

MATERIAL SAFETY DATA SHEET



Dated—April 2021

Section 1—Identification: Product identifier and chemical identity

COMPANY DETAILS:

Company: Key 2 Group Limited

Address: JBD Industrial Park, Rowsley Station Rd, Maddingly, VIC.

Telephone Number: +61 2 9639 4553

E-mail: info@key2group.com

PRODUCT: Key 2 Bio

Other names: Shamantra Green, Shamantra Bio

Use: Remediation of contaminants including hydrocarbon liquids, PCBs, radionuclides, heavy metals, many hazardous chemicals and toxic waste

Emergency Telephone Number: +61 407 559 300

Section 2—Hazard(s) identification

NON-HAZARDOUS SUBSTANCE

NON-DANGEROUS GOODS

- Key 2 Bio is not classified as hazardous according to the hazardous substance's classification criteria of Worksafe Australia.
- Carbon compounds have been exempted from the Hazardous Goods regulations for road and rail transport and storage within Australia.
- Dust may be respirable (particles small enough to go into the lungs when breathed in).

International Safety Phases

S3/14: Keep in a cool place away from moisture

S8: Keep dry

S16: Keep away from sources of ignition – no smoking

S22: Do not breathe dust

S38: In case of insufficient ventilation, wear suitable respiratory equipment

S39: Wear eye/face protection

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Section 3—Composition and information on ingredients

Processed lignite/leonardite powder

Typical Ingredients:

- Moisture: 25 - 35(%)
- Carbon: 67 to 70 (%dry basis)
- Hydrogen: 4.7 to 5.1 (%dry basis)
- Nitrogen: 0.53 to 0.66 (%dry basis)
- Sulphur (total): 0.29 to 0.42 (%dry basis)
- Ash Yield: 4.0 to 9.0 (%dry basis)
- Oxygen: 22.8 to 27.0 (%dry basis)

Section 4—First aid measures

Eye: Irrigate with water or neutral saline solution. Seek medical attention for embedded foreign bodies.

Skin: Wash off after dust contact.

Inhaled: If Key 2 Bio dust inhaled, leave area. Do not smoke as smoking aggravates symptoms.

First Aid Facilities: Water or neutral saline solution for eye wash.

Advice to Doctor: It is exceedingly unlikely that acute poisoning would develop from Key 2 Bio dust particles. Treatment would be supportive as there is no specific antidote.

Asphyxiation Hazard: In enclosed storage containers and hoppers, the oxygen level should be measured before entry due to the possible depletion of oxygen levels. Alternatively, use self-contained breathing apparatus.

Section 5—Firefighting measures

Flammability: Use flameproof fittings, earth all containers to remove the possibility of sparks from static electricity and avoid ignition sources.

Fire Extinguishing media: Not applicable

Hazchem Code: None allocated

Fire Explosion/Hazard: Good housekeeping in storage areas is important to minimise build-up of dust areas. Always wear eye and breathing protection.

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Section 6—Accidental release measures

Spills and Disposal:

- Wetting down before sweeping up dust may be a useful control measure.
- Shovel up spillage.
- No smoking within 50 metres.
- Build-up of powder is not prone to spontaneous heating or ignition but because it is <100micron dust is subject to being blown into the atmosphere.
- May be disposed of as inert landfill in accordance with local authority regulations.

Section 7—Handling and storage

- Non-Flammable (DOT: Non-Hazardous)
- Ventilation: No special requirements

Storage

- Maximum Storage: 200 F (93.3C)
- Minimum Storage: None.
- Optimum Storage: 40 F (4.4C) to 120 F (48.9C).
- Phase & chemical separations: Stable

Skin and eye contact and protective clothing:

- No special equipment or clothing required, however goggles are recommended.
- If eye or skin irritation occurs, flush with fresh water.

Section 8—Exposure controls and personal protection

Exposure Standards: 10 mg/m³ for Key 2 Bio dust (8-hour TWA)

Engineering Controls: Reduce drop heights and impacts during handling to reduce dust levels. Ensure ventilation is adequate to maintain concentrations of dust in air below exposure standards.

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Personal Protection: Goggles with side shields and dust mask recommended during handling of bulk product when dust is generated.

Section 9—Physical and chemical properties

- Appearance:** Dark Brown Powder of less than 100micron
- Specific Gravity:** 1.16 - 1.24 g/cm³ (dependent on particle size)
- Flammability Limits:** Not applicable
- Solubility in Water (g/L):** Non-Soluble
- Other Properties:** Refer SGS Report stating “the substance does not propagate combustion... It is not readily combustible”: Solid of division 4.1
- Flash Point (ASTM D-56): N/A (Solid)
 - Pour Point (ASTM D-97): N/A (Solid)
 - Viscosity (ASTM D-445): N/A (Solid)
 - Specific Gravity (ASTM D1298): 0.659 g/cc @ 60 F (15.6C)
 - pH (ASTM D-1293): N/A (Solid)
 - Surface Active Agents: Proprietary surface modification
 - Solvents: N/A
 - Additives: N/A
 - Solubility in Water: Not soluble in water
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Chemical Composition

Key 2 Bio is classified under the CHONS (Carbon, Hydrogen, Oxygen, Nitrogen & Sulphur) classification.

COMPONENT **% WT.**

CARBON	55-75
HYDROGEN	4-10
OXYGEN	5-30
NITROGEN	0.5-5.0
SULPHUR	0.5-5.0

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Section 10—Stability and reactivity

Chemical Stability: Chemically stable

Condition to Avoid: Keep dry
Avoid dust generation

Incompatible Materials: None

Hazardous Reactions: None

Section 11—Toxicological information

Health Effects

Toxicity Key 2 Bio is Non-toxic.

Acute Swallowed: Too dry to swallow any volume.

Eye: Nuisance only. Dust causes mild eye irritation.

Skin: Nuisance only. Dust is not absorbed through skin.

Inhaled: Not a serious respiratory hazard, although heavy exposure to Key 2 Bio dust causes symptoms of low-grade breathlessness, wheeze and phlegm. Smoking appears to aggravate symptoms. No evidence of statistical or clinical difference in lung function parameters.

Chronic: There have been no reports in the literature of health effects in workers arising from long term exposure to lignite-based humus products. No animal tests have been conducted for long term effects. Monitoring conducted by the former State Electricity Commission of Victoria (SECV) over many years has found no chronic effects from exposure to lignite dust.

Section 12—Ecological information

Persistence and Degradability: Product has high degradability in a landfill situation.

Mobility: A low mobility would be expected in a landfill situation.

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Section 13—Disposal considerations

- Recover spilled material by shovelling into containers and using mechanical sweepers but avoid generating dust.
- Powdered dust is biodegradable. Carbon powder is very slowly wetted by water and tends to float on the water surface.
- May be disposed of as inert landfill in accordance with local authority regulations

Section 14—Transport information

- Transporting of Key 2 Bio powder is best in bulk bags, waterproof containers or drums.
- Non-Flammable (DOT: Non-Hazardous)

Section 15—Regulatory information

UN Number: 1325
Hazchem Code: Not applicable
Dangerous Goods Class: 4.1, (flammable solids, organic)
Manufacturer's Product Code: Key 2 Bio

Section 16—Any other relevant information.

Shelf Life:

- >3 years when stored in sealed silos, poly drums, poly bags or totes.