



GRAIN MILLERS

SAFETY DATA SHEET

This SDS complies with REACH 1907/2006 and 2001/58/EC, GHS, OSHA 29CFR 1910.1200

Section 1: Chemical Product and Company Identification

MANUFACTURER'S NAME

Grain Millers, Inc.
10400 Viking Drive
Suite 301
Eden Prairie, Minnesota 55344
Fax: 952-829-8819
Safety Data Sheet Competent Person:

EMERGENCY TELEPHONE

Chemtrec U.S.-Canada: 800-424-9300
Chemtrec International: 703-527-3887
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REVISION DATE: Feb 8, 2019

DATE PREPARED: February 4, 2015

PRODUCT NAME: Organic or Conventional Food Products Containing: Grain Dust (Oat, Oat Fiber, Wheat, Rye, Barley, Triticale, Quinoa) or Seed Dust (Flax, Sunflower, Sesame, Poppy, Chia, & Pumpkin)

FORMULA: Substance
PRODUCT USE: Food Ingredient

Section 2: Hazards Identification

Regulation (EC) No 1272/2008
OSHA

GHS Hazard Class No pictogram Signal word:
Warning

Hazard Statement: May form combustible dust concentrations in air.
Precautionary Statements: None

Hazard(s) Not Otherwise Classified (HNOC): None

HAZARD CLASSIFICATION: Not classified as hazardous based on IATA, IMDG, and DOT.

FIRE AND EXPLOSION: May form combustible dust concentrations in air.

Material	Lower Explosive Limit g/m ³	Minimum Ignition Energy Joules	Minimum Ignition Temperature C	Maximum Explosive Pressure PSI	Maximum Rate of Pressurize Psi/sec
Grain Dust	55	0.03	230-430	115	5500

When dispersed into the air in sufficient concentrations, all grain dusts can explode in the presence of an ignition sources. Do not allow dust to become dispersed into the air, even by the extinguishing agent.

Minimum explosive concentration is 25-55 mg/m³. However, moisture content, particle size, caloric properties, and specific ingredients also affect the explosiveness of grain dust.

POTENTIAL HEALTH EFFECTS: 0 % of mixture consists of ingredients of unknown acute toxicity
INGESTION: Ingestion of large amounts may cause gastrointestinal disturbances.
INHALATION: Dusts may cause irritation to the nose, throat and lungs by mechanical abrasion. May cause allergic reactions in some individuals.
SKIN CONTACT: Dusts may cause irritation due to abrasion. Repeated or prolonged skin contact may cause reddening, itching and inflammation.
EYE CONTACT: Dusts may cause mechanical irritation including pain, lacrimation and redness. Effects may



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become more serious with repeated or prolonged contact.

OTHER:

None

CHRONIC EFFECTS OF OVEREXPOSURE:

Prolonged or repeated exposure to dust can result in asthma, bronchitis, chronic obstructive pulmonary disease, conjunctivitis, dermatitis, rhinitis and or grain fever.

APPEARANCE:

Off white, beige as is typical for grain based product.

NFPA Rating:

Component	Health (Blue)	Flammability (Red)	Reactivity (Yellow)	Special (White)
Organic or conventional Grain Dust	1	1	0	--

Section 3: Composition, Information on Ingredients

PRODUCT COMPOSITION	APPRX %	CAS NO.	EINECS/ELINCS	DANGER SYMBOL	RISK PHRASE	DSL CANADA	TSCA
Organic or conventional Grain Dust	100	N/A	N/A	N/A	N/A	N/A	N/A

Trade Secret (TS) Some items on this MSDS may be designated as trade secrets. Bonafide requests for disclosure of trade secret information to medical personnel must be made in accordance with the provisions contained in 29 CFR 1910.1200 I 1-13. The full text for all R-Phrases is shown in Section 16.

Section 4: First Aid Measures

INHALATION:

Remove to fresh air. If not breathing, provide CPR (cardio pulmonary resuscitation). Get immediate medical attention.

SKIN CONTACT:

If skin irritation occurs, immediately flush skin with plenty of soap and water. Remove contaminated clothing.

