

SAFETY DATA SHEET

Section 1 – Product and Company Identification

Material Name - Milled Barley Products including Sustagrain® products
 Chemical Category - Food Ingredient

Manufacturer - Ardent Mills, LLC; Ardent Mills, ULC: Molinos de Puerto Rico, LLC
 1875 Lawrence Street
 Denver, CO 80202
www.ardentmills.com

Telephone
 General - Call your Ardent Mills' Customer Service Rep
 Emergency - 1-800-424-9300 CHEMTREC

Preparation Date - 12/31/2015
 Last Revision Date - 11/05/2018

Section 2 – Hazards Identification

Emergency Overview **WARNING**

May form combustible dust concentrations in air (during processing).

Prevention - Avoid generating fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source

Response - When responding to explosion or any subsequent fire, DO NOT use high pressure extinguishing agent as this may spread the dust and may create an additional ignitable dust cloud.

Storage/Disposal - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Potential Health Effects

Eyes – Direct contact with eyes may cause temporary irritation

Skin – None known.

Inhalation – Dust may irritate the respiratory system.

Ingestion – Expected to be a low ingestion hazard.

Chronic Effects - May cause allergic reaction in persons sensitive to wheat proteins.

Environmental Effects - Not expected to be harmful to aquatic organisms.

Physical Descriptions

Form – Solid

Color – Yellowish

Odor – No data available

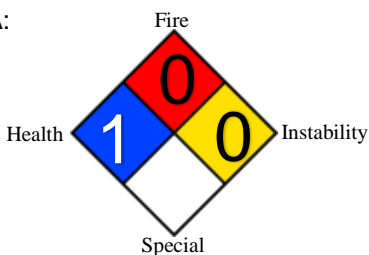
Flash Point – Not relevant

WHMIS – Other Toxic Effects – D2A

EU – Sensitizer – R42

GHS - Specific Target Organ Toxicity Single Exposure – Category 3; Respiratory Tract Irritation, Skin Corrosion/Irritation – Category 3; Serious Eye Damage, Eye Irritation – Category 2B; Respiratory Sensitizer – Category 1

NFPA:



Potential Health Effects

Inhalation

Acute (immediate) – May cause irritation

Chronic (delayed) – According to ACGIH, repeated and prolonged exposure to wheat flour may cause lung effects referred to as “Baker’s Lungs” or allergic sensitization resulting in what is referred to as “Baker’s Asthma”.

Skin

Acute (immediate) – Under normal conditions of use, no health effects are expected.

Chronic (delayed) – Under normal conditions of use, no health effects are expected.

Eye

Acute (immediate) – May cause irritation

Chronic (delayed) – Under normal conditions of use, no chronic effects are expected.

Ingestion

Acute (immediate) – No effects are expected for most people. Listed as food allergen.

Chronic (delayed) – Under normal conditions of use, no chronic effects are expected.

Section 3 – Composition/Information on Ingredients

Hazardous Components

Chemical Name	Identifiers	%(weight)	LD50/LC50	Classifications According to Regulation/Directive	Comments
Barley flour	NDA	100%	NDA		

Section 4 – First Aid Measures

Inhalation

- Get medical attention if symptoms occur. Remove to fresh air.

Skin

- No data available.

Eye

- Get medical attention if symptoms occur. If contact with eyes directly, flush with gently flowing fresh water thoroughly.

Ingestion

- Get medical attention if symptoms occur.

Section 5 – Fire Fighting Measures

Extinguishing Media

- Dry chemical, CO2, foam or water fog.

Unsuitable Extinguishing Media

- High pressure water spray may cause a combustible dust cloud.

Firefighting Procedures

- FIRES INVOLVING TANKS OR CAR/TRAILER LOADS: ALWAYS stay away from tanks engulfed in fire. LARGE FIRES: Move containers from fire area if can accomplish without risk.

Unusual Fire & Explosion Hazards

- Fine dust (typically less than 420 microns) associated with this product may represent a combustible dust hazard. Ignition energy (Kst value) vary with particle size.

Hazardous Combustion Products

- None known

Protection of Firefighters

- Wear positive pressure self-contained breathing apparatus (SCBA).

Flash Point

- Not relevant.

Explosion Limits

Upper

- Not relevant

Lower

- Approx 50 gr/m3 (0.50 oz/cu ft)

Auto-Ignition Temperature

- 390 to 500° F (199 to 260° C)

Section 6 – Accidental Release Measures

Personal Precautions

- No data available.

Emergency Procedures

- Keep unauthorized personnel away.

Environmental Precautions

- Avoid run off to waterways and sewers.

