



GRAIN MILLERS

Oats • Oat Fiber • Functional Flours • Sweeteners
Wheat • Barley • Rye • Corn • Flax • Ancient Grains
Blends & Mixes • Gluten Free • Organic • and More

SAFETY DATA SHEET (SDS)

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

SECTION 1: CHEMICAL PRODUCT & COMPANY IDENTIFICATION

MANUFACTURER'S NAME

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

EMERGENCY TELEPHONE

Chemtrec U.S.-Canada: 800-424-9300
Chemtrec International: 703-527-3887
Information: 952-983-1380

DATE PREPARED: February 4, 2015

REVISION DATE: February 16, 2024

PRODUCT NAME: Organic or Conventional Food
Products Containing: Grain Dust or Seed Dust

FORMULA: Substance

PRODUCT USE: Food Ingredient

SAFETY DATA SHEET COMPETENT CONTACTS:

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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*	Minimum Explosive Concentration (MEC) g/m ³	Minimum Ignition Energy Joules (MIE) mJ	Maximum Explosive Pressure (Kst) bar m/sec	Maximum Rate of Pressurize (Pmax) bar g
GRAIN DUST	60-75	10-30	129-170	7.7-8.3
EXTRA FINE FLAX	750 < MEC < 1000	> 1000	11	4.04
CORN FLOUR	60 < MEC < 75	100 < MIE < 300	116	7.76

*From table A.5.2.2 (test data of Agricultural Dusts) from NFPA 61 - Standard for the Prevention of Fires and Dust Explosions in Agricultural and Food Processing Facilities or from internal data sampling.

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 can vary based on moisture content, particle size, caloric properties, and specific ingredients.

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 become more serious with repeated or prolonged contact.

Other: None.

Chronic Effects of Overexposure: Prolonged and/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 SDS 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 (cardiopulmonary 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 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 can vary based on moisture content, particle size, caloric properties, and specific ingredients.



- 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.
- 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 60-75 mg/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.
- 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 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. They say that the optimum explosive concentration (OEC) is about 0.5 to 1.0 ounces per cubic foot—about 10 times the MEC (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.



SPECIFIC USES:

This product is intended for use as a food ingredient.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Product Composition	ACGIH TLV	OSHA PEL	NIOSH REL
GRAIN 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 with exhaust ventilation, 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.

PROTECTIVE GLOVES:

Recommend use of gloves.

EYE PROTECTION:

Eye protection required.

PROTECTIVE CLOTHING:

Wear suitable protective clothing to prevent skin contact. Depending on the nature of handling and fugitive dust generation, use of anti-static type aprons is recommended.

SKIN PROTECTION:

Suitable protective clothing to prevent skin contact
Grain dust can affect allergies. Provide good personal hygiene after handling. Avoid contact with eyes. Wash hands after handling.

WORK/HYGIENE PRACTICES:

Reference Section 2

OTHER EQUIPMENT:

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



SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE - COLOR: Off white, beige as is typical for grain-based product.
 PHYSICAL STATE: Solid flake, flour, fiber, dust or whole kernel.
 ODOR: Natural and typical for grain-based product.

PRODUCT CRITERIA

ODOR THRESHOLD	Not applicable for product
PH	N/A
FLASHPOINT	N/A
LOWER EXPLOSIVE LIMIT - UPPER EXPLOSIVE LIMIT	60 - Unknown
FLAMMABILITY (Solid, gas)	Dust
EXPLOSIVE PROPERTIES	If improperly handled, stored and/or exposed to an ignition source, this material will burn
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	N/A
WATER SOLUBILITY IN THE SOLVENT	N/A
FREEZING POINT	N/A
VISCOSITY	N/A
VOC CONTENT	N/A

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions.
 DUST CONCENTRATIONS IN THE AIR: 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

Information on toxicological effects

ACUTE TOXICITY	Based on available data, no evidence of acute toxicity. (Long history of safe use in food.)
SKIN CORROSION/IRRITATION	Based on available data, not, or only slightly irritating.
SERIOUS EYE DAMAGE/EYE IRRITATION	Based on available data, no evidence of serious eye damage/irritation.
RESPIRATORY OR SKIN SENSITIZATION	Based on available data, not expected to be a skin or respiratory sensitizer.
GERM CELL MUTAGENICITY	Not classified (Long history of safe use in food).
CARCINOGENICITY	No evidence of carcinogenicity.
REPRODUCTIVE TOXICITY	Not classified (Long history of safe use in food).
STOT - SINGLE EXPOSURE	No evidence of toxicity.
STOT - REPEATED EXPOSURE	No evidence of toxicity.
ASPIRATION HAZARD	Based on available data, no known aspiration hazard.

Potential health effects

- Eyes Contact with eyes may cause mechanical irritation.
- Skin Product dust may cause mild, mechanical irritation.
- Inhalation Dust may cause irritation of respiratory tract.
- Ingestion Health injuries are not known or expected under normal use. (Long history of safe use in food.)

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	N/A	
BIOACCUMULATION	N/A	
ECO TOXICITY	N/A	
MOBILITY	N/A	

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

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

SECTION 15: REGULATORY INFORMATION

Directive 1999/45/EC Not applicable
 LABEL FOR SUPPLY: None
 RISK PHRASES: None

TOXIC SUBSTANCES CONTROL ACT (TSCA) STATUS:

- 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 SDS'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's hazardous substance code(s): Not listed
- New Jersey: Not listed
- Illinois: Not listed
- Michigan: Not listed

CANADA:

- This SDS will be non-compliant 3 years after the issue date. This SDS 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: February 16, 2024: Updated Toxicological information.

Information Sources: NFPA, RTECS, REACH, OSHA 29CFR 1910.1200

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