked="" type="checkbox"/>	<b>Green Plains Hereford LLC</b> 4300 County Road 8 Hereford, TX 79045 Phone: 806-258-7800 Fax: 806-258-7801 <input checked="" type="checkbox"/>	<b>Green Plains Madison LLC</b> 395 Bissell St Madison, IL 63060 Phone: 618-451-4420 Fax: 618-452-8946 <input checked="" 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 checked="" 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 checked="" type="checkbox"/>	<b>Green Plains Ord LLC.</b> 48267 Val-E Road, Ord, NE 68862 Phone: 308-496-4823 Fax: 308-496-4890 <input checked="" 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 checked="" type="checkbox"/>	<b>Green Plains Shenandoah LLC.</b> 4124 Airport Rd., Shenandoah, IA 51601 Phone: 712-246-2932 Fax: 712-246-3988 <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 checked="" 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 checked="" type="checkbox"/>	<b>Green Plains York LLC</b> 1414 County Rd O York, NE 68467 Phone: 402-362-2285 Fax: 402-362-7041 <input checked="" type="checkbox"/>	<input type="checkbox"/>	<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"/>	<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, 8 AM-5 PM, 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 Labeling of Chemicals (GHS).

#### GHS CLASSIFICATION ACCORDING TO ANNEX II:

HEALTH	ENVIRONMENTAL	PHYSICAL
Not classified	Not classified	Not classified
<b>SIGNAL WORD:</b>		<b>NONE</b>
<b>SYMBOL:</b>		N/A
<b>HAZARD STATEMENT:</b>		None
<b>PRECAUTIONARY STATEMENTS:</b>	<b>PREVENTIVE:</b>	N/A
	<b>RESPONSE:</b>	N/A



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	<b>STORAGE:</b>	N/A
	<b>DISPOSAL:</b>	N/A

**Any Regional Considerations:** N/A

**SECTION 2 NOTES:** None Available

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

	<b>Corn syrup</b> CAS#: 8029-43-4	<b>Distillers grains</b> CAS#: N/A	<b>Water</b> CAS#: 7732-18-5
<b>CHEMICAL NAME</b>	Corn syrup	Distillers grains	Water
<b>COMMON NAME</b>	Corn syrup	Distillers grains	Water
<b>CHEMICAL FAMILY</b>	Corn syrup	Distillers grains	Hydrocarbon
<b>CHEMICAL FORMULA</b>	C <sub>6</sub> H <sub>12</sub> O <sub>6</sub>	N/A	H <sub>2</sub> O
<b>SYNONYMS</b>	Glucose syrup, syrup	Distillers grains	water

**INGREDIENT:** Distillers grains, syrup, water

NAME	CAS#	EC#	ICSC#	% WT	% VOL
Syrup	8029-43-4	232-436-4	N/A	About 60.0%	N/A
Distillers grains	N/A	N/A	N/A	About 45.0%	N/A
Water	7732-18-5	231-791-2	N/A	About 24.0%	N/A

**CARCINOGENICITY**

OSHA: NO  
OTHER: N/A

ACGIH: NO

NTP: NO

IARC: NO

**IMPURITIES/STABILIZING ADDITIVES IDENTIFICATION:** N/A

**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:** Slightly acidic. Minimal health effects upon exposure or ingestion; modified distillers grains are an animal feed product.

**ROUTES OF ENTRY/FIRST AID:** Ingestion, eye contact

**EYES CONTACT:** Flush eyes with plenty of clean water for 15 minutes while holding eyelids open, occasionally lifting the upper and lower eyelids. Check for, and remove, any contact lens. Do not use an eye ointment. Consult a physician if irritation persists after flushing eyes

**SKIN CONTACT:** Flush contaminated area with plenty of water. If irritation persists, seek medical attention

**INHALATION:** Dust from this product is categorized as a nuisance particulate. May cause irritation upon respiration; Remove victim to fresh air.

**INGESTION:** No hazard unless ingested in such quantities as to interfere with normal digestion. Do not induce vomiting. Seek medical attention if discomfort persists.

