MSDS according to EU regulations number 453/2010 of 20 May 2010.

{product name} pellets

Revision number	Revision date	Author
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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Name: *{product name}*

Description: Pellets made from thermally treated woody biomass.

Appearance: Brown / black coloured cylindrical pellets of 6-12 mm diameter up to 50 mm length.

1.2. Relevant identified uses of the substance or mixture and uses advised against

Energy source, for example in coal fired power plants.

1.3. Details of the supplier of the safety data sheet

{Company name}
{Company address}
{Postal code, City}
{Country}
{Tel number}
{Email address for a competent person, responsible for the MSDS}

1.4. Emergency telephone number

{Emergency telephone number}

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Skin and eye irritation, cat. 2; STOT (single exposure): respiratory tract irritation, cat. 3:

H315: Causes skin irritation
H320: Causes eye irritation
H335: May cause respiratory irritation

Self-heating substances, cat. 1:

H251: Self-heating; may catch fire

Xi (irritant):

R36: irritating to the eyes
R37: irritating to the respiratory system
R38: irritating to the skin

Fire / explosion risk:

- Concentrated airborne dust may present an explosion hazard;
- The product may be subject to spontaneous heating.

Low oxygen risk:

- Ventilate before entry;
- Always measure carbon monoxide and oxygen in enclosed storage areas.

Eyes: Dust may cause irritation to the eyes.
Skin: May cause irritation to the skin.
Ingestion: Ingestion may cause gastrointestinal irritation.
Inhalation: May cause irritation to the respiratory system.

2.2. Label elements

H315: Causes skin irritation
H320: Causes eye irritation
H335: May cause respiratory irritation

H251: Self-heating; may catch fire

2.3. Other hazards

Fire / explosion risk: Concentrated dust may present an explosion hazard.
The product may be subject to spontaneous heating.

Low oxygen risk and high CO risk:
Ventilate before entry.
Always measure carbon monoxide and temperature in enclosed areas.

The product is not on the list of persistent, bio accumulative and toxic (PBT) or very persistent and very bio accumulative (vPvB) substances.

SECTION 3: Composition/information on ingredients

3.1. Substances

The product consists of biomass, thermally treated at maximum 350°C in a low oxygen environment.

SECTION 4: First aid measures

4.1. Description of first aid measures

Eyes: In case of contact, immediately flush eyes with plenty of clean/drinking water for at least 15 minutes.
Skin: In case of contact, flush skin with water. Wash clothing before reuse.
Ingestion: Wash mouth with clean/drinking water.
Inhalation: Remove from further exposure. If not breathing, give artificial respiration. If breathing is difficult, trained personnel should administer oxygen. Get medical aid.

4.2. Most important symptoms and effects, both acute and delayed

Eye contact: Tearing, burning.

Skin contact: Irritation, redness, scaling, itching.
Ingestion: Possible nausea and/or vomiting.
Dust inhalation: Irritation to the lungs and mucus membrane.

There are no known chronic effects of exposure to the product to date. Heat treated wood is not listed by NTP, IARC or regulated as a carcinogen by OSHA.

4.3. Indication of any immediate medical attention and special treatment needed

There are no other measures needed than mentioned in section 4.1.

SECTION 5: Fire fighting measures

5.1. Extinguishing media

Suitable: water spray, foam, carbon dioxide and dry chemical
Unsuitable: none

5.2. Special hazards arising from the substance or mixture

- Risk of dust explosion.
- The product may be subject to spontaneous heating.
- Burning might produce irritating and/or harmful fumes and smoke. Possible decomposition products are: carbon monoxide, carbon dioxide, and unburned hydrocarbons.
- When pneumatically transported, static discharge may occur.

5.3. Advice for fire fighters

- Respiratory, skin and eye protection are required for fire fighting personnel, except for small outdoor fires.
- Full protective equipment (Bunker Gear) and self-contained breathing apparatus (SCBA) should be used for all indoor fires and any significant outdoor fires.
- Use water to wet down dust to prevent generation of dust clouds.
- In case of concentrated airborne product, keep at distance.
- Remove burned or wet The product to an open area after fire is extinguished.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- Respiratory, skin and eye protection are required for personnel.
- Remove all sources of ignition.
- Use water to wet down dust to prevent generation of dust clouds.
- In case of concentrated airborne product, keep at distance.
- Always measure carbon monoxide and oxygen in enclosed areas.

