Bioscience, Inc.
Environmental Products & Services
ISO 9001:2015 Certified

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard 29 CFR 1910.1200; GHS 4th Revision

SECTION 1 IDENTIFICATION

Product Name	**MICROCAT®-AD Nutrient Blend for Anaerobic Digesters**
Identified uses	Stimulating (and re-establishing, if necessary) biological activity in anaerobic systems, in general, and anaerobic sludge digesters in particular.
Company	Bioscience, Inc. 2201 Hangar Place, Suite 200 Allentown, PA 18109 Phone: (800) 627-3069 (484) 245-5232
Website	www.bioscienceinc.com

SECTION 2 HAZARD IDENTIFICATION

Hazard Classification	Category	H-statement
Skin Irritant	2	H315
Eye irritant	2A	H319
Specific Target Organ Toxicity - Repeated	2	H373

Hazard pictograms

Signal words Warning

Hazard statements
Causes skin irritation (H315)
Causes serious eye irritation (H319)
May cause damage to organs through prolonged or repeated exposure (H373)

Precautionary statements
P260 – Do not breathe dust.
P264 – Wash thoroughly after handling;
P280 – Wear protective gloves, eye, and face protection;
P302 + P352 – IF ON SKIN: Wash with plenty of soap and water;
P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing;
P332 + P313 – If skin irritation occurs: get medical attention/advice;
P337 + P313 – If eye irritation persists: Get medical attention/advice;
P362 + P364 – Take off contaminated clothing and wash before reuse
P314 – Get medical advice if you feel unwell.
P501 – Dispose of contents/container in accordance with local, state, and Federal regulations.

Further information
Persons who have a compromised immune system or a history of severe allergic reactions/response should avoid contact with open wounds and/ or breathing dust or mist from product handling or manufacturing process. Crystalline silica is a known cause of silicosis (a non-cancerous lung disease). Prolonged and/or repeated inhalation must be avoided.

Other hazards

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Identity
Common name
Synonyms Calcium and Magnesium carbonates, inorganic micronutrients and organic nutrients with non-pathogenic, naturally occurring microorganisms absorbed on wheat bran and corn gluten

Hazardous Components

Chemical Name (Concentration)	**CAS-No**
Dolomite (30 – 40%)	16389-88-1
Urea (1 – 3%)	57-13-6
Protease (1%)	9014-01-1
Amylase (1%)	9000-90-2
Crystalline silica (<0.4%)	14808-60-7

Non-Hazardous Components

Name	CAS-No
Wheat bran	116469-86-4
Corn gluten	66071-96-3
Diatomaceous earth	91053-39-3
Diammonium phosphate (<2%)	7783-28-0

SECTION 4 FIRST-AID MEASURES

Eye	Flush eyes with water for at least 15 minutes, seek medical attention.
Skin	Wash skin with soap and water, remove contaminated clothing.
Inhalation	Remove individual to fresh air. If allergic response or difficulty breathing is exhibited, seek medical attention.
Ingestion	If swallowed, rinse mouth and throat with tap water, if symptoms persist consult a physician
Most important symptoms/effects, acute and delayed	Eye – redness, soreness Skin – Redness, rash, burning, dry, itching skin Inhalation – Nasal irritation, headache, cough, shortness of breath Ingestion – Malaise, dizziness, and nausea, gastrointestinal burns
Further information	

SECTION 5 FIRE-FIGHTING MEASURES

Suitable extinguishing media	Product is not flammable, Use extinguishers suited to surrounding area
Specific hazards arising from the chemical	
Special protective actions for fire-fighters	

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures	Provide sufficient ventilation, spilled product should be removed immediately to avoid formation of dust
Environmental precautions	
Methods and materials for containment and cleaning up	Sweep up, dispose to landfill.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling	Avoid formation of dust. Provide adequate ventilation of the room when handling. Provide eyewash capability.
Conditions for safe storage, including any incompatibilities	No special requirements, Contains organic matter which may be explosive as a dust on very high concentrations; generally considered a low explosive hazard. Store in a suitable container.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters

Name	CAS-No	TLV (ACGIH)	PEL (OSHA)
Dolomite	16389-88-1	10 mg/m^3	5 mg/m^3
Crystalline silica	14808-60-7	0.1 mg/m^3	0.1 mg/m^3
Urea	57-13-6	10 mg/m^3 {3}*	15 mg/m^3 {5}*
Protease	9014-01-1	.00006 mg/m^3 (as pure protease)	
Amylase	9000-90-2	None established	
Diammonium phosphate	7783-28-0	10 mg/m^3 {3}*	15 mg/m^3 {5}*
Wheat bran	116469-86-4	10 mg/m^3 (nuisance dust)	
Corn gluten	66071-96-3	10 mg/m^3 (nuisance dust)	
Diatomaceous earth	91053-39-3	10 mg/m^3 (nuisance dust)	

* Specific limits not set for these chemicals. Limits are shown for Particles Not Otherwise Regulated (PNOR) or Particles Not Otherwise Classified (PNOC). First number is for total dust second number { } is for respirable dust

Personal Safety Equipment

Eye Protection	Safety goggles
Skin Protection	Wear long-sleeve shirt, trousers, safety shoes, gloves
Respiratory protection	Dust mask

Industrial Hygiene	Maintain good housekeeping. Avoid dusty conditions. Wash hands and exposed skin after contact. Avoid contact with food or food preparation surfaces. If exposure of food surfaces occurs, wash with germicidal detergent or chlorine bleach. Remove and wash contaminated clothing

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

BASIC PHYSICAL AND CHEMICAL PROPERTIES	
Appearance	Light brown granular powder
Odour	Mild fishy odor
Odour threshold	Information not available
pH	5.5 – 8.0 (5% suspension)
Melting point /Freezing Point	Information not available
Initial Boiling point and boiling point range	Does Not Apply
Flash Point	Information not available
Evaporation rate	Does Not Apply
Flammability (solid; gas)	Information not available
Upper/lower flammability or explosive limits	Does Not Apply
Vapour pressure	Does Not Apply
Vapour density	Does Not Apply
Relative density	Information not available
Solubility (ies)	Insoluble
Partition coefficient: n-octanol/water	Does Not Apply
Auto-ignition temperature	Does Not Apply
Decomposition temperature	Information not available
Viscosity	Does Not Apply
Other Physical/Chemical Properties	Information not available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	Stable under normal storage and usage conditions
Possibility of hazardous reactions	Information not available
Conditions to avoid	Freezing or temperature greater than 100°F (40°C)
Incompatible materials	Strong acids, bases or oxidizers
Hazardous decomposition products	Information not available

SECTION 11 TOXOLOGICAL INFORMATION

Acute toxicity	Information not available
Skin Corrosion/Irritation	May cause skin irritation
Serious Eye Damage/Irritation	May cause eye irritation or redness
Respiratory or Skin Sensitization	May cause irritation of respiratory tract
Ingestion	May cause gastric disturbance, irritation
Germ Cell Mutagenicity	Information not available
Carcinogenicity	Crystalline silica probably carcinogenic NTP: no IARC Monographs: no OSHA Regulated: no Product may contain <1% crystalline silica (CS). IARC has classified CS as probably carcinogenic for humans (2A). NTP lists CS as a substance which may reasonably be anticipated to be a carcinogen. CS is a known cause of silicosis (a non-cancerous lung disease). This product contains crystalline silica which is considered a health hazard by inhalation. IARC reviewed the literature (Oct., 1996) for polymorphs of crystalline silica and determined that: There is sufficient evidence in humans for the carcinogenicity of inhaled crystalline silica in the forms of quartz and cristobalite from occupational sources. There is inadequate evidence in humans for the carcinogenicity of amorphous silica. There is sufficient evidence in experimental animals for the carcinogenicity of quartz and cristobalite. There is limited evidence in experimental animals for the carcinogenicity of tridymite. There is inadequate evidence in experimental animals for the carcinogenicity of diatomaceous earth. There is inadequate evidence in experimental animals for the carcinogenicity of synthetic amorphous silica. Overall evaluation: Inhaled crystalline silica in the form of quartz and cristobalite from occupational sources is carcinogenic to humans (Group 1).
Reproductive Toxicity	Information not available
Specific Target Organ Toxicity – Single Exposure	Information not available
Specific Organ Toxicity – Repeated Exposure	Information not available

Aspiration Hazard	Information not available
General Remarks	Enzymes in this product are non-toxic (LD 50 >2 g/kg in rats). Inhalation of dust may cause respiratory allergy in susceptible individuals

SECTION 12 ECOLOGICAL INFORMATION

Toxicity	Information not available
Persistence and degradability	Information not available
Bioaccumulative potential	Information not available
Mobility in Soil	Information not available
Other adverse effects	Application of product to water sources may stimulate algae growth.

SECTION 13 DISPOSAL CONSIDERATIONS

Methods	Dispose of in accordance with current Federal, State, and Local regulations.
Containers	n/a

SECTION 14 TRANSPORTATION INFORMATION

UN Number	Mixture not classified as Hazardous according to Regulation (EC) 1272/2008.
UN Proper Shipping Name	
Transport Hazard Class	
Packing Group (if applicable)	
Environmental Hazards	
Special Precautions for User	
Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code	
DOT Proper Shipping Name	Chemicals not otherwise indexed (NOI) non-hazardous

SECTION 15 REGULATORY INFORMATION

EU Directive 2000_54 regarding risks from biological agents: micro-organisms in Class 1 may be used without restriction.

Canada WHIMS: controlled product is hazard class D2A (respiratory sensitizer), toxic class D2B (eye irritant).

All ingredients used are listed on the USEPA TSCA Inventory list.

WGK (Water Hazards Class): 0 non-hazardous to water.

SECTION 16 OTHER INFORMATION

Key: N/A, n/a – Not available

Mixture classified as not dangerous according to Regulation (EC) 1272/2008.

Observe employment restrictions for people.

Components not precisely identified are proprietary or non-hazardous. All chemical ingredients appear on the EPA TSCA inventory.

The microbes in this product are Class 1 microbes, defined by the US Centers for Disease Control as not likely to cause disease in healthy humans and animals. However, contact with open wounds should be avoided; persons who have a compromised immune system or a history of severe allergic response should avoid contact and/or breathing dust or mist from product handling or manufacturing processes.

The information contained in this Safety Data Sheet, as of the issue date, is believed to be true and correct. However, the accuracy or completeness of this information and any recommendations or suggestions are made without warranty or guarantee. Since the conditions of use are beyond the control of our company, it is the responsibility of the user to determine the conditions of safe use of this product. The information in this sheet does not represent analytical specifications; for this information contact Bioscience, Inc. Technical Department.