



Material Safety Data Sheet

BERDE-KAWAY AGRIVENTURES
CORPORATION

MSDS Ref:

BK-MSDS-NGP-01

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Revision:

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1. Product Overview and Company Identification

Product Name: Napier Grass Pellets
Technical Data Sheet: BK-TDS-NGP-01
Chemical Name: Not Applicable
Intended Use: Combustion in a solid fuel furnace and/or boiler for heat generation
Packaging: Loose / Bulk supply
Product Supplier: Berde-Kaway Agriventures Corporation
Supplier Address: 114km Maharlika Highway, Purok 7, Sto. Cristo, Sariaya 4322, Quezon Province, Philippines.
Supplier Telephone: +63 (0) 42 731 3032
Supplier Email: info@berde-kaway.com
Supplier Website: www.berde-kaway.com
Emergency Contact: +63 (0) 42 731 3032 or +63 (0) 995 971 8837

2. Composition

Napier Grass: 100%
Pure Coconut Oil: Trace

3. Hazard Identification

Classification: Aspiration Hazard
Combustible Dust
Signal Word: Danger
Hazard Statement: May Generates carbon-monoxide (CO) and cause oxygen (O₂) depletion
Signal Word: Warning
Hazard Statement: May form combustible dust concentrations in air
Other Hazards: Contact with the eyes may cause reversible physical irritation.
Overexposure to dusts, mists or vapours may produce slight irritation of the respiratory system. Studies have shown no evidence of the raw material dust being carcinogenic however as with all fine dusts it could potentially be hazardous and should be controlled.
Toxicity: May Generates carbon-monoxide (CO) and cause oxygen (O₂) depletion

4. First Aid Measures

Carbon Monoxide (CO) Inhalation: Symptoms may include: Headache, dizziness, convulsion at lower exposures, to unconsciousness and death at higher acute exposures. Evacuate person to fresh air, if symptoms persist seek medical advice
Oxygen (O₂) depletion Symptoms may include: Dizziness, mental confusion, loss of judgement, loss of coordination, weakness, nausea, fainting, loss of consciousness and death. Evacuate person to fresh air, if symptoms persist seek medical advice
Dust Inhalation: Remove to fresh air, if breathing difficulties or severe coughing occur, seek medical advice.
Skin Contact: Can cause irritation, wash skin with soap and water, if a rash develops

Eye Contact:	seek first aider and / or medical advice Rinse immediately with plenty of water for 15 minutes. Product can cause eye abrasions
Ingestion:	Do not ingest water or induce vomiting. No harmful effects, however, you should seek medical advice
Special Treatment:	None expected under normal use If symptoms persist seek medical advice

5. Firefighting Measures

Extinguishing media:	Foam, Carbon Dioxide, Dry Powder.
Water:	Caution should be used when using water as an extinguishing media, whilst water can be very effective, it must be noted that once wet the pellets can expand to 3-4 times their size, and water should not be used where the pellets are not free to expand, such as a storage silo
Fire Hazard:	The product is not flammable but is combustible.
Explosion hazard:	Avoid generation of dust; fine dust dispersed in air in sufficient concentration, and in the presence of an ignition source is a potential dust explosion hazard.
Advice for firefighters:	Ensure pellets have space to expand before using water to extinguish and/or cool. Wear full PPE including respiratory protection.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	
General Measures:	Collect as much as possible in clean container for (preferably) re-use or disposal. Dust Deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration.
For non-emergency personnel:	
Emergency Procedures:	No specific hazards.
For emergency responders:	
Protective equipment:	Equip cleanup crew with proper protection.
Emergency procedures:	Collect all waste in suitable and labelled containers and dispose according to local legislation
Environmental precautions:	
General Measures:	No additional information available
Methods and material for containment and cleaning up:	
Methods for cleaning up:	On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials. Avoid dispersal of dust in the air (i.e.. cleaning dust surfaces with compressed air). Where airborne dust is present or likely to be created - non-sparking tools should be used.

7. Handling and storage

Precautions for safe handling:	Provide good ventilation in storage & process area to prevent formation of dust and buildup of gases (section 10). Where the product is stored in poorly ventilated facilities or closed vessels, then confined space procedures must be deployed including safe access control & monitoring. Routine housekeeping should be instituted to ensure that dust does not accumulate on surfaces. Dry powders can build up static electricity charges when subjected to the friction of transfer and mixture operations. Where materials are mechanically handled provide good ventilation. Provide adequate precautions, such as electrical
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Storage conditions: grounding and bonding or inert atmospheres. Dry storage is required to stop the pellets degrading and due to possibility of spontaneous combustion from decomposing action of bacteria if the pellets are permitted to get wet. Decomposing pellets can additionally attract flies and insects, which in turn, may attract other larger pests.

Incompatible materials: Moisture, Humidity

8. Exposure controls/personal protection

Appropriate engineering controls: Ensure good ventilation of the storage and working area. It is recommended that where closed storage and/or equipment is used consideration must be given for explosion prevention and the deployment of confined space procedures as required. Ensure that dust-handling systems (such as exhaust dusts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area. Use only appropriately electrical equipment and powered industrial trucks.

Personal protective equipment:



Skin Protection: Avoid prolonged contact with skin. When direct handling wear full working clothes with long sleeves, enclosed footwear and gloves

Eye protection: Safety glasses or goggles, where there is, or likely to have, airborne dust then fully enclosed goggles are recommended

Respiratory protection: Wear appropriate dust mask.