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:** Asthmatic reactions via allergic mechanism, particularly in individuals who are predisposed to developing allergies

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

**SECTION 4 NOTES:** Wash contaminated clothing before reusing.

### SECTION 5: FIRE-FIGHTING MEASURES

**EXTINGUISHING MEDIA:** Use appropriate extinguishing media for surrounding fire



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**PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHTERS:** N/A

**UNUSUAL FIRE AND EXPLOSION HAZARDS:**

*(Define specific hazards arising from the chemical e.g., nature of any hazardous combustion products)*  
Fugitive grain dust is combustible and can present an explosion hazard

**HAZARDOUS DECOMPOSITION PRODUCTS:** Carbon oxides including carbon monoxide and carbon dioxide

**FLAMMABLE LIMITS IN AIR (% by volume):** N/A

**UPPER LIMIT:**  
**LOWER LIMIT:**

**FLASH POINT:** N/A

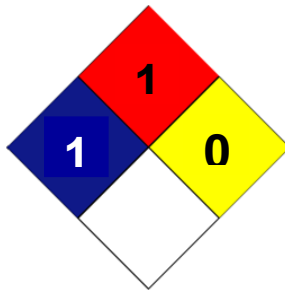
**F:**  
**C:**

**METHOD USED:** N/A

**AUTOIGNITION TEMPERATURE:** N/A

**F:**  
**C:**

**NFPA HAZARD CLASSIFICATION:**



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

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

Modified Distiller Grain	
HEALTH	1
FLAMMABILITY	1
PHYSICAL HAZARD	0
PERSONAL PROTECTION	B
Safety glasses, gloves	

**SECTION 5 NOTES:** Respiratory and eye protection required for firefighting personnel

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

**PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:** Wear appropriate PPEs.

**ENVIRONMENTAL PRECAUTIONS:** Keep the product away from sewer, and natural water bodies

**METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP:** For land spill, eliminate ignition sources; isolate hazard area; remove spilled material so as to avoid creating airborne dust. For water spill, small spills will dilute naturally with the water and biodegrade.

**SECTION 6 NOTES:** None Available

**SECTION 7: HANDLING AND STORAGE**

**PRECAUTION FOR SAFE HANDLING:** Use appropriate personal protective equipment. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands after handling.

**CONDITIONS FOR SAFE STORAGE (any incompatibilities):** Store in accordance with local and state regulations. Keep away from heat, flame or sparks. Use appropriate containments to avoid environmental contamination.

**SECTION 7 NOTES:** None Available

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**



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**EXPOSURE LIMITS/GUIDELINES:**

INGREDIENTS	ACGIH	NIOSH	OSHA-FINAL PELs
Modified Distillers Grain	4 mg/m <sup>3</sup> TLV	4 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>

**ENGINEERING CONTROLS:** Provide exhaust ventilation or other engineering controls if necessary while handling to keep the airborne concentrations of dust below their respective threshold limit value

**VENTILATION:** Work with the product in a well ventilate area

**PERSONAL PROTECTIVE EQUIPMENT (PPE):**

**EYE PROTECTION:** Use eye protection when working with the product. The wearing of contact lens while working with the material is discouraged

**SKIN PROTECTION:** Use gloves when working with the product. Long sleeved shirts and long pants recommended

**RESPIRATORY PROTECTION:** Use appropriate personal protective equipment if exposure is irritating to the eyes, lungs or skin

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT:** N/A

**SECTION 8 NOTES:** Eating, drinking and smoking while working with the product, or in the area the product is handled, stored or processed. Wash hands thoroughly after handling

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**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

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**APPEARANCE:** Tan colored, moist granular solid

**PHYSICAL STATE:** Solid

**COLOR:** Tan colored

**ODOR:** Slight characteristic toasted/cooked corn odor/slightly sweet

**pH AS SUPPLIED:** 3 to 4

**pH (Other):**

**FREEZING POINT:** N/A

F:  
C:

**BOILING POINT:** N/A

F:  
C:

**MELTING POINT:** N/A

F:  
C:

**FLASH POINT:** N/A

F:  
C:

**EVAPORATION RATE (BASIS=1):**

**FLAMMABILITY (by %volume):** N/A

**UPPER FLAMMABILITY LIMIT:**  
**LOWER FLAMMABILITY LIMIT:**

**VAPOR PRESSURE (mmHg):** N/A

@  
F:  
C:

**VAPOR DENSITY (AIR = 1):** N/A

@  
F:



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C:

**SOLUBILITY IN WATER:** Insoluble

**PARTITION COEFFICIENT n-octanol/water:** N/A

**AUTO-IGNITION TEMPERATURE:** N/A

F:  
C:

**DECOMPOSITION TEMPERATURE:** N/A

F:  
C:

**SPECIFIC GRAVITY (H<sub>2</sub>O = 1):** N/A

@  
F:  
C:

**PERCENT SOLIDS BY WEIGHT:** approximately 45%

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

F:  
C:

**VOLATILE ORGANIC COMPOUNDS (VOC):** N/A  
**WITH WATER:** LBS/GAL  
**WITHOUT WATER:** LBS/GAL

**MOLECULAR WEIGHT:** N/A

**VISCOSITY:** N/A

@  
F:  
C:

**SECTION 9 NOTES:** None Available

## SECTION 10: STABILITY AND REACTIVITY

**REACTIVITY:** Stable under normal conditions

**STABILITY:** This product is stable. The product will lose moisture if not stored in a sealed container. It is susceptible to microbial growth with prolonged storage

**CONDITIONS TO AVOID (STABILITY):** N/A

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

**INCOMPATIBILITY MATERIAL:** N/A

**HAZARDOUS DECOMPOSITION PRODUCTS:** Burning can produce carbon monoxide and/or carbon dioxide

**SECTION 10 NOTES:** None Available

## SECTION 11: TOXICOLOGICAL INFORMATION

**TOXICOLOGICAL INFORMATION:** The toxicity data of this product has not been determined by testing or research, but to our best knowledge, this product is non-toxic.

**ROUTES OF EXPOSURE:** Ingestion, contact with eyes

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

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



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**CONTACT WITH SKIN:** Distillation byproducts in the feed may produce allergic skin reactions, including redness and/or itching in sensitive individuals

**INHALATION:** Prolonged exposure to the grain in dry form may cause wheezing, chest tightness, productive cough, and symptoms of chronic respiratory disease.

**INGESTION:** Material is non-toxic by ingestion, unless ingested in such quantities as to interfere with normal digestion

**DELAYED AND IMMEDIATE EFFECTS AND ALSO CHRONIC EFFECTS FROM SHORT- AND LONG-TERM EXPOSURE:**

**ACUTE HEALTH HAZARDS:** Grain in dry form may also induce asthmatic reactions via allergic mechanism, particularly in individuals who are predisposed to developing allergies

**CHRONIC HEALTH HAZARDS:** Asthma, bronchitis, chronic obstructive pulmonary disease, conjunctivitis, dermatitis, rhinitis, or grain fever from exposure to dust from wet cake if allowed to dry out and become airborne

**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):** When spilled on land, Modified Dried Distillers Grains is expected to biodegrade. Products of biodegrading are expected to be short chained alcohols, aldehydes, fatty acids and carbon dioxide.

**PERSISTENCE AND DEGRADABILITY:** Biodegradable

**BIOACCUMULATIVE POTENTIAL:** Not expect to bio-accumulate

**MOBILITY IN SOIL:** N/A

**OTHER ADVERSE EFFECTS:** N/A

**SECTION 12 NOTES:** None Available

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**SECTION 13: DISPOSAL CONSIDERATIONS**

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**DISPOSAL METHOD:** Waste disposal should be in accordance with local, state and federal regulations

**RCRA HAZARD CLASS:** N/A

**DESCRIPTION OF WASTE RESIDUES AND INFORMATION ON THEIR SAFE HANDLING AND METHODS OF DISPOSAL, INCLUDING ANY CONTAMINATED PACKAGING:** N/A

**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



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**PROPER SHIPPING NAME:** Modified Distiller Grain  
**TRANSPORT HAZARD CLASS:** N/A  
**PACKING GROUP:** N/A  
**LABEL STATEMENT:** N/A  
**MARINE POLLUTANT:** N/A

**SPECIAL PRECAUTIONS FOR USER:** N/A

**SECTION 14 NOTES:** Due to the oil and moisture content, the International Maritime Dangerous Goods (IMDG) Code have traditionally considered DDGS as hazardous and classified as Class 4.2 under Seedcake UN 1386 (a) and (b). In 2010, the US submitted to the IMO Sub-Committee on Dangerous Goods, Solid Cargo and Containers (DSC) a recommendation that DDG be carried as a grain and DDGS as non-hazardous cargo (Group C) in accordance with the provisions of the IMSBC Code. The proposal was accepted and DDGS was classified as non-hazardous material for the IMBSC providing it has an oil content of not more than 11% and a moisture content of not more than 12%.

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## SECTION 15: REGULATORY INFORMATION

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### U.S. FEDERAL REGULATIONS

**TOXIC SUBSTANCE CONTROL ACT (TSCA):** All components of this product are exempt from listing in the TSCA Inventory

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

**COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT (CERCLA):** Not listed

**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
- 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.



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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  
RQ-Reportable Quantity  
SARA-Superfund Amendments and Reauthorization Act  
STOST-SE-Specific Target Organ Toxicity Single Exposure  
TPQ-Threshold Planning Quantity  
TSCA-Toxic Substance Control Act  
U.N.-United Nation  
UNCED-United Nations Conference on Environment and Development  
VOL-Volume  
WT-Weight