



**Green Plains**  
**GHS SAFETY DATA SHEET**  
 DRY DISTILLERS GRAIN

SDS DATE: 04/17/2019

**SECTION 1: PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NAME (GHS Product Identifier):** Dry Distillers Grains  
**(Other means of Identification):** DDGS

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

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

|  |  |  |   |   |
|--|--|--|---|---|
| <b>Green Plains Atkinson LLC.</b><br>87590 Hill Crest Rd.<br>Atkinson, NE 68713<br>P.O. Box 391, Atkinson, NE 68713<br>Phone: 402-925-5570<br>Fax: 402-925-2988<br><input checked="" type="checkbox"/> | <b>Green Plains Central City LLC.</b><br>214 20 <sup>th</sup> St.,<br>Central City, NE 68826<br>Phone: 308-946-9700<br>Fax: 308-946-2623<br><input checked="" type="checkbox"/>            | <b>Green Plains Fairmont LLC.</b><br>1125 N Bixby Road,<br>Fairmont, MN 56031<br>Phone: 507-238-3600<br>Fax: 507-238-3624<br><input checked="" type="checkbox"/> | <b>Green Plains Hereford LLC</b><br>4300 County Road 8<br>Hereford, TX 79045<br>Phone: 806-258-7800<br>Fax: 806-258-7801<br><input checked="" type="checkbox"/>       | <b>Green Plains Madison LLC</b><br>395 Bissell St<br>Madison, IL 63060<br>Phone: 618-451-4420<br>Fax: 618-452-8946<br><input checked="" type="checkbox"/>           |
| <b>Green Plains Mt Vernon LLC</b><br>8999 W Franklin Rd<br>Mt Vernon, IN 47620<br>Phone: 812-985-4023<br>Fax: 812-985-9983<br><input checked="" type="checkbox"/>                                      | <b>Green Plains Obion LLC.</b><br>2098 McDonald Rd.,<br>Rives, TN 38253/P.O. Box 95,<br>Obion, TN 38240<br>Phone: 731-536-1286<br>Fax: 731-536-1434<br><input checked="" type="checkbox"/> | <b>Green Plains Ord LLC.</b><br>48267 Val-E Road,<br>Ord, NE 68862<br>Phone: 308-496-4823<br>Fax: 308-496-4890<br><input checked="" type="checkbox"/>            | <b>Green Plains Otter Tail LLC.</b><br>24096 170th Ave., Fergus Falls,<br>MN 56537<br>Phone: 218-998-4301<br>Fax: 218-998-4302<br><input checked="" type="checkbox"/> | <b>Green Plains Shenandoah LLC.</b><br>4124 Airport Rd.,<br>Shenandoah, IA 51601<br>Phone: 712-246-2932<br>Fax: 712-246-3988<br><input checked="" type="checkbox"/> |
| <b>Green Plains Superior LLC.</b><br>1495 320th Ave,<br>Superior, IA 51363<br>Phone: 712-858-4666<br>Fax: 712-858-4684<br><input checked="" type="checkbox"/>  | <b>Green Plains Wood River LLC.</b><br>7874 South 140th Road,<br>Wood River, NE 68883<br>Phone: 308-385-1200<br>Fax: 308-385-9990<br><input checked="" type="checkbox"/>                   | <b>Green Plains York LLC</b><br>1414 County Rd O<br>York, NE 68467<br>Phone: 402-362-2285<br>Fax: 402-362-7041<br><input checked="" type="checkbox"/>            |   |   |
| <b>Green Plains Grain Company LLC. Archer</b><br>2132 Archer Road<br>Archer, NE 68816<br>Phone: 308-795-2211<br><input type="checkbox"/>   | <b>Green Plains Grain Company LLC. Cimarron</b><br>19016 Road I<br>Kismet, KS 67859<br>Phone: 620-624-6296<br>Fax: 620-624-4411<br><input type="checkbox"/>                                | <b>Green Plains Grain Company LLC. Essex</b><br>411 North Street,<br>Essex, IA 51638<br>Phone: 712-379-3155<br>Fax: 712-379-3175<br><input type="checkbox"/>     | <b>Green Plains Grain Company LLC. Hopkins</b><br>200 N. Railroad<br>Hopkins, MO 64461<br>Phone: 660-778-3331<br>Fax: 660-778-3676<br><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            |