EYE CONTACT:

Immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical attention.

INGESTION:

If swallowed do not induce vomiting, give large quantities of water to drink. Never give anything to an unconscious person. Get immediate medical attention.

Section 5: Fire-fighting Measures

FLASH POINT:

Not applicable

FLAMMABLE LIMITS IN AIR (% by vol):

Not applicable

EXTINGUISHING MEDIA:

Dry chemical, foam, water fog, carbon dioxide

SPECIAL FIREFIGHTING PROCEDURES:

None

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Material does not burn. Use extinguishing agent suitable for the type of surrounding fire.

UNUSUAL FIRE AND EXPLOSION HAZARDS: When dispersed into the air in sufficient concentrations, all corn and grain dusts, can explode in the presence of an ignition sources. Do not allow dust to become dispersed into the air, even by the extinguishing agent. Minimum explosive concentration is 25-55 mg/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.

In order 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, static electricity, sparks, etc.).

Third, there must be fuel (i.e. grain dust).

Fourth, there must be containment (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.



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Explosions are also dependent upon the concentration of the grain dust suspended in the air. The minimum explosive concentration (MEC) for grain dust is around 50 mg/m³. The MEG 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.

The following insert taken from "Preventing Grain Dust Explosions" explains explosive limits for grain dust:

"A Texas A&M University dust control scientist suggest 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 MEG level used by the National Grain and Feed Association (NGFA). NGFA states that the broad, generally accepted MEG for grain dust explosions is about 0.05 ounces per cubic foot of volume. They say that the optimum explosive concentration (OEC) is about 0.5 to 1.0 ounces per cubic foot—about 10 times the MEG (Gillis, 1985, p. 43)."

Section 6: Accidental Release Measures

ACTION TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Environmental precautions	Avoid excessive generation of dust. If dust is generated, appropriate respiratory, eye and skin protection should be used to protect personnel during cleanup. If material is released to the environment, take immediate steps to stop and contain release. Prevent or minimize formation of a dust cloud or layer. Eliminate all sources of ignition. Isolate hazard area and deny entry. Caution should be exercised regarding personnel safety and exposure to the released material. Notify local, provincial and/or federal authorities, if required.
Other information	Keep unnecessary people away. Isolate hazard area and deny entry. Shovel into a container for later disposal. Avoid cleanup procedures that may result in water pollution. Avoid excessive generation of dust. If dust is generated, appropriate respiratory, eye and skin protection should be used to protect personnel during cleanup. See Exposure Controls/Personal Protection (Section 8).
Emergency action	Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind. (See Exposure Controls/Personal Protection in Section 8.)

DISPOSAL METHOD: disposal should be made in accordance with federal, state and local regulations.

Section 7: Handling and Storage

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

- Store upright in a cool, dry place.
- Keep container closed when not in use.
- Prevent build-up of electro-static charges (e.g. by grounding).
- Keep away from heat, sparks, flame, direct sunlight, and other possible sources of ignition.
- Use only with adequate ventilation.
- Wear proper protective equipment when handling this material.
- Avoid contact with skin, eyes or clothing.
- Wash hands and face after handling this material.
- Minimize dust generation during handling and contact.

If dusts are generated at your facility during the handling and processing of this material, then this material, in its finely divided form, may present an explosion hazard when dispersed in an unconfined or confined area such as a building or vessel in a sufficient concentration and in the presence of oxygen and heat (spark). Ignition of a dust cloud in an unconfined area may result in a fireball. Ignition of a dust cloud in a confined space may result in a pressure buildup in equipment. In addition, if dusts are generated at your facility, determine the explosibility parameters of the dust formed within your facility. Bond and ground lines and equipment (tank, transfer lines, pump, floats, etc.) used during transfer to reduce the possibility of static spark-initiated fire or explosion. Use non-sparking tools. Do not cut, grind, drill, weld or reuse containers unless adequate precautions are taken against these hazards.
Avoid accumulation of dust on surfaces. Clean up dust using approved methods.

