Material Safety Data Sheet

1. Chemical Product and Supplier Identification
   - Product Name: Calcined Anthracite
   - Other name(s): Coal, Anthracite, Calcined * Coal
   - Recommended Use: Fuel
   - Supplier: Well United Resources Limited
   - Street Address: 1401-2, 11/F, Rightful Centre, 11-12 Tak hing Street, Jordan, Hong Kong.
   - Telephone Number: +852 2653 9183 / +852 6306 9791
   - Fax number: +852 3464 8444

2. Hazards Identification
   - Emergency Overview:
     Solid, granular. Gray to black. Odorless. Material will burn if ignited. Dust or fines dispersed in the air can be explosive.
     Dust: Can cause irritation of the eyes, skin and upper respiratory tract. Combustion can generate toxic and irritating gases. Gases and vapors: Can cause irritation of the respiratory tract. Acute overexposures: gases and vapors: Can cause reduced ability of the blood to carry oxygen (carboxyhemoglobin), difficulty breathing, narrowing of the airways, the accumulation of the fluid in the lungs (pulmonary edema), coma and death.

   Potential Health Effects
   The following statements summarize the health effects generally expected in cases of overexposures. User specific situations should be assessed by a qualified individual.
   Additional health information can be found in Section 11.
   - Eyes: Dust: Can cause mechanical irritation.
   - Skin: Dust: Can cause mechanical irritation.
Inhalation:
Dust: Can cause irritation of the upper respiratory tract. Chronic overexposures: Can cause chronic bronchitis, scarring of the lungs (pulmonary fibrosis) and lung cancer.

Combustion can generate toxic and irritating gases. Gases: Can cause irritation of the respiratory tract. Acute overexposures: Gases and vapors: Can cause headache, dizziness, fatigue, reduced ability of the blood to carry oxygen (carboxyhemaglobin), difficulty breathing, narrowing of the airways, the accumulation of fluid in the lungs (pulmonary edema), coma and death. Chronic overexposures: Sulfur dioxide: Can cause bronchitis and erosion of dental enamel.

Carcinogenicity and Reproductive Hazard
Can present a cancer hazard (Silica, crystalline quartz). Does not present any reproductive hazards.

Medical conditions aggravated by exposure to product
Dust from processing: Asthma, chronic lung disease, and skin rashes.

3. Composition/Information on Ingredients
Composition comments
Complete composition is provided below and may include some components classified as non-hazardous.

<table>
<thead>
<tr>
<th>Components</th>
<th>Cas #</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthracite, calcined</td>
<td>68187-59-7</td>
<td>&gt;=99</td>
</tr>
<tr>
<td>Silica, crystalline quartz</td>
<td>14808-60-7</td>
<td>0 - 1</td>
</tr>
<tr>
<td>Silica, amorphous</td>
<td>112926-00-8</td>
<td>0 - 1</td>
</tr>
</tbody>
</table>
Additional Information

Additional compounds which may be formed (during combustion/decomposition) are listed in Section 8.

4. First Aid Measures

First Aid procedures

Eye contact: Dust from processing: Rinse eyes with plenty of water or saline for at least 15 minutes. Consult a physician.

Skin contact: Dust from processing: Wash with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.

Inhalation: Remove to fresh air. Check for clear airway, breathing, and presence of pulse. If breathing is difficult, provide oxygen. Loosen any tight clothing on neck or chest. Provide cardiopulmonary resuscitation for persons without pulse or respirations. Consult a physician.

Most important symptoms and effects, both acute and delayed.


Notes to physician: If breathing is difficult, give oxygen.

5. Fire Fighting Measures

General fire hazards

While not considered “flammable” or “combustible” as defined by regulatory or governmental agencies, the material will burn if ignited.

Extinguishing media

Suitable extinguishing media

Dry Chemical, foam, carbon dioxide, water fog.
Unsuitable extinguishing media
Due to insufficient cooling of the burning material, carbon dioxide may be ineffective at preventing re-ignition. Use of water on burning coal pile may liberate flammable gases.

Protection of firefighter
Special hazards arising from the substance or mixture
Although a similar material has been tested and found to be non-explosive, the possibility exists that high concentrations of airborne dust generated during processing could present an explosion hazard. Dust accumulation on the floor, ledges and beams can present a risk of ignition, flame propagation and secondary explosions.

Protective equipment and precautions for firefighters
Fire fighters should wear NIOSH approved, positive pressure, self-contained breathing apparatus and full protective clothing when appropriate.