9. Physical and chemical properties

Physical state: Solid

Colour: Dark Brown

Odour: Light odour – dry grass (not unpleasant)

Odour threshold: No data available

pH: No data available

Evaporative Rate: Not applicable

Melting Point: Not applicable

Freezing Point: Not applicable

Boiling Point: Not applicable

Flash Point: Not applicable

Auto-ignition temperature: No data available

Decomposition temperature: Not applicable

Flammability (solid, gas): No data available

Vapour pressure: Not applicable

Vapour density: Not applicable

Solubility: Decomposes from pellet to raw material powder / dust

Log Pow: Not applicable

Log Kow: Not applicable

Viscosity, kinematic: Not applicable

Viscosity, dynamic: Not applicable

Explosive properties: No data available

Oxidising properties: No data available

Explosive limits: No data available

10. Stability and reactivity

<p>Reactivity:</p> <p>Chemical stability:</p> <p>Possibility of hazardous reactions:</p> <p>Conditions to avoid:</p> <p>Incompatible materials:</p> <p>Hazardous decomposition products:</p>	<p>The residual material from the used products maybe reactive see absorbed material SDS/MSDS.</p> <p>The product is stable at normal handling and storage conditions.</p> <p>None known</p> <p>Moisture / Humidity. Possibility of spontaneous combustion from decomposing action of bacteria if product is permitted to get wet. Generation of dust and/or dust build up becoming airborne leading to a potential combustible atmosphere.</p> <p>Water / Moisture</p> <p>Carbon-monoxide (CO), carbon-dioxide (CO₂), small amounts of methane (CH₄) in combination with oxygen (O₂) depletion, oxides of nitrogen, volatile hydrocarbons including terpenes and polyaromatic hydrocarbons.</p>
<p>11. Toxicological information</p> <p>Acute toxicity:</p> <p>Skin corrosion/irritation:</p> <p>Serious eye damage/irritation:</p> <p>Respiratory or skin sensitisation:</p> <p>Germ cell mutagenicity:</p> <p>Carcinogenicity:</p> <p>Reproductive toxicity:</p> <p>Specific target organ toxicity (single exposure):</p> <p>Specific target organ toxicity (repeated exposure):</p> <p>Aspiration hazard:</p> <p>Potential Adverse human health effects and symptoms:</p>	<p>May Generates carbon-monoxide (CO) and cause oxygen (O₂) depletion</p> <p>Not classified</p> <p>Not classified</p> <p>Not classified</p> <p>Not classified</p> <p>Not classified</p> <p>Not classified</p> <p>Not classified</p> <p>Not classified</p> <p>Not classified</p> <p>Not classified</p> <p>Not classified</p> <p>May Generates carbon-monoxide (CO) and cause oxygen (O₂)</p> <p>See Section 4</p>
<p>12. Ecological information</p> <p>Toxicity:</p> <p>Persistence and degradability:</p> <p>Bio accumulative potential:</p> <p>Mobility in soil:</p> <p>Other – Effect on the Ozone Layer:</p>	<p>No additional information available</p> <p>Not established</p> <p>Not established</p> <p>No additional information available</p> <p>Small quantities of methane (CH₄) maybe emitted during storage; this has been shown to deplete the ozone layer.</p>
<p>13. Disposal considerations</p> <p>Waste Disposal recommendations:</p> <p>Ecology - waste materials:</p>	<p>Where possible reuse, otherwise dispose e in a safe manner in accordance with local/national regulations</p> <p>Avoid release to the environment.</p>
<p>14. Transport information</p> <p>Not for export from the Philippines:</p> <p>Other Information:</p>	<p>Not regulated in the Philippines for transportation</p> <p>Open bulk transport should be covered to avoid accidental spillage and/or dust release and to protect from moisture</p>

	ingress
Transport by road:	No additional information available
Transport by sea:	No additional information available
Transport by air:	No additional information available

15. Regulatory information

Not for export from the Philippines:
Philippines Regulations: No additional information available

16. Other information

Other Information:	Refer to National and International guideline and standards for the Prevention of Fire and Dust explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling.
Further Information:	It is recommended that all users storing and / or using the product reviews the publication "Health and Safety Aspects of Solid Biomass Storage, Transportation and Feeding" issued by IEA Bioenergy (or later updates)
Consideration	All users storing and / or using the product should carry out a detailed risk assessment for the storage and containment of the product including consideration of ventilation requirements and / or deploying confined space procedures.

This MSDS applies only to wood pellets not containing any additives and/or binders and which are manufactured or supplied by the organization named in Section 1 herein. The information in this MSDS is based on consensus by occupational health and safety professionals, manufacturers of biomass pellets, raw material suppliers, and other sources, and is believed to be accurate or otherwise technically correct. No warranties are expressed or implied, and no liabilities are assumed, by the manufacturer or supplier, regarding the completeness or accuracy of the information herein, or as to the merchantability or fitness of the pellets for a particular purpose.

The purchaser and/or user are solely responsible for ensuring that the information and data given is applicable and that the latest version of the MSDS is used, and for determining the suitability of the pellets for their purposes. The purchaser and/or user assumes all responsibility for using and/or handling the pellets in accordance with all applicable regulations and laws, standards, guidelines and best practices, and further assumes all risk of injury, loss, damage or expense, resulting from the use of or reliance upon the information contained herein. The purchase and/or user is also solely responsible for analysis, assessment and SDS/MSDS generation (absorbed materials) for any byproducts created from their use of the pellets.

The manufacturer and/or supplier are not in any way responsible for any direct, indirect, special, incidental, or consequential damage, or any other damages whatsoever and however caused, arising out of or in any way.