# Green Plains

## GHS SAFETY DATA SHEET

DRY DISTILLERS GRAIN

SDS DATE: 04/17/2019

|  |                  |     |
|--|------------------|-----|
|  | <b>RESPONSE:</b> | N/A |
|  | <b>STORAGE:</b>  | N/A |
|  | <b>DISPOSAL:</b> | N/A |

**Any Regional Considerations:** DDGS is considered non-hazardous. N/A

**SECTION 2 NOTES:** Concentrated DDGS dust in air suspension may become explosive under confined conditions.

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

**CHEMICAL NAME:** N/A  
**COMMON NAME:** Distillers grains  
**CHEMICAL FAMILY:** N/A  
**CHEMICAL FORMULA:** N/A  
**SYNONYMS:** N/A

**INGREDIENT:** Distillers grains, water

| NAME              | CAS#      | EC#       | ICSC# | % WT  | % VOL |
|-------------------|-----------|-----------|-------|-------|-------|
| Distillers grains | N/A       | N/A       | N/A   | 90.0% | N/A   |
| Water             | 7732-18-5 | 231-791-2 | N/A   | 10.5% | N/A   |

**CARCINOGENICITY**

**OSHA:** NO      **ACGIH:** NO      **NTP:** NO      **IARC:** NO  
**OTHER:** N/A

**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:** Material is dried grain derivative of the alcohol distillation process. Inhalation of fines in the dust may cause an allergic reaction in sensitive individuals (pneumoconiosis)

**ROUTES OF ENTRY/FIRST AID:** Inhalation and ingestion

**EYES CONTACT:** Flush with water for at least 15 minutes while holding eye lids apart. Check for and remove any contact lens. Do not use an eye ointment. Consult a physician if irritation persists after flushing water

**SKIN CONTACT:** If irritation persists, seek medical attention. Wash contaminated clothing before reusing

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

**INGESTION:** No acute hazard would be posed from ingestion of product. Do not induce vomiting.

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:** Allergies, pre-existing lung conditions or asthma

**NOTES TO PHYSICIANS OR FIRST AID PROVIDERS:** Dry distillers grains are an animal feed product. Health effects upon exposure or ingestion are expected to be minimal.

**SECTION 4 NOTES:** None Available

### SECTION 5: FIRE-FIGHTING MEASURES

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

**PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHTERS:** Respiratory and eye protection required for fire-fighting personnel. Full protective equipment and a full face-piece self-contained breathing apparatus in pressure demand mode should be used for all



# Green Plains

## GHS SAFETY DATA SHEET

DRY DISTILLERS GRAIN

SDS DATE: 04/17/2019

indoor fires and any significant outdoor fires. For small outdoor fires, which may easily be extinguished with a portable fire extinguisher, use of an SCBA may not be required.

**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. Avoid the use of compressed air to blow dust from ledges, walls, and other areas when there are ignition sources in the area.

**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

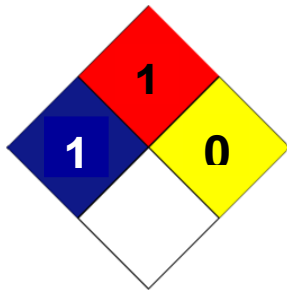
**F:**  
**C:**

**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):**

|                        |   |
|------------------------|---|
| Dry Distillers Grain   |   |
| HEALTH                 | 1 |
| FLAMMABILITY           | 1 |
| PHYSICAL HAZARD        | 0 |
| PERSONAL PROTECTION    | B |
| Safety glasses, gloves |   |

**SECTION 5 NOTES:** None Available

**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 and deny entry to unauthorized or unprotected personnel; remove spilled material so as to avoid creating airborne dust. Spilled waste material is combustible but is not classified as a hazardous material. For water spill, small spills will dilute naturally with the water and will 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 incompatible materials. Keep away from heat, flame or sparks. Use appropriate containments to avoid environmental contamination.

