

PRODUCT NAME: DISTILLERS DRIED GRAINS AND SOLUBLES	Page 1 of 6
MSDS NO: DDG-1	EFFECTIVE DATE: February 1, 2011

MANUFACTURED BY: Greenfield Ethanol, Commercial Alcohols
 Bruce Energy Centre 275 Bloomfield Road 3300 boulevard Marie-Victorin 2 Chelsea Lane
 4th Concession Chatham, Varennes, Quebec Brampton, Ontario
 Tiverton, Ontario Ontario J3X 1P7 L6T 3Y4
 N0G 2T0 N7M 5J5

EMERGENCY PHONE NUMBER: CANUTEC (613) 996-6666
 NON-EMERGENCY INFORMATION PHONE NUMBER: (905) 790-7500

TRANSPORTATION

PRIMARY CLASS: NOT APPLICABLE	CLASS NAME: NOT APPLICABLE	UN#: NOT APPLICABLE
SUBSIDIARY CLASS: NONE		
SHIPPING NAME: NOT APPLICABLE		

I. EMERGENCY AND FIRST AID PROCEDURE

<u>INGESTION</u>	<ul style="list-style-type: none"> It is unlikely that an acute hazard would be posed from ingestion of this product. Never give anything by mouth if victim is rapidly losing consciousness or is unconscious or convulsing. DO NOT INDUCE VOMITING. Have victim drink about 250 ml (8 oz) of water to dilute material in stomach. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Seek medical attention immediately.
<u>SKIN</u>	<ul style="list-style-type: none"> Fibers may mildly irritate skin. Flush contaminated area with water for at least 20 minutes. Remove contaminated clothing under running water. Completely decontaminate clothing before re-use, or discard. If irritation occurs seek medical attention.
<u>INHALATION</u>	<ul style="list-style-type: none"> Dust from this product is categorized as a nuisance particulate. May cause irritation upon respiration. Remove victim to fresh air.
<u>EYES</u>	<ul style="list-style-type: none"> Dust may cause eye irritation. Immediately flush eyes with water for at least 10 minutes, holding the eyelids open. Seek medical attention.
<u>NOTES TO PHYSICIAN</u>	<ul style="list-style-type: none"> Distillers dried grains and solubles are an animal feed product. Health effects upon exposure or ingestion are expected to be minimal.

THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE BASED UPON DATA BELIEVED TO BE CORRECT. HOWEVER, NO GUARANTEE OR WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, IS MADE WITH RESPECT TO INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN.

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II. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT,
°C

- NOT APPLICABLE.

OTHER
IMPORTANT
DATA

COMPONENT	% W/W	FLAMMABLE LIMITS, % V/V		VAPOUR PRESSURE KPA AT 20°C	VAPOUR DENSITY (AIR = 1)	AUTOIGNITION POINT, °C
		LOWER	UPPER			
(1) Distillers dried grains and solubles	90 approx.	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Water	remainder					

EXTINGUISHING
MEDIA

- Apply water or all-purpose-type foams by manufacturers' recommended techniques for large fires.
- Use carbon dioxide or dry chemical media for small fires.

SPECIAL
FIREFIGHTING
PROCEDURES

- None.

UNUSUAL
FIRE AND
EXPLOSION
HAZARDS

- Dust/ air mixtures may be explosive.
- Avoid pilot lights, other flames, sparks, heaters, electrical equipment, static discharges or other ignition sources.

III. IDENTIFICATION

<u>CHEMICAL</u> <u>NAME</u>	DISTILLERS DRIED GRAINS AND SOLUBLES	<u>CHEMICAL</u> <u>FAMILY</u>	PROTEINS, CARBOHYDRATES, FIBERS
<u>FORMULA</u>	• NOT APPLICABLE	<u>MOLECULAR</u> <u>WEIGHT</u>	• NOT APPLICABLE
<u>SYNONYMS</u>	• DDG, DDGS, Distillers Grains, Distillers Dried Grains		
<u>USE</u>	• Animal feed		

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IV. PHYSICAL DATA

BOILING POINT, °C at 760mm Hg	Not Applicable
FREEZING POINT, °C	Not Applicable
DENSITY, kg/L @ 20°C	Not Applicable
COEFFICIENT OF WATER/OIL DISTRIBUTION	Not Applicable
pH	Not Applicable
DISTILLATION RANGE, °C	Not Applicable
MISCIBILITY IN WATER	Not Applicable
% VOLATILES BY VOLUME	10
EVAPORATION RATE (butyl acetate = 1)	Not Applicable

**APPEARANCE
AND ODOUR**

- Yellowish brown solid substance with cooked corn odour.

