



# GHS SAFETY DATA SHEET

MASH

SDS DATE: 03/10/2021

## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME (GHS Product Identifier):** Fermentation Mash  
**(Other means of Identification):** Liquefact, Corn Mash, Beer well, beer

**PRODUCT INTENDED USE AND RESTRICTION:** Used in fermentation process in ethanol production facility

**NAME, ADDRESS & TELEPHONE NUMBER OF THE RESPONSIBLE PARTY:**

**Company**  
Green Plains Trade Group LLC  
1811 Aksarben Drive, Omaha, NE 68106  
Phone: 402-884-8700  
Email: EHSS@gpreinc.com

**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
Serious eye damage/Eye irritation-mild irritation 2B Skin corrosion/irritation-Category 3 STOT SE-2	Not classified	Flammable liquid-Category 3
<b>SIGNAL WORD:</b>		<b>WARNING</b>
<b>SYMBOL:</b>		
<b>HAZARD STATEMENT:</b>		Flammable liquid and vapor Cause eye irritation Cause mild skin irritation May cause damage to organs through prolonged or repeated exposure
<b>PRECAUTIONARY STATEMENTS:</b>	<b>PREVENTIVE:</b>	P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking P233: Keep container tightly closed P235: Keep cool P240: Ground/bond container and receiving equipment P241: Use explosion-proof electrical/ventilating/lighting/.../equipment P242: Use only non-sparking tools P243: Take precautionary measures against static discharge P260: Do not breathe dust/fume/gas/mist/vapors/spray P264: Wash...thoroughly after handling P270: Do not eat, drink or smoke when using this product
	<b>RESPONSE:</b>	P280: Wear protective gloves/protective clothing/eye protection/face protection P308+P311: IF exposed or concerned: Call a POISON CENTER/doctor/... P332+P313: If skin irritation occurs: Get medical advice/attention P337+P313: If eye irritation persists: Get medical advice/attention P370+P378: In case of fire: Use alcohol-resistant foam too extinguish
	<b>STORAGE:</b>	P403+P235: Store in a well-ventilated place. Keep cool P405: Store locked up
	<b>DISPOSAL:</b>	P501: Dispose of contents/containers should be in accordance with local, state and federal regulations

**Any Regional Considerations:** N/A

**SECTION 2 NOTES:** None Available



# GHS SAFETY DATA SHEET

MASH

SDS DATE: 03/10/2021

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

**CHEMICAL NAME:** Starch, Ethyl Alcohol, Water  
**COMMON NAME:** N/A  
**CHEMICAL FAMILY:** N/A  
**CHEMICAL FORMULA:** Starch-(C<sub>6</sub>H<sub>10</sub>O<sub>5</sub>)<sub>n</sub>, Water-H<sub>2</sub>O, Ethyl Alcohol-C<sub>2</sub>H<sub>6</sub>O  
**SYNONYMS:** N/A

**INGREDIENT:** Corn Starch; Water; Ethyl Alcohol

NAME	CAS#	EC#	ICSC#	% WT	% VOL
Ethyl alcohol 200 proof	64-17-5	200-578-6	0044	0-15%	N/A
Corn starch	9005-25-8	232-679-6	1553	5-40%	N/A
Water	7732-18-5	231-791-2	N/A	About 100%	N/A

**CARCINOGENICITY**

**OSHA:** NOT APPLICABLE      **ACGIH:** NOT APPLICABLE      **NTP:** NOT APPLICABLE      **IARC:** NOT APPLICABLE  
**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 grain fermentation liquid with a slightly acidic pH and potential ethanol content. May cause dermatitis in sensitive individuals

**ROUTES OF ENTRY/FIRST AID:**

**EYES CONTACT:** Flush eyes with plenty of water for at least 15 minutes, occasionally lifting upper and lower eyelids. Remove contact lenses if present. Do not use an eye ointment. Consult a physician if irritation persists

**SKIN CONTACT:** Wash contaminated area with soap and water. If irritation is present seek medical attention.

**INHALATION:** Remove victim to well ventilated area. In cases of inhalation of IDHL levels evacuate to safe location, loosen tight fitting clothing. If breathing is difficult administer oxygen. If victim is not breathing perform mouth to mouth resuscitation and seek medical attention

**INGESTION:** Not a hazard unless ingested in such quantities as to interfere with normal digestion

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:** N/A

**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 for surrounding fire

**PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHTERS:** Respiratory and eye protection required. For indoor fires, full protective equipment and self-contained breathing apparatus in pressure demand mode should be used. For small fires SCBA may not be required

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** N/A  
(Define specific hazards arising from the chemical e.g., nature of any hazardous combustion products)