Good personal hygiene practices such as properly handling contaminated clothing, using wash facilities before entering public areas and restricting eating, drinking and smoking to designated areas are essential for preventing personal chemical contamination. Avoid inhaling dust and contact with skin and eyes.
For additional safety information, consult the current editions of the National Fire Protection Association (NFPA) 654 Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, NFPA 499, Recommended Practice for the Classification of Combustible Dusts and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas, NFPA 77, Recommended Practice on Static Electricity, and NFPA 68, Standard on Explosion Protection by Deflagration Venting.



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SPECIFIC USES:

This product is intended for use as a food additive.

Section 8: Exposure Controls/Personal Protection

Control Parameters

PRODUCT COMPOSITION	ACGIH TLV	OSHA PEL	NIOSH REL
Corn dust	**PNOS	*PNOR	-----

*PNOR (Particulates Not Otherwise Regulated): OSHA 5 mg/m³ Respirable fraction (R), 15 mg/m³ Total Particulates

**PNOS (Particulates Not Otherwise Specified): ACGIH 3 mg/m³ Respirable fraction (R), 10 mg/m³ Total Particulates, total dust less than 1% quartz.

NIOSH-- No Occupational exposure values

Exposure controls

VENTILATION:

Always provide good general, mechanical room ventilation where this chemical/material is used.

SPECIAL VENTILATION CONTROLS:

Use this material inside totally enclosed equipment, or use it with local exhaust ventilation.

RESPIRATORY PROTECTION:

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or the CEN European Standards (EU). Use a NIOSH/MSHA or European Standard (EN) approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. Recommend use of gloves. Eye protection required. Wear suitable protective clothing to prevent skin contact. Use of anti-static type aprons is recommended.

PROTECTIVE GLOVES: EYE PROTECTION:

Suitable protective clothing to prevent skin contact

PROTECTIVE CLOTHING:

Grain dust can affect allergies. Provide good personal hygiene after handling. Avoid contact with eyes. Wash hands after handling.

SKIN PROTECTION:

Reference Section 2

WORK/HYGIENE PRACTICES:

Make safety shower, eyewash stations, and hand washing equipment available in the work area.

EXPOSURE LIMITS

OTHER EQUIPMENT:

Section 9: Physical and Chemical Properties

APPEARANCE - COLOR:

Off white, beige as is typical for corn based product

PHYSICAL STATE:

Solid flake, flour, fiber or dust

ODOR:

Natural and typical for corn based product

PRODUCT CRITERIA

	PRODUCT CRITERIA
ODOR THRESHOLD	Not applicable for product



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PH	6.5-6.9
FLASH POINT:	N/A
LOWER EXPLOSIVE LIMIT; UPPER EXPLOSIVE LIMIT	55: Unknown
FLAMMABILITY (Solid, gas)	Dust
EXPLOSIVE PROPERTIES	If improperly handled, stored and/or exposed to an ignition source, this material will burn.
OXIDIZING PROPERTIES	N/A
SPECIFIC GRAVITY (@25 °C):	N/A
EVAPORATION RATE:	N/A
% VOLATILE by VOLUME	N/A
PARTITION COEFFICIENT	N/A
AUTO IGNITION TEMPERATURE	N/A
DECOMPOSITION TEMPERATURE	N/A
BOILING POINT:	N/A
MELTING POINT:	N/A
VAPOR PRESSURE	N/A
VAPOR DENSITY (AIR = 1)	N/A
SOLUBILITY IN WATER:	Not Soluble
WATER SOLUBILITY IN THE SOLVENT	Not Soluble
FREEZING POINT:	N/A
VISCOSITY	N/A
VOC CONTENT	N/A

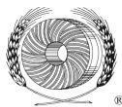
Section 10: Stability and Reactivity

STABILITY:	Stable under normal conditions.
CONDITIONS TO AVOID:	Do not heat above flash point; heat, flames, sparks.
INCOMPATIBILITY (MATERIALS TO AVOID):	None
HAZARDOUS DECOMPOSITION PRODUCTS:	Carbon monoxide and carbon dioxide
HAZARDOUS POLYMERIZATION:	Will not occur

Section 11: Toxicological Information

There is no toxicological information available for the product mixture.