V. INGREDIENTS AND TOXICOLOGICAL DATA

INGREDIENT	% W/W	CAS NO.	TLV, ppm	LC50, ppm/4h.	LD50, mg/kg	LD50, mg/kg
				RAT, INHAL.	RAT, ORAL	RABBIT, SKIN
Distillers dried grains and solubles	90 approx.	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Water	remainder					

VI. WHMIS CLASSIFICATION AND SYNERGISTIC MATERIALS

WHMIS CLASSIFICATION

- Dust from the product may be considered an eye irritant

SYNERGISTIC MATERIALS

- Not available

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VII. HEALTH HAZARD DATA

<u>INGESTION</u>	<ul style="list-style-type: none"> It is unlikely that an acute hazard would be posed from ingestion of this product.
<u>SKIN ABSORPTION</u>	<ul style="list-style-type: none"> Not applicable .
<u>INHALATION</u>	<ul style="list-style-type: none"> Dust from this product may cause irritation upon respiration.
<u>SKIN CONTACT</u>	<ul style="list-style-type: none"> No evidence of significant adverse effects from available information. Fibres may cause minor skin irritation.
<u>EYE CONTACT</u>	<ul style="list-style-type: none"> Airborne dust from this product may irritate eyes. Wear appropriate eye protection.
<u>EFFECT OF REPEATED OVEREXPOSURE</u>	<ul style="list-style-type: none"> Not available.
<u>MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE</u>	<ul style="list-style-type: none"> Not available.
<u>OTHER EFFECTS OF OVEREXPOSURE</u>	<ul style="list-style-type: none"> Not available.

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VIII. REACTIVITY DATA

<u>STABILITY</u>	<ul style="list-style-type: none"> Stable
<u>CONDITIONS TO AVOID</u>	<ul style="list-style-type: none"> Sources of ignition of airborne dust
<u>INCOMPATIBILITY</u>	<ul style="list-style-type: none"> Not applicable
<u>HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS</u>	<ul style="list-style-type: none"> Burning can produce carbon monoxide and/or carbon dioxide and/or formaldehyde.
<u>HAZARDOUS POLYMERIZATION</u>	<ul style="list-style-type: none"> Will not occur
<u>CONDITIONS TO AVOID</u>	<ul style="list-style-type: none"> None currently known

IX. SPILL OR LEAK PROCEDURES

<u>SPILL</u>	<ul style="list-style-type: none"> Use conventional cleanup methods.
<u>WASTE DISPOSAL</u>	<ul style="list-style-type: none"> Waste material should be disposed of using conventional methods, in compliance with all federal, provincial and local government regulations.

X. SPECIAL PROTECTION INFORMATION

<u>RESPIRATORY PROTECTION</u>	<ul style="list-style-type: none"> Use appropriate NIOSH approved respirator when needed, to protect against nuisance airborne dusts. The user should consult a respirator guide, such as the Canadian Standards Association's guide.
<u>VENTILATION</u>	<ul style="list-style-type: none"> Local ventilation is recommended where practical to reduce exposure to airborne dusts.
<u>PROTECTIVE GLOVES</u>	<ul style="list-style-type: none"> Generally not required. Fibers in product may mildly irritate skin. Neoprene, butyl or natural rubber gloves may be used.
<u>EYE PROTECTION</u>	<ul style="list-style-type: none"> Safety glasses or monogoggles when exposed to flying particles or nuisance dust during handling.
<u>OTHER PROTECTIVE EQUIPMENT</u>	<ul style="list-style-type: none"> Eye bath, safety shower and other protective equipment as required.

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XI. SPECIAL PRECAUTIONS

<u>PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING</u>	<ul style="list-style-type: none">• Keep away from heat, sparks and flames.• Keep container closed when not in use.• Avoid breathing vapours.• Avoid contact with eyes and skin.• Wash exposed skin thoroughly after handling.• Take precautions to prevent static electricity build-up when transferring contents.
<u>OTHER PRECAUTIONS</u>	<ul style="list-style-type: none">• Good personal hygiene practices are suggested, such as abstaining from eating, drinking and smoking in the workplace.

XII. MSDS PREPARATION

PREPARED BY	Alcohol Quality Assurance, Technical Services and Regulatory Affairs Department	
PHONE NUMBER	(905) 790-7500	DATE: February 1, 2011

GREENFIELD ETHANOL URGES EACH CUSTOMER OR RECIPIENT OF THIS MSDS TO STUDY IT CAREFULLY TO BECOME AWARE OF AND UNDERSTAND THE HAZARDS ASSOCIATED WITH THE PRODUCT. THE READER SHOULD CONSIDER CONSULTING REFERENCE WORKS OR INDIVIDUALS WHO ARE EXPERTS IN VENTILATION, TOXICOLOGY OR FIRE PREVENTION, AS NECESSARY OR APPROPRIATE TO USE AND UNDERSTAND THE DATA CONTAINED IN THIS MSDS.

TO PROMOTE SAFE USE AND HANDLING OF THIS PRODUCT, EACH CUSTOMER OR RECIPIENT SHOULD

- (1) NOTIFY EMPLOYEES, AGENTS, CONTRACTORS AND OTHERS WHO MAY USE THIS MATERIAL, OF THE INFORMATION IN THIS MSDS AND ANY OTHER INFORMATION REGARDING HAZARDS OR SAFETY,
- (2) FURNISH THIS SAME INFORMATION TO EACH CUSTOMER FOR THE PRODUCT, AND
- (3) REQUEST CUSTOMERS TO NOTIFY THEIR EMPLOYEES, CUSTOMERS, AND OTHER USERS OF THE PRODUCT OF THIS INFORMATION.