



## Safety Data Sheet

### Section 1 – Product and Company Identification

**Manufacturer:** Hord Livestock Co., LLC.  
**Address:** 887 State Route 98  
Bucyrus, OH 44820  
**Phone Number:** 419-562-5934

**Product Name:** Whole Grain  
**SDS Name:** Grain Dust  
**Synonyms/Other Names:** N/A  
**Intended Use:** Food  
**Manufacturer:** Various  
**Emergency Phone Number:** 419-562-5934

### Section 2 – Hazards Identification

**Classification:** Combustible Dust/Respiratory hazard if small particles are generated during further processing, handling, or by other means.

**Label Elements:**

**Signal Word:** WARNING

**Hazard Statement(s):** Class 2B eye irritant. May cause breathing difficulties if inhaled.

If small particles are generated during further processing, handling, or by other means, may form combustible dust concentrations in air.

**Precautionary Statement(s):** Dust from particulates may be a mechanical eye irritant. Rinse eyes with water for several minutes.

Avoid breathing dust. Excessive inhalation may affect nose, throat, and lungs. Avoid ignition sources. Grain dust may burn if suspended in air and may create a flash fire/explosion hazard.

**Emergency Overview:** Dust from particulates may be mechanical irritant to eyes. Excessive inhalation of grain dusts may affect nose, throat, and lungs. May form combustible dust concentration in Air: See "Explosion Hazard" below.

**Explosion Hazard:** Grain is generally considered not hazardous, but dust generated through downstream activities that may reduce its particle size (i.e. shipping, handling, transfer to bins, etc.) may create a hazardous condition.

If exposed to an ignition source, dust may burn. Airborne dust in sufficient concentrations, when exposed to an ignition source, may flash or, in a confined situation, may fuel an explosion.

### Section 3 – Composition/Information on Ingredients

<u>Component</u>	<u>CAS #</u>	<u>Concentrations</u>
Whole Grain	N/A	up to 100%
Foreign material (such as organic plant material)	N/A	0-5%
Grain Dust	N/A	0-5%

## Section 4 – First Aid Measures

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**Inhalation:** Remove person from exposure. Seek medical attention for any breathing difficulty.

**Ingestion:** If swallowed, give several glasses of water to dilute. Never give anything by mouth to an unconscious person.

**Skin Contact:** Wash affected area with soap and water.

**Eye Contact:** Wash eyes with water. Seek medical attention as needed.

## Section 5 – Firefighting Measures

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<b>Flash Point (Method):</b>	N/A	
<b>Flammable Limits:</b>	LEL: Unknown	UEL: Unknown
<b>Auto ignition Temperature:</b>	Unknown	
<b>Hazardous Combustion Products:</b>	Oxides of Carbon	

**Special Firefighting Procedures:** Extinguish with water fog, dry chemical powders, or foam. Do not use strong streams of water or dry chemical if dust can be dispersed into the air. Dust placed in suspension with an ignition source present may flash or explode.

**Usual Fire and Explosion Hazards:** **WHOLE GRAIN IS NOT EXPLOSIVE.** Fine dust dispersed in air at a sufficient concentration may ignite if exposed to an ignition source.

## Section 6 - Accidental Release Measures

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Clean up with soft bristle broom(s) or a vacuum approved for a Class II hazardous location. Dust deposits should be maintained to a minimum on surfaces, as these could form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e. cleaning dusty surfaces with compressed air in the presence of an ignition source should not be allowed).

## Section 7 – Handling and Storage

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Fine dust dispersed in air at a sufficient concentration may ignite if exposed to an ignition source. Remove grain dust from area/processing equipment prior to using any heat producing equipment such as arc welders, cutting torches, and spark/heat producing tools such as portable surface grinders. According to 29 CFR 1910.272(F) a hot work permit is required.

## Section 8 – Exposure Controls/Personal Protection

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**Respiratory Protection:** Wear an approved NIOSH dust respirator whenever dust concentrations in the work area are above ACGIH TLV/OSHA PELs.

### Grain Dust (Wheat, Oat, Barley)

OSHA PEL: 10 mg/M3

ACHIG TLV: 4 mg/M3

### Other Grains

OSHA PEL: 15 mg/M3 (Total) 5 mg/M3 (Respirable)

ACHIG TLV: 10 mg/M3\*

\*This TLV applies to nuisance particulates. The grain industry believes there is currently inadequate data to support this TLV.

<b>Ventilation:</b>	Local Exhaust:	If needed
	Mechanical (General):	If needed

Ensure dust handling systems (such as ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work areas. Use only appropriately classified electrical equipment and powered industrial trucks.

**Protective Gloves:** N/A

**Eye Protection:** Safety Glasses/Goggles suggested in dusty conditions.

**Work/Hygienic Practices:** Good personal hygiene practices should be followed. Avoid excessive dust accumulation and control ignition sources. Where appropriate, employ grounding, venting, and explosion relief provisions in accordance with accepted engineering practices in processes capable of generating dust and/or static electricity.