6.2. Environmental precautions

Pick up and arrange disposal without creating dust.

6.3. Methods and material for containment and cleaning up

Any method and material used should avoid creating dust and ignition.

6.4. Reference to other sections

Not applicable

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Respiratory, skin and eye protection are required for personnel.
- Handle in accordance with good industrial hygiene and safety practice.
- Remove all sources of ignition.
- Always measure carbon monoxide and oxygen in enclosed areas.
- Avoid dust formation.
- Ensure adequate ventilation.
- Wash thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

- Store in a well-ventilated area. Oxygen depletion and carbon monoxide emission can occur when material is stored in a confined space.
- Keep away from heat, sparks, flame or other sources of ignition.
- Keep away from strong oxidizing agents.
- Ventilate before entry.
- Always measure carbon monoxide and temperature in enclosed areas.

7.3. Specific end use(s)

See section 7.1 and 7.2. No other recommendations.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Because the product is new and still under development there are no national exposure limit values to date. Because of the fact that the main exposure problems might be expected from the exposure to the product dust, until reliable values for the product become available known values for general nuisance dust are given instead.

- Threshold limit value, time weighted average (TLV-TWA): 10 mg/m³ (general nuisance dust)
- Permissible Exposure Limit: 10 mg/m³ (as dust)
- European Union professional exposure limit: 3 mg/m³ (as dust).

8.2. Exposure controls

- No exposure assessment has been performed to date, because the product is new and still under development.
- If handling generates dust, use explosion proof ventilation equipment to assure airborne levels are below established exposure limits.

- Facilities storing or using the product should be equipped with an eyewash facility. Good personal hygiene practices should always be followed.

Eye protection:	Wear safety glasses or vented safety goggles.
Skin protection:	Where contact is likely, wear protective gloves.
Respiratory protection:	Wear dusk mask (P3 filter) during handling.

- The exposure to dust should be minimised by applying the measures as described in sections 5 (Fire fighting measures) and section 6 (Accidental release measures). Spilled product should be contained and disposed of as non-hazardous waste according to local waste treatment regulations.

SECTION 9: Physical and chemical properties

Because the product is new and still under development there are not many data available to date. The mentioned data in this section determined by DEKRA EXAM GmbH for Torr-Coal, according to the test standards between brackets, are single test results. Care has to be taken because of the relative validity of these data, being single measurements on one product only.

9.1. Information on basic physical and chemical properties

Appearance:	Solid, brown / black coloured
Odour:	Slight smell of charcoal
Odour threshold:	Not determined
pH:	Not applicable, *solid in normal use*
Melting/freezing point:	Not applicable, *solid in normal use*
Initial boiling point/range:	Not applicable, *solid in normal use*
Flash point:	Not applicable, *solid in normal use*
Evaporation rate:	Not applicable, *solid in normal use*
Flammability:	Not determined
Lower explosion limit:	60 g/m^3 (DIN EN 14034-3)
Vapour pressure:	Not applicable, *solid in normal use*
Vapour density:	Not applicable, *solid in normal use*
Relative density:	1,000-1,200 kg/m^3
Solubility (water):	Insoluble
Partition coefficient:	Not applicable, *solid in normal use*
Auto-ignition temperature:	127°C (DIN EN 15188)
Decomposition temperature:	Not applicable, *solid in normal use*
Viscosity:	Not applicable, *solid in normal use*
Explosive properties:	
Maximum explosion pressure:	8.9 bar (DIN EN 14034-1)
Max. rate of explosion press. rise:	135 bar.m/s (DIN EN 14034-2)
Oxidising properties:	Not applicable, *solid in normal use*

9.2. Other information

Bulk density:	600-800 kg/m^3

Glowing temperature:	250 °C (DIN EN 50281-2-1)

SECTION 10: Stability and reactivity

10.1. Reactivity

In contact with air, the product absorbs oxygen and emits carbon monoxide.

10.2. Chemical stability

The product is stable under normal ambient conditions of temperature and pressure.

10.3. Possibility of hazardous reactions

Higher temperature accelerates product decomposition.
Moisture content could accelerate product decomposition.

