Safety Data Sheet
acc. to OSHA HCS

Printing date 03/24/2026 Reviewed on 03/24/2026

1 Identification

· **Product identifier**

· **Trade name: BIO-TAM®**

· **Article number:** SD404-2-US
· **CAS Number:**
EPA Registration No.: 10163-399
Active Ingredient: Trichoderma asperellum (ICC 012) * (2.0 %)
Trichoderma gamsii (ICC 080) * (2.0 %)

* Contains a minimum of 5 x 106 colony forming units (CFU) of each Trichoderma strain i.e., Trichoderma asperellum strain ICC 012 and Trichoderma gamsii strain ICC 080)
· **Application of the substance / the mixture** Agricultural Fungicide

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Gowan Company, LLC.
P.O. Box 5569
Yuma, Arizona 85366-5569
(928) 783-8844

· **Information department:** sds@gowanco.com
· **Emergency telephone number:**
Chemtrec® Emergency Telephone 24 - Hours: (Spills, leak or fire) Inside U.S. & Canada: (800) 424-9300
Outside the U.S. & Canada: +011 (703) 527-3887

For medical emergency (ProPharma Group®): (888) 478-0798

2 Hazard(s) identification

· **Classification of the substance or mixture**


GHS07

Acute Toxicity - Oral 4 H302 Harmful if swallowed.

· **Label elements**
· **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**


GHS07

· **Signal word** Warning

· **Hazard-determining components of labeling:**
Trichoderma asperellum ICC012
Trichoderma gamsii ICC080

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· **Hazard statements**
H302 Harmful if swallowed.
· **Precautionary statements**
P262 Do not get in eyes, on skin, or on clothing.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.
P330 Rinse mouth.
P420 Store away from other materials.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Hazard description:** Harmful if absorbed through skin or swallowed. Avoid contact with skin, eyes, or clothing.
· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable in US.
· **vPvB:** Not applicable in US.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**			
CAS: 1332-58-7	Kaolin		88.3%
	Trichoderma asperellum ICC012	Sensitization - Skin 1, H317	2.0%
	Trichoderma gamsii ICC080	Sensitization - Skin 1, H317	2.0%

4 First-aid measures

· **Description of first aid measures**
· **General information:**
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.
You may also contact 1-888-478-0798 for emergency medical treatment information.
· **After skin contact:**
• Take off contaminated clothing.
• Rinse skin immediately with plenty of water for 15-20 minutes.
• Call a poison control center or doctor for treatment advice.
· **After swallowing:**
• Call a poison control center or doctor immediately for treatment advice.
• Have person rinse mouth thoroughly with water, spit out rinse water
. • Have person sip a glass of water if able to swallow.
• Do not induce vomiting unless told to do so by a poison control center or doctor.
• Do not give anything by mouth to an unconscious person.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

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5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
CO2, extinguishing powder, ABC chemical powder, BC type extinguisher or sand. Do not extinguish with water. Fight larger fires with alcohol-resistant foam.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Measures to be followed for those who do not intervene directly:No action shall be taken involving any personal risk or without the appropriate training. Evacuate the surrounding areas. Prevent the entry of foreign and unprotected personnel. Do not touch or walk on the spilled material. Avoid breathing vapors or mists. Provide adequate ventilation. Wear an appropriate respirator in case of inadequate ventilation. Wear the appropriate personal protective equipment and follow the protective measures indicated in sections 7 and 8.
Evaluate the consultation of an expert.
Measures to be followed for those who intervene directlyIf the management of the spill requires the use of special clothing, keep in mind any information in Section 8 relating to suitable and unsuitable materials.
· **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Dispose contaminated material as waste according to item 13.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
· **Protective Action Criteria for Chemicals**

· **PAC-1:**
None of the ingredients are listed.

· **PAC-2:**
None of the ingredients are listed.

· **PAC-3:**
None of the ingredients are listed.

7 Handling and storage

· **Handling:**
· **Precautions for safe handling** No special precautions are necessary if used correctly.
· **Information about protection against explosions and fires:** Keep ignition sources away - Do not smoke.

· **Conditions for safe storage, including any incompatibilities**
Store at temperatures below 75°F, under well-vented and dry storage conditions. Do not store under moist conditions. Do not allow product to freeze. Store the tightly resealed container in a dry place and not exposed directly to sun. Product life is approximately 15 months when stored as directed.
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** Store only in the original receptacle.
· **Information about storage in one common storage facility:** Keep away from food, drink and feed.
· **Further information about storage conditions:** Keep receptacle tightly sealed.

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· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see section 7.

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
At this time, the other constituents have no known exposure limits.

CAS: 1332-58-7 Kaolin	
PEL	Long-term value: 15* 5** mg/m³ *total dust **respirable fraction
REL	Long-term value: 10* 5** mg/m³ *total dust **respirable fraction
TLV	Long-term value: 2* mg/m³ E; respirable particulate matter, A4

· **Regulatory information**
PEL: Guide to Occupational Exposure Values (OSHA PELs)
REL: Guide to Occupational Exposure Values (NIOSH RELs)
TLV: Guide to Occupational Exposure Values (TLV)

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**
Wash hands before breaks and at the end of work.
Keep away from foodstuffs, beverages and feed.

· **Breathing equipment:**
Wear a dust/mist filtering respirator meeting the NIOSH standards of at least N-95, R-95, or P-95.

