



Green Plains

GHS SAFETY DATA SHEET

THIN STILLAGE

SDS DATE: 07/29/2020

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME (GHS Product Identifier): Thin Stillage
(Other means of Identification):

PRODUCT INTENDED USE AND RESTRICTION: Product in the ethanol production process

ENTITY CHECKED BELOW:

| | | | | |
|--|--|--|---|---|
| Green Plains Atkinson LLC. 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"/> | Green Plains Central City LLC. 214 20 th St., Central City, NE 68826 Phone: 308-946-9700 Fax: 308-946-9790 <input checked="" type="checkbox"/> | Green Plains Fairmont LLC. 1125 N Bixby Road, Fairmont, MN 56031 Phone: 507-238-3600 Fax: 507-238-3624 <input checked="" type="checkbox"/> | Green Plains Hereford LLC 4300 County Road 8 Hereford, TX 79045 Phone: 806-258-7800 Fax: 806-258-7801 <input checked="" type="checkbox"/> | Green Plains Madison LLC 395 Bissell St Madison, IL 63060 Phone: 618-451-4420 Fax: 618-452-8946 <input checked="" type="checkbox"/> |
| Green Plains Mt Vernon LLC 8999 W Franklin Rd Mt Vernon, IN 47620 Phone: 812-985-7480 Fax: 812-985-7483 <input checked="" type="checkbox"/> | Green Plains Obion LLC. 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"/> | Green Plains Ord LLC. 48267 Val-E Road, Ord, NE 68862 Phone: 308-496-4800 Fax: 308-496-4890 <input checked="" type="checkbox"/> | Green Plains Otter Tail LLC. 24096 170th Ave., Fergus Falls, MN 56537 Phone: 218-998-4301 Fax: 218-998-4302 <input checked="" type="checkbox"/> | Green Plains Shenandoah LLC. 4124 Airport Rd., Shenandoah, IA 51601 Phone: 712-246-2932 Fax: 712-246-3988 <input checked="" type="checkbox"/> |
| Green Plains Superior LLC. 1495 320th Ave, Superior, IA 51363 Phone: 712-858-4666 Fax: 712-858-4684 <input checked="" type="checkbox"/> | Green Plains Wood River LLC. 7874 South 140th Road, Wood River, NE 68883 Phone: 308-385-1200 Fax: 308-385-9990 <input checked="" type="checkbox"/> | Green Plains York LLC 1414 County Rd O York, NE 68467 Phone: 402-362-0088 Fax: 402-362-7041 <input checked="" type="checkbox"/> | | |
| Green Plains Grain Company LLC. Archer 2132 Archer Road Archer, NE 68816 Phone: 308-795-2211 <input type="checkbox"/> | Green Plains Grain Company LLC. Cimarron 19016 Road I Kismet, KS 67859 Phone: 620-624-6296 Fax: 620-624-4411 <input type="checkbox"/> | Green Plains Grain Company LLC. Essex 411 North Street, Essex, IA 51638 Phone: 712-379-3155 Fax: 712-379-3175 <input type="checkbox"/> | Green Plains Grain Company LLC. Hopkins 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, 8 AM-5 PM, Eastern Time (U.S.A & Canada); within U.S.A)

FAX PHONE: 1-402-884-8776 (M-F, 8 AM-5 PM, Eastern 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 Applicable | Not Applicable | Not Applicable |
| SIGNAL WORD: | | NONE |
| SYMBOL: | | Not Applicable |
| HAZARD STATEMENT: | | Not Applicable |



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| | | |
|----------------------------------|--------------------|----------------|
| PRECAUTIONARY STATEMENTS: | PREVENTIVE: | Not Applicable |
| | RESPONSE: | Not Applicable |
| | STORAGE: | Not Applicable |
| | DISPOSAL: | Not Applicable |

Any Regional Considerations: N/A

SECTION 2 NOTES: None Available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME: Thin Stillage
COMMON NAME: N/A
CHEMICAL FAMILY: N/A
CHEMICAL FORMULA: N/A
SYNONYMS: N/A

INGREDIENT: Water; Organics

| NAME | CAS# | EC# | ICSC# | % WT | % VOL |
|----------|-----------|-----------|-------|--------|-------|
| Water | 7732-18-5 | 231-791-2 | None | 97-98% | N/A |
| Organics | N/A | N/A | N/A | 2-3% | N/A |

CARCINOGENICITY

OSHA: NO

ACGIH: NOT LISTED

NTP: NOT LISTED

IARC: NOT LISTED

OTHER: N/A

IMPURITIES/STABILIZING ADDITIVES IDENTIFICATION: N/A

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

SECTION 3 NOTES: Thin stillage is the remainder of grain fermentation residue after distillation, following centrifugation of suspended solids. No ethanol is present. Stillage is 2-3% dissolved organics and 1-5% suspended organic matter in aqueous solution

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: No hazardous components are known to be present

ROUTES OF ENTRY/FIRST AID:

EYES CONTACT: Flush eyes with water

SKIN CONTACT: Wash skin with soap and water

INHALATION: Discontinue ingestion. Seek medical attention if discomfort persists

INGESTION: DO NOT induce vomiting; seek medical attention if necessary

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Some people may experience allergenic symptoms to yeast smell

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: N/A

SECTION 4 NOTES: None Available

SECTION 5: FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA: Use appropriate extinguishing media to put off surrounding fire

PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHTERS: None



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UNUSUAL FIRE AND EXPLOSION HAZARDS: None

(Define specific hazards arising from the chemical e.g., nature of any hazardous combustion products)

HAZARDOUS DECOMPOSITION PRODUCTS: None

FLAMMABLE LIMITS IN AIR (% by volume):

UPPER LIMIT: N/A

LOWER LIMIT: N/A

FLASH POINT: N/A

F:

C:

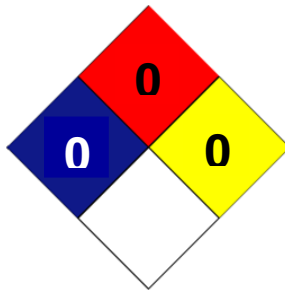
METHOD USED: N/A

AUTOIGNITION TEMPERATURE:

F: N/A

C: N/A

NFPA HAZARD CLASSIFICATION:



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

HMIS HAZARD CLASSIFICATION (0-4 scale):

| | |
|------------------------|---|
| Thin Stillage | |
| HEALTH | 0 |
| FLAMMABILITY | 0 |
| 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 run-offs out of municipal sewers and open bodies of water. Comply with local, state and federal laws and regulations

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP: Isolate the containment area; Keep unauthorized personnel away; Wear appropriate PPEs; use clean water to dilute and wash spilled area

SECTION 6 NOTES: None Available

SECTION 7: HANDLING AND STORAGE

PRECAUTION FOR SAFE HANDLING: Produce might be hot; wear appropriate PPEs

CONDITIONS FOR SAFE STORAGE (any incompatibilities): Store in accordance with local and state regulations. Keep away from incompatible materials. Use appropriate containments to avoid environmental contamination.

SECTION 7 NOTES: None Available

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMITS/GUIDELINES: N/A

| INGREDIENTS | ACGIH | NIOSH | OSHA-FINAL PELs |
|-------------|-------|-------|-----------------|
| Water | N/A | N/A | N/A |



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ENGINEERING CONTROLS:

VENTILATION: N/A

PERSONAL PROTECTIVE EQUIPMENT (PPE):

EYE PROTECTION: Safety goggles or glasses as appropriate for the job

SKIN PROTECTION: Protective gloves of any material appropriate for the job

RESPIRATORY PROTECTION: None

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Safety shoes

SECTION 8 NOTES: None Available

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Tan color

PHYSICAL STATE: Liquid

COLOR: Tan color

ODOR: sweet smell

pH AS SUPPLIED: Variable, usually 6-8

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): N/A

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:

C:

SOLUBILITY IN WATER: N/A

PARTITION COEFFICIENT n-octanol/water: N/A



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AUTO-IGNITION TEMPERATURE: N/A

F:
C:

DECOMPOSITION TEMPERATURE: N/A

F:
C:

SPECIFIC GRAVITY (H2O = 1): N/A

@
F:
C:

PERCENT SOLIDS BY WEIGHT: Approximately 4.0%

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: N/A

STABILITY: Stable

CONDITIONS TO AVOID (STABILITY): Avoid contact with strong oxidizers

POSSIBILITY OF HAZARDOUS REACTIONS: N/A

INCOMPATIBILITY MATERIAL: Contact with oxidizing agents may cause a reaction

HAZARDOUS DECOMPOSITION PRODUCTS: N/A

SECTION 10 NOTES: None Available

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION: This product is not known to have any toxicological effects

ROUTES OF EXPOSURE: Eyes, mouth, inhalation, and skin

SYMPTOMS RELATED TO THE PHYSICAL, CHEMICAL AND TOXICOLOGICAL CHARACTERISTICS:

CONTACT WITH EYES: Generally causes pain, irritation and reflex lid closure

CONTACT WITH SKIN: No irritation is expected

INHALATION: No long term effects expected

INGESTION: N/A

DELAYED AND IMMEDIATE EFFECTS AND ALSO CHRONIC EFFECTS FROM SHORT- AND LONG-TERM EXPOSURE: N/A

NUMERICAL MEASURES OF TOXICITY:



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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

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY (AQUATIC AND TERRESTRIAL, WHERE AVAILABLE): Whole stillage is biodegradable but large quantities may increase BOD in surface waters eventually causing stress or death to fish and other aquatic life

PERSISTENCE AND DEGRADABILITY: Biodegradable

BIOACCUMULATIVE POTENTIAL: Not expect to bioaccumulate

MOBILITY IN SOIL: Mobile

OTHER ADVERSE EFFECTS: N/A

SECTION 12 NOTES: None Available

SECTION 13: DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: All recovered material should be labeled, packaged, transported and disposed of or reclaimed in conformance with applicable state and federal laws and regulations

RCRA HAZARD CLASS: N/A

DESCRIPTION OF WASTE RESIDUES AND INFORMATION ON THEIR SAFE HANDLING AND METHODS OF DISPOSAL, INCLUDING ANY CONTAMINATED PACKAGING: Disposal should be in accordance with local, state, and federal regulations.

SECTION 13 NOTES: None Available

SECTION 14: TRANSPORT INFORMATION

U.N. GHS TRANSPORT REQUIREMENT

UN NUMBER: N/A

PROPER SHIPPING NAME: Thin Stillage

TRANSPORT HAZARD CLASS: N/A

PACKING GROUP: N/A

LABEL STATEMENT: N/A

MARINE POLLUTANT: No

SPECIAL PRECAUTIONS FOR USER: Wear appropriate PPEs

SECTION 14 NOTES: None Available

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS



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

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: California Proposition 65 requires manufacturers or distributors of consumer products into the state of California to provide a warning statement if the product contains ingredients for which the State has found to cause cancer, birth defects or other reproductive harm. If this product contains an ingredient listed by the state of California to cause cancer or reproductive toxicity it will be listed below

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 the company 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 the company 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.
- 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