**SECTION 7 NOTES:** Storage temperature: ambient air temperature; Storage pressure: ambient atmosphere pressure



# Green Plains

## GHS SAFETY DATA SHEET

DRY DISTILLERS GRAIN

SDS DATE: 04/17/2019

### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**EXPOSURE LIMITS/GUIDELINES:**

| INGREDIENTS          | ACGIH                   | NIOSH               | OSHA-FINAL PELs      |
|----------------------|-------------------------|---------------------|----------------------|
| Dry 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 to keep the airborne concentration of dust below their respective threshold limit value. Ensure that eyewash station and/or safety shower is available.

**VENTILATION:** Provide exhaust ventilation or other engineering controls to keep the airborne concentration of dust below their respective threshold limit value. Ensure that eyewash station and/or safety shower is available.

**PERSONAL PROTECTIVE EQUIPMENT (PPE):**

**EYE PROTECTION:** Safety glasses or goggles; Do not wear contacts when working with this material.

**SKIN PROTECTION:** Clean body covering as needed.

**RESPIRATORY PROTECTION:** Provide a NIOSH/MSHA approved respirator or dust mask if exposure limits are exceeded.

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

**SECTION 8 NOTES:** None Available

### SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

**APPEARANCE:** Straw yellow granular

**PHYSICAL STATE:** solid

**COLOR:** Straw yellow

**ODOR:** Characteristic fermentation odor

**pH AS SUPPLIED:** N/A

**pH (Other):** N/A

**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):** Negligible

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

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

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

@  
F:  
C:



# Green Plains

## GHS SAFETY DATA SHEET

DRY DISTILLERS GRAIN

SDS DATE: 04/17/2019

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

@

F:  
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:** 100.0%

**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:** The product is stable in normal conditions.

**STABILITY:** This product is susceptible to degradation by micro-organisms overtime

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

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

**INCOMPATIBILITY MATERIAL:** Incompatible with strong acids, strong bases, and oxidizing agents

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

**SECTION 10 NOTES:** None Available

### SECTION 11: TOXICOLOGICAL INFORMATION

**TOXICOLOGICAL INFORMATION:** No data available

**ROUTES OF EXPOSURE:** Inhalation, ingestion

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

**CONTACT WITH EYES:** Dust may cause eye irritating to the eyes. Avoid wearing contact lenses if dust conditions are encountered



# Green Plains GHS SAFETY DATA SHEET

DRY DISTILLERS GRAIN

SDS DATE: 04/17/2019

**CONTACT WITH SKIN:** Dust has a slightly acid pH when mixed with water. Distillation byproducts in the dust may produce allergic skin reactions including redness, itching, etc. in sensitive individuals

**INHALATION:** Prolonged exposure to the dust may cause wheezing, chest tightness, productive cough, eye and nasal irritation, and symptoms of chronic respiratory disease. Dust may also induce asthmatic reactions via allergic mechanism, particularly in individuals who are predisposed to developing allergies

**INGESTION:** Material is non-toxic by ingestion

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

**ACUTE HEALTH HAZARDS:** N/A

**CHRONIC HEALTH HAZARDS:** Prolonged or repeated exposure to dust can result in asthma, bronchitis, chronic obstructive pulmonary disease, conjunctivitis, dermatitis, rhinitis, grain fever

## 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):** No data available

**PERSISTENCE AND DEGRADABILITY:** Expect to be biodegradable

**BIOACCUMULATIVE POTENTIAL:** N/A

**MOBILITY IN SOIL:** N/A

**OTHER ADVERSE EFFECTS:** N/A

**SECTION 12 NOTES:** Due to the high content of organics in the product, it is expected to consume massive amount of oxygen once it gets into natural water body. It would result in death of aquatic life.

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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:**

**SECTION 13 NOTES:** None Available

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## SECTION 14: TRANSPORT INFORMATION

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# Green Plains GHS SAFETY DATA SHEET

DRY DISTILLERS GRAIN

SDS DATE: 04/17/2019

## U.N. GHS TRANSPORT REQUIREMENT

**UN NUMBER:** N/A  
**PROPER SHIPPING NAME:** Dried Distillers 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%.

## SECTION 15: REGULATORY INFORMATION

### 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

## SECTION 16: OTHER INFORMATION

**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



# Green Plains

## GHS SAFETY DATA SHEET

DRY DISTILLERS GRAIN

SDS DATE: 04/17/2019

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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.  
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