10.4. Conditions to avoid

Avoid dust formation, heat, flames, and sparks.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Carbon monoxide, carbon dioxide, small levels of methane, and other hydrocarbons.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity:	There is no evidence to date that the product is of acute toxicological nature.
Skin corrosion/irritation:	May cause skin irritation.
Serious eye damage/irritation:	May cause eye irritation.
Respiratory or skin sensitisation:	Is possible.
Germ cell mutagenicity:	There is no evidence to date that the product is of acute toxicological nature.
Carcinogenicity:	There is no evidence to date that the product is of acute toxicological nature.
Reproductive toxicity:	There is no evidence to date that the product is of acute toxicological nature.
STOT-single exposure:	May cause respiratory tract or skin irritation.
STOT-repeated exposure:	May cause respiratory tract or skin irritation.
Aspiration hazard:	May cause respiratory tract irritation.

Thermally treated wood is not listed by IARC, NTP and OSHA to be carcinogenic or reproductive toxic.

Effects on eyes:	Not determined

Effects through inhalation: Not determined
Effects through ingestion: Not determined
Effects on skin: Not determined

Irritation of the eyes, skin and respiratory system is possible after exposure to low levels of dust, created during the handling of the product. There is no information available on the effects of exposure to higher levels of product dust or chronic effects of prolonged exposure.

SECTION 12: Ecological information

12.1. Toxicity

There are no experimental ecological data on the toxicity of the product available to date.

12.2. Persistence and degradability

The persistence of the product in the environment is limited due to the biodegradable nature of the product.

12.3. Bio accumulative potential

There are no experimental ecological data on the bio accumulative potential of the product available to date.

12.4. Mobility in soil

Because of the solid nature of the product the mobility will be limited.

12.5. Results of PBT and vPvB assessment

Not applicable.

12.6. Other adverse effects

Not applicable.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Dispose of waste at an appropriate waste disposal facility according to current applicable laws and regulations. Appropriate waste treatment methods are landfilling and incineration.

SECTION 14: Transport information

14.1. UN number

{UN 1361 (Charcoal, non-activated; Carbon, animal or vegetable origin) or UN 3088 (Self-heating solid, organic, n.o.s.)}

14.2. UN proper shipping name

{Charcoal, non-activated (1361) or Self-heating solid, organic, n.o.s. (3088)}

14.3. Transport hazard class(es)

{Transport class is either 4.1 or 4.2. Still to be determined.}

14.4. Packing group

{ Packing group is either 2 or 3. Still to be determined.}

14.5. Environmental hazards

Road and rail (ADR/RID):	*{Still to be determined}*
Air (ICAO/IATA):	*{Still to be determined}*
Vessel (IMO/IMDG/ADNR):	*{Still to be determined}*

14.6. Special precautions for user

The product is expected to be not flammable under normal conditions of use, but is combustible and will help sustain a fire.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Not applicable.

15.2. Chemical safety assessment

Not applicable.

SECTION 16: Other information

Revision: This Safety Data Sheet is a draft version for the product.

Abbreviations:

ADNR: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

IARC: International Agency for Research on Cancer.
IATA: International Air Transport Association.
ICAO: Technical Instructions for the Safe Transport of Dangerous Goods by Air.
IMDG: International Maritime Dangerous Goods.
IMO: International Maritime Organization.
NTP: National Toxicology Program.
OSHA: Occupational Safety and Health Administration.
PBT: Persistent, Bio accumulative and Toxic substance.
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.
SCBA: Self-Contained Breathing Apparatus.
STOT: Specific Target Organ Toxicity.
TLV-TWA: Threshold Limit Value, Time Weighted Average.
vPvB: Very Persistent and Very Bio accumulative substance.

R-phrases, hazard statements, safety phrases:
R36: Irritating to the eyes.
R37: Irritating to the respiratory system.
R38: Irritating to the skin.

H315: Causes skin irritation.
H320: Causes eye irritation.
H335: May cause respiratory irritation.
H251: Self-heating; may catch fire.

S16: Keep away from sources of ignition – No smoking.
S22: Do not breathe dust.
S24/25: Avoid contact with skin or eyes.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28: After contact with skin, wash immediately with plenty of soap and water.
S38: In case of insufficient ventilation, wear suitable respiratory equipment.

Information, recommendations, and suggestions appearing herein concerning this product are to date and taken from sources or based upon data believed to be reliable and reasonable care has been taken in the preparation of this information.