Hazardous combustion products
Combustion can generate carbon monoxide, carbon dioxide, sulfur dioxide and oxides of nitrogen.

Explosion data
Sensitivity to mechanical impact: Not applicable.
Sensitivity to static discharge: Not known.

6. Accidental Release Measures
Personal precautions, protective equipment and emergency procedures.
For non-emergency personnel: Avoid generating dust.

For emergency responders: No additional information.
Environmental precautions: No special environmental precautions required.
Evacuation procedures: None necessary.
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Spill or leak procedure: No special measures required.
Methods and material for containment and cleaning up.
Avoid dust formation. Pick up mechanically.

7. **Handling and Storage**

Handling: Avoid generating dust. Dust accumulation on the floor, ledges and beams can present a risk of ignition, flame propagation and secondary explosions. Do not use compressed air to remove settled material from floors, beams or equipment.
Keep away from sources of ignition – No smoking. Use with adequate explosion-proof ventilation to meet limits listed in Section 8. Wear appropriate personal protective equipment.
Storage: Keep material dry. Containerize in drums, tarped dump truck, or bulk container, so that dusting is minimal during storage and transportation. Store away from heat, sparks, flames, oxidizers and other incompatible substances.

8. **Exposure Controls/Personal Protection**

Engineering controls
If dust is generated through processing: Use with adequate explosion-proof ventilation designed to handle particulates to meet the limits listed in Section 8, Exposure Guidelines.

Personal Protective Equipment
Eye / Face protection: Wear safety glasses with side shields. Use tight fitting googles if excessive levels of dust are generated.
Skin and body protection: Wear appropriate gloves to avoid any skin injury.
Thermal hazards: Not applicable.

Respiratory protection: Use NIOSH-approved respiratory protection as specified by an Industrial Hygienist or other qualified professional. Suitable respiratory protective device recommended: N95 for dust. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other
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circumstances where air-purifying respirators may not provide adequate protection.

Environmental exposure control
No special environmental precautions required.

Hygiene Measures
Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Follow standard monitoring procedures. Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

Occupational exposure limits.

<table>
<thead>
<tr>
<th>Components</th>
<th>Cas #</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthracite, Calcined</td>
<td>68187-59-7</td>
<td>T</td>
<td>.4mg/m³</td>
<td>Respirable fraction less than 5% SiO₂</td>
</tr>
<tr>
<td>Silica, amorphous</td>
<td>112926-00-8</td>
<td>T</td>
<td></td>
<td>/m³/%SiO₂</td>
</tr>
<tr>
<td>Compounds formed during processing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ifur dioxide</td>
<td>7446-09-5</td>
<td>T</td>
<td>5 PPM</td>
<td></td>
</tr>
</tbody>
</table>

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

<table>
<thead>
<tr>
<th>Components</th>
<th>Cas #</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon monoxide</td>
<td>630-08-0</td>
<td>PEL</td>
<td>55 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Nitrogen dioxide</td>
<td>10102-44-0</td>
<td>Ceiling</td>
<td>50 PPM 9mg/m³</td>
<td></td>
</tr>
</tbody>
</table>
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US. OSHA Table Z-3 (29 CFR 1910.1000)

<table>
<thead>
<tr>
<th>Components</th>
<th>Cas #</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silica, crystalline</td>
<td>14808-60</td>
<td>T</td>
<td>0.3 mg/m³</td>
<td>Total dust.</td>
</tr>
</tbody>
</table>

Compounds Formed during processing

<table>
<thead>
<tr>
<th>Carbon monoxide</th>
<th>630-08-0</th>
<th>Ceiling</th>
<th>50 ppm</th>
<th>Indoor air Light Manufacturing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>200 ppm</td>
<td>Peak</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>25 ppm</td>
<td>Gas</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>12.5 ppm</td>
<td>Light Manufacturing Indoor air</td>
</tr>
<tr>
<td>Sulfur dioxide</td>
<td>7446-09-5</td>
<td>STEL</td>
<td>1 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>0.5 ppm</td>
<td>(8 Hours)</td>
</tr>
</tbody>
</table>

US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Cas #</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthracite, Calcined</td>
<td>68187-59</td>
<td>T</td>
<td>0.4 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>Silica, crystalline</td>
<td>14808-60</td>
<td>T</td>
<td>0.025 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
</tbody>
</table>