· **Protection of hands:**



Protective gloves

· **Material of gloves** Waterproof gloves

· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:** Not required

· **Body protection:**
Applicators and other handlers must wear:
- Long sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks

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9 Physical and chemical properties

· **Information on basic physical and chemical properties**
· **General Information**
· **Appearance:**
· **Form:** Powder
· **Color:** According to product specification
· **Odor:** Non-distinctive
· **Odor threshold:** Not determined

· **pH-value at 20 °C (68 °F):** 4.38

· **Change in condition**
· **Melting point/Melting range:** Undetermined
· **Boiling point/Boiling range:** Undetermined

· **Flash point:** Not applicable

· **Flammability:** Not determined

· **Decomposition temperature:** Not determined

· **Ignition temperature:** Product is not self-igniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**
· **Lower:** Not determined
· **Upper:** Not determined

· **Vapor pressure at 20 °C (68 °F):** 0 hPa

· **Density:** Not determined
· **Relative density** Not determined
· **Vapor density** Not applicable
· **Evaporation rate** Not applicable.

· **Solubility in / Miscibility with**
· **Water:** Dispersible.

· **Partition coefficient (n-octanol/water):** Not determined

· **Viscosity:**
· **Dynamic:** Not applicable
· **Kinematic:** Not applicable

· **Other information** No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

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11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· LD/LC50 values that are relevant for classification:		
Oral	LD50	>2,000 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rat)
Inhalative	LC50/4 h	>5.2 mg/l (rat)

Trichoderma asperellum ICC012		
Oral	LD50	>2,000 mg/kg (rat) Metodo Linee Guida OECD n. 401

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:**
Not sensitizing (Guinea Pig)
Method: OECD Guide Lines n. 406
· **Additional toxicological information:** Harmful

· **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)
None of the ingredients are listed.

· NTP (National Toxicology Program)
None of the ingredients are listed.

· OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients are listed.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:**
Algae-
EC50 (48h): < 100 mg/l
EC100 (48h): > 100 mg/l
· **Persistence and degradability**
Persistence:
It's expected to be not persistent, due to trichoderma data known in bibliography
Degradability: not known
· **Behavior in environmental systems:**
· **Bioaccumulative potential**
Data referred to Trichoderma asperellum/Trichoderma gamsii:
No data available
· **Mobility in soil** Mobility is expected low, due to trichoderma data known in bibliography
· **Additional ecological information:**
· **General notes:**
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable

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· **vPvB:** Not applicable
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

· **Uncleaned packagings:**
· **Recommendation:**
Non-refillable, non-rigid container. Do not reuse or refill this container. Completely empty bag into application equipment. Then offer for recycling if available or dispose of empty bag in a sanitary landfill or by incineration or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

For rigid, non-refillable containers (2.5 to 5 gallons):
Nonrefillable container. Do not reuse or refill this container. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container one-fourth full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling, if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of resulting smoke.

For rigid, non-refillable containers that are too large to shake (with capacities greater than 5 gallons):
Nonrefillable container. Do not reuse or refill this container. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container one-fourth full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling, if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of resulting smoke.

Pressure Rinse Procedures (all sizes)
Pressure rinse as follows: Empty the remaining contents into application equipment or a tank mix and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· **UN-Number**	
· **DOT, ADR, IMDG, IATA**	Void
· **UN proper shipping name**	
· **DOT, ADR, IMDG, IATA**	Void

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· **Transport hazard class(es)**

· **DOT, ADR, ADN, IMDG, IATA**
· **Class** Void

· **Packing group**
· **DOT, ADR, IMDG, IATA** Void

· **Environmental hazards:** Not applicable

· **Special precautions for user** Not applicable

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable

· **UN "Model Regulation":** Void

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
EPA /FIFRA Information:
This chemical is a pesticide product registered by the Environmental Protection Agency (EPA) and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals.

· **Marketing authorization number:**

· **SARA Title III**

· **Section 355 (extremely hazardous substances):**
None of the ingredients are listed.

· **Section 313 (Specific toxic chemical listings):**
None of the ingredients are listed.

· **TSCA (Toxic Substances Control Act):**

CAS: 1332-58-7	Kaolin	ACTIVE

· **Hazardous Air Pollutants**
None of the ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients are listed.

· **Carcinogenicity categories**

· **EPA (Environmental Protection Agency)**
None of the ingredients are listed.

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· **TLV (Threshold Limit Value)**		
CAS: 1332-58-7	Kaolin	A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients are listed.

· **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**
Not applicable

· **Signal word**
(USA EPA) CAUTION

· **Hazard-determining components of labeling:**
Trichoderma asperellum ICC012
Trichoderma gamsii ICC080

· **Hazard statements**
H302 Harmful if swallowed.

· **Precautionary statements**

P262	Do not get in eyes, on skin, or on clothing.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312	If swallowed: Call a poison center/doctor if you feel unwell.
P330	Rinse mouth.
P420	Store away from other materials.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **NFPA ratings (Scale 0-4)**



Health = 2
Fire = 0
Reactivity = 0

HAZARD INDEX:
4 Severe Hazard
3 Serious Hazard
2 Moderate
1 Slight Hazard
0 Minimal Hazard

· **Department issuing SDS:** Systems Design and Control
· **Contact:** sds@gowanco.com

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· **Date of preparation / last revision** 03/24/2026 / 2.0

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
.
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute Toxicity - Oral 4: Acute toxicity – Category 4
Sensitization - Skin 1: Skin sensitisation – Category 1

· **Sources** Bio-Tam and Tenet are trademarks of Gowan Company LLC