GHS Required Criteria	Toxicity Criteria	Toxicity Information	Comments	Chemical Constituent
Acute Toxicity		No information is available.		
Skin Corrosion/Irritation		No information is available.		
Serious Eye Damage / Eye Irritation		No information is available.		
Respiratory or Skin Sensitization		No information is available.		
Germ Cell Mutagenicity		No information is available.		
Carcinogenicity		Not listed	NTP	
		Not listed	IARC	
		Not listed	OSHA	
Reproductive Toxicity		No information is available.		



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STOST -- Single Exposure		No information is available.		
STOST – Repeated Exposure		No information is available.		
Aspiration Hazard		No information is available.		

STOST = Specific Target Organ Systemic Toxicity

OTHER INFORMATION:

Only selected Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information.

Section 12: Ecological Information

Chemical

BIODEGRADATION:		No information is available.	
BIOACCUMULATION:		No information is available.	
ECO TOXICITY:		No information is available.	
MOBILITY:		No information is available.	

Section 13: Disposal Considerations

WASTE FROM RESIDUES / UNUSED PRODUCTS:

Follow the waste disposal requirements of your country, state, or local authorities.

Section 14: Transport Information

<u>DOT TRANSPORT:</u>		Not Regulated
<u>ADR = International Carriage of Dangerous Goods by Road</u>		Not Regulated
<u>RAIL TRANSPORT:</u>		Not Regulated
<u>SEA TRANSPORT:</u>	IMDG	Not Regulated
<u>AIR TRANSPORT:</u>	IATA/ICAO	Not Regulated

Section 15: Regulatory Information

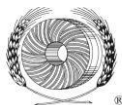
Directive 1999/45/EC

FOR SUPPLY: None

Not applicable LABEL

RISK PHRASES: None

TOXIC SUBSTANCES CONTROL ACT (TSCA) STATUS:



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This product is in compliance with rules, regulations, and orders of TSCA.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA) TITLE III SECTION 313 SUPPLIER NOTIFICATION:

This regulation requires submission of annual reports of toxic chemical(s) that appear in section 313 of the Emergency Planning and Community Right To Know Act of 1986 and 40 CFR 372. This information must be included in all MSDS's that are copied and distributed for the material.

The Section 313 toxic chemicals contained in this product are: None

CALIFORNIA PROPOSITION 65:

This regulation requires a warning for California Proposition 65 chemical(s) under the statute.

The California proposition 65 chemical(s) contained in this product are: None

STATE RIGHT-TO-KNOW TOXIC SUBSTANCE OR HAZARDOUS SUBSTANCE LIST: Florida

Toxic Substance(s): Not listed Massachusetts's

hazardous substance(s): Not listed

Pennsylvania hazardous substance code(s): Not listed

New Jersey Not listed

Illinois Not listed

Michigan Not listed

CANADA:

This MSDS/SDS will be non-compliant 3 years after the issue date. This MSDS contains all of the information required by the Controlled Products Regulations (CPR).

WHMIS-INFORMATION:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR), SOR/88-66, Current to February 20, 2012. The classes of controlled products listed in the CPR, Section 32, Part IV, have been reviewed and based on Professional Judgment this product has been determined to not be WHMIS controlled.

EUROPEAN UNION:

This product has been reviewed for compliance with the following European Community Directives: REACH 1907/2006; Directive 1999/45/EC, Regulation (EC) No 1272/2008 on classification, labeling, and packaging (CLP) of substances and mixtures. WGK: 0 (German Federal Water Management Act) (Water Hazard Class)

Section 16: Other Information

Refer to NFPA 654, *Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids*, for safe handling.

OHSA Standard 29CFR 1910.272 Grain Handling facilities

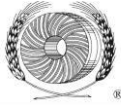
European Community Hazards Identification:

R: None

S: None

Danger Symbol(s): None

Revision Comments: Initial version February 9, 2015



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Revision Number:

0

Information Sources:

RTECS, REACH, OSHA 29CFR 1910.1200

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