Containment/Clean-up Measures

- Carefully shovel or sweep up spilled material and place in suitable container. Use appropriate Personal Protective Equipment (PPE)

Prohibited Materials - No data available.

Section 7 – Handling and Storage

Handling - Follow good manufacturing practices when handling this product. Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Refer to NFPA 61: Standard for the Prevention of Fires and Dust Explosions in the Agricultural and Food Processing Facilities

Storage - No data available.

Special Packaging Materials - None required.

Incompatible Materials or Ignition Sources - None known.

Section 8 – Exposure Controls/Personal Protection

Personal Protective Equipment

Respiratory - Follow the OSHA respirator regulations found in 29 CFR 1910.134 or the European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

Eye/Face - Protective safety glasses recommended.

Hands - No data available.

Skin/Body - None required for normal handling.

General Industrial Hygiene Considerations - Persons who handle grain products must follow good hygienic practices (i.e. wash frequently, and wear clean clothing)

Engineering Measures/Controls - Adequate ventilation systems as needed to control concentrations of airborne contaminants below applicable threshold limit values.

Exposure Limits/Guidelines			
	Result	ACGIH	United States - California
Milled Wheat Products as Flour dust	TWAs	0.5 mg/m3 TWA (inhalable fraction) <i>as Flour dust</i>	0.5 mg/m3 PEL <i>as Flour dust</i>

Exposure Control Notations
ACGIH – Milled Wheat Products as Flour dust: Sensitizers

Exposure Limits Supplemental
ACGIH – Milled Wheat Products as Flour dust: TLV Basis – Critical Effects: (asthma, bronchitis, upper respiratory tract irritation)

Environmental Exposure Controls
No data available

Section 9 – Physical and Chemical Properties

Material Description			
Physical Form	Solid	Appearance/Description	No data available.
Color	Yellowish.	Odor	Barley.
Taste	No data available.	Particulate Type	Not relevant
Particulate Size	Not relevant	Aerosol Type	Not relevant
Odor Threshold	Not relevant	Physical and Chemical Properties	Not relevant
General Properties			
Boiling Point	Not relevant	Melting Point	Not relevant
Decomposition Temperature	Not relevant	Heat of Decomposition	Not relevant
pH	Not relevant	Specific Gravity/Relative Density	Not relevant
Density	Not relevant	Bulk Density	Not relevant
Water Solubility	Not relevant	Solvent Solubility	Not relevant
Viscosity	Not relevant		
Volatility			
Vapor Pressure	Not relevant	Vapor Density	Not relevant
Evaporation Rate	Not relevant	VOC (Wt.)	Not relevant
VOC (Vol.)	Not relevant	Volatiles (Wt.)	Not relevant
Volatiles (Vol.)	Not relevant		
Flammability			
Flash Point	Not relevant	UEL	Not relevant
LEL	Not relevant	Auto-Ignition	390 to 500 F(199 to 260 C)
Self-Accelerating Decomposition Temperature (SADT)	Not relevant	Heat of Combustion (ΔH_c)	Not relevant
Burning Time	Not relevant	Flame Duration	Not relevant
Flame Height	Not relevant	Flame Extension	Not relevant
Ignition Distance	Not relevant		
Environmental			
Half-Life	Not relevant	Octanol/Water Partition coefficient	Not relevant
Coefficient of water/oil distribution	Not relevant	Bioaccumulation Factor	Not relevant
Bioconcentration Factor	Not relevant	Biochemical Oxygen Demand BOD/BOD5	Not relevant
Chemical Oxygen Demand	Not relevant	Persistence	Not relevant
Degradation	Not relevant		

Section 10 – Stability and Reactivity

Stability	- Stable when kept dry under normal temperatures and pressures.
Hazardous Polymerization	- Hazardous polymerization will not occur.
Conditions to Avoid	- High humidity and/or wet conditions.
Incompatible Materials	- None known.
Hazardous Decomposition Products	- None known.

Section 11 – Toxicological Information

Other Information	- This product has not been tested as a separate entity. No specific toxicological data is available for the ingredients.
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Section 12 – Ecological Information

Ecological Fate	- No data available
Persistence/Degradability	- No data available
Bioaccumulation Potential	- No data available
Mobility in Soil	- No data available
Other Information	- Product has not been studied as distributed

Section 13 – Disposal Considerations

Product	- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.
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Section 14 – Transportation Information

DOT	- Not regulated as a hazardous material.
IATA	- Not regulated as a dangerous good.

Section 15 – Regulatory Information

Not any known regulatory list for hazardous materials.

Section 16 – Other Information

Preparation Date	- 12/31/2015
Last Revision Date	- 11/05/2018
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