**HAZARDOUS DECOMPOSITION PRODUCTS:** Carbon oxides including carbon monoxide and carbon dioxide. Possible aldehyde, fatty acid, and nitrogen or sulfur containing compounds



# GHS SAFETY DATA SHEET

MASH

SDS DATE: 03/10/2021

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

UPPER LIMIT: Unknown  
LOWER LIMIT: Unknown

**FLASH POINT:** Unknown

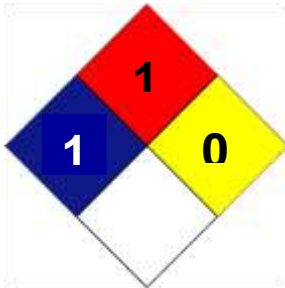
F:  
C:

**METHOD USED:** N/A

**AUTOIGNITION TEMPERATURE:** Unknown

F:  
C:

**NFPA HAZARD CLASSIFICATION:**



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

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

Mash	
HEALTH	1
FLAMMABILITY	1
PHYSICAL HAZARD	0
PERSONAL PROTECTION	C
Safety glasses, gloves, and synthetic apron	

**SECTION 5 NOTES:** None Available

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

**PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:** Mash could have very high temperature; wear appropriate Personal Protective Equipment

**ENVIRONMENTAL PRECAUTIONS:** Keep it away from sewers and natural water bodies

**METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP:** Isolate hazard and deny entry to unauthorized or unprotected personnel. Absorb spilled material using inert materials (sand). Containerize spilled waste and dispose of in accordance with regulatory requirements.

**SECTION 6 NOTES:** None Available

**SECTION 7: HANDLING AND STORAGE**

**PRECAUTION FOR SAFE HANDLING:** Wear appropriate PPEs; keep away from excessive heat

**CONDITIONS FOR SAFE STORAGE (any incompatibilities):** Keep containers closed, loosen closure cautiously before opening. Store in a cool, dry, well ventilated place away from oxidizing agents, acids, and caustics; Keep away from heat sparks and flame. Protect from direct sunlight

**SECTION 7 NOTES:** None Available

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

**EXPOSURE LIMITS/GUIDELINES:** Ethyl alcohol, corn starch

INGREDIENTS	ACGIH	NIOSH	OSHA-FINAL PELs
Ethyl alcohol	1000 ppm TWA	1000 ppm TWA; 1900 mg/m <sup>3</sup> TWA 3300 ppm IDLH	1000 ppm TWA; 1900 mg/m <sup>3</sup> TWA
Corn starch	10 mg/m <sup>3</sup> TLV	10 mg/m <sup>3</sup> TWA; 5 mg/m <sup>3</sup> TWA Inhalation	15 mg/m <sup>3</sup> OSHA PEL; 5 mg/m <sup>3</sup> OSHA TWA



# GHS SAFETY DATA SHEET

MASH

SDS DATE: 03/10/2021

**ENGINEERING CONTROLS:** Provide exhaust ventilation or other engineering controls for odor. Eyewash station and safety shower should be available

**VENTILATION:** Provide exhaust ventilation

**PERSONAL PROTECTIVE EQUIPMENT (PPE):**

**EYE PROTECTION:** Avoid wearing contacts when working with this material. Splash resistant safety glasses sufficient

**SKIN PROTECTION:** Full body covering and gloves

**RESPIRATORY PROTECTION:** Wear Dust Respirator if significant amount of dust is present

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

**SECTION 8 NOTES:** If indoors, wash down all PPE prior to storage

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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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**APPEARANCE:** Thick yellow liquid with suspended solids

**PHYSICAL STATE:** Liquid

**COLOR:** yellow

**ODOR:** Characteristic fermentation odor, baker's yeast, alcohol

**pH AS SUPPLIED:** 3.5-6.0

**pH (Other):**

**FREEZING POINT:**

**F:** 32.0°F

**C:** 0°C

**BOILING POINT:**

**F:** 212.0°F

**C:** 100.0°C

**MELTING POINT:** N/A

**F:** N/A

**C:** N/A

**FLASH POINT:** Unknown

**F:**

**C:**

**EVAPORATION RATE (BASIS=1):** Similar to water

**FLAMMABILITY (by %volume):** Unknown

**UPPER FLAMMABILITY LIMIT:**

**LOWER FLAMMABILITY LIMIT:**

**VAPOR PRESSURE (mmHg):** Unknown

@

**F:**

**C:**

**VAPOR DENSITY (AIR = 1):** Unknown

@

**F:**

**C:**

**SOLUBILITY IN WATER:** Miscible

**PARTITION COEFFICIENT n-octanol/water:** Unknown

**AUTO-IGNITION TEMPERATURE:** Unknown



# GHS SAFETY DATA SHEET

MASH

SDS DATE: 03/10/2021

F:  
C:

**DECOMPOSITION TEMPERATURE:** Unknown

F:  
C:

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

@

F:  
C:

**PERCENT SOLIDS BY WEIGHT:** 0-40%

**PERCENT VOLATILE:** Varies by content

**BY WT/BY VOL @**

F:  
C:

**VOLATILE ORGANIC COMPOUNDS (VOC):** Unknown

**WITH WATER: LBS/GAL**

**WITHOUT WATER: LBS/GAL**

**MOLECULAR WEIGHT:** Unknown

**VISCOSITY:** Unknown

@

F:  
C:

**SECTION 9 NOTES:** None Available

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## SECTION 10: STABILITY AND REACTIVITY

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**REACTIVITY:** If high concentration of alcohol is present, alcohol can react with oxidizers. (See 200 Proof Ethanol SDS for more information)

**STABILITY:** Stable

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

**POSSIBILITY OF HAZARDOUS REACTIONS:** If high concentration of alcohol is present, it will have a number of hazardous reactions. (See 200 Proof Ethanol SDS for more information)

**INCOMPATIBILITY MATERIAL:** May be incompatible with strong acids, strong bases, and oxidizing agents

**HAZARDOUS DECOMPOSITION PRODUCTS:** N/A

**SECTION 10 NOTES:** None Available

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## SECTION 11: TOXICOLOGICAL INFORMATION

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**TOXICOLOGICAL INFORMATION:** Prolonged exposure to skin may cause dermatitis

**ROUTES OF EXPOSURE:** Dermal contact, eye contact, ingestion

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

**CONTACT WITH EYE:** Liquid may cause eye irritation

**CONTACT WITH SKIN:** Liquid is lightly acidic, may cause allergic skin reaction, redness, itching, etc.

**INHALATION:** Inhalation hazard is minimal, mist from hot liquid may present an inhalation hazard

**INGESTION:** Material may be hazardous if ingested

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



# GHS SAFETY DATA SHEET

MASH

SDS DATE: 03/10/2021

**ACUTE HEALTH HAZARDS:** N/A

**CHRONIC HEALTH HAZARDS:** Prolonged or repeated skin contact may cause dermatitis

**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

## SECTION 12: ECOLOGICAL INFORMATION

**ECOTOXICITY (AQUATIC AND TERRESTRIAL, WHERE AVAILABLE):**

**Corn Starch:** N/A

**Ethanol, 200 Proof:** Ecotoxicity: Fish: Rainbow trout: LC50 = 12900-15300 mg/L; 96 Hr; Flow-through @ 24-24.3°C Fish: Rainbow trout: LC50 = 11200 mg/L; 24 Hr; Fingerling (Unspecified) Bacteria: Phytobacterium phosphoreum: EC50 = 34900 mg/L; 5-30 min; Microtox test. When spilled on land it is apt to volatilize, biodegrade, and leach into the ground water, but no data on the rates of these processes could be found. Its fate in ground water is unknown. When released into water it will volatilize and probably biodegrade. It would not be expected to adsorb to sediment or bioconcentrate in fish.

**PERSISTENCE AND DEGRADABILITY:** Biodegradable

**BIOACCUMULATIVE POTENTIAL:** No

**MOBILITY IN SOIL:** Expect to be mobile

**OTHER ADVERSE EFFECTS:** N/A

**SECTION 12 NOTES:** None Available

## SECTION 13: DISPOSAL CONSIDERATIONS

**DISPOSAL METHOD:** This material is not defined as hazardous under existing 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

## SECTION 14: TRANSPORT INFORMATION

**U.N. GHS TRANSPORT REQUIREMENT**

**UN NUMBER:** N/A

**PROPER SHIPPING NAME:** Mash

**TRANSPORT HAZARD CLASS:** N/A

**PACKING GROUP:** N/A

**LABEL STATEMENT:** N/A

**MARINE POLLUTANT:** NO



# GHS SAFETY DATA SHEET

MASH

SDS DATE: 03/10/2021

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

**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):** Starch, Ethanol are listed in 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:

**Starch:** regulated in the following states: Rhode Island RTK hazardous; Pennsylvania RTK; Minnesota; Massachusetts RTK; Tennessee

**Ethanol:** regulated in the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, and Massachusetts.

**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 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



Green Plains

# GHS SAFETY DATA SHEET

MASH

SDS DATE: 03/10/2021

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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