## Section 9 – Physical and Chemical Properties

<b>Flash Point (Method):</b>	N/A	
<b>Flammable Limits:</b>	LEL: Unknown	UEL: Unknown
<b>Auto ignition Temperature:</b>	Unknown	
<b>Appearance:</b>	Whole Grain	Natural Grain color
	Grain Dust	Light grayish or brown powder

**Upper/Lower Flammability or Explosive Limits:** When dispersed into the air in sufficient concentrations, grain dust can explode in the presence of an ignition source. Do not allow dust to become dispersed into the air, even by the extinguishing agent. Minimum explosive concentration is 55 g/M3. However, moisture content, particle size, caloric properties, and specific ingredients also affect the explosiveness of grain dust.

The Flash Point and Flammable limits are accurate because grain dust has no flash point, LEL, or UEL due to its properties. The firefighting measures listed are in accordance with similar SDS.

For an explosion to occur, four conditions must exist. First, oxygen must be present. Second, there must be an ignition source (i.e. electrical short, sparks, etc.). Third, there must be fuel (i.e. grain dust in suspension). Fourth, there must be containment of suspended grain dust (i.e. silo, vessel, etc.). Although an explosion will not occur if there is no containment, the dust can still ignite, resulting in a fire.

As noted, explosions are dependent upon the concentration of the fuel (i.e. grain dust suspended in the air). The minimum explosive concentration (MEC) for grain dust is around 55 g/M3. The MEC varies according to the particle size and caloric properties of the product. In addition, the specific ingredients of the grain dust will affect the MEC. Therefore, the listed MEC range would be appropriate.

The following excerpt, taken from “Preventing Grain Dust Explosions” explains explosives limits for grain dust:  
*A Texas A & M University dust control scientist suggests that the MEC range is about 50 to 150 grams per cubic meter, depending on the type of dust and the size of particles (Parnell, 1998). This equates to the same MEC level used by the National Grain and Feed Association (NGFA). NGFA states that the broad, generally accepted MEC for grain dust explosions is about 0.05 ounces per cubic foot of volume. It says that the optimum explosive concentration (DEC) is about 0.5 to 1.0 ounces per cubic foot – about 10 times the MEC (Gillis, 1985, p. 43).*

**Odor:** No distinct odor (out of condition products may be sour or musty)

Vapor Pressure:	N/A
Odor Threshold:	N/A
Vapor Density:	N/A
pH:	N/A
Melting Point/Freezing Point:	N/A
Solubility(ies):	N/A
Initial Boiling Point & Boiling Range:	N/A
Partition Coefficient n-octanol/water:	N/A
Flash Point:	N/A
Auto-Ignition Temperature:	N/A
Evaporation Rate:	N/A
Decomposition Temperature:	N/A

#### Section 10 – Stability and Reactivity

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<b>Stability:</b>	Stable
<b>Condition to avoid:</b>	Dispersing dust in air above MEC and exposure to potential ignition sources
<b>Incompatibility (materials to avoid):</b>	None
<b>Hazardous Decomposition/byproducts:</b>	CO <sub>2</sub> , H <sub>2</sub> S, and Oxygen deficient atmosphere under improper storage conditions
<b>Hazardous Polymerization:</b>	Will not occur
<b>Condition to avoid:</b>	N/A
<b>Reactivity:</b>	N/A

#### Section 11 – Toxicological Information

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<b>Routes of Exposure:</b>	Inhalation	X
	Skin	X
	Eyes	X
	Ingestion	Unlikely
	Carcinogenicity	
	NTP	No
	ARC Monographs	No
	OSHA Regulated	No

**Acute:** May be mechanical irritant to skin and eyes. Excessive inhalation of grain dusts may affect nose, throat, and lungs.

**Chronic:** Repeated and prolonged exposure to grain dusts may affect the respiratory system or cause sensitization. Smokers have an increased risk of respiratory effects.

**Signs and Symptoms of Exposure:** Irritation to the skin, eyes, nose, or throat may occur. Some people may occasionally experience coughing.

**Medical Conditions Generally Aggravated by Exposure:** Allergies and Respiratory Ailments.

#### Section 12 – Ecological Information (Non-Mandatory)

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#### Section 13 – Disposal Considerations (Non-Mandatory)

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#### Section 14 – Transport Information (Non-Mandatory)

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## Section 15 – Regulatory Information

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All electrical equipment must be suitable for use in hazardous atmospheres involving combustible dust in accordance with 29 CFR 1910.307. The National Electric Code (NEC), NFPA 70, contains guidelines for determining the type and design of equipment and installation, which will meet this requirement.

Combustible dust is a “Hazard other than Chemical” as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

## Section 16 – Other Information

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**Prepared by:** Hord Livestock Co., INC.

**Revision Date:** 03/31/2016

**Disclaimer:** This Safety Data Sheet (SDS) covers grain in its natural state and does not include chemicals that may be applied by subsequent handlers and/or distributors of this product. This information in this SDS was obtained from sources that we believe are reliable. However, the information was provided without any representation or warranty, expressed or implied, regarding the accuracy or correctness. The conditions or methods of handling, storage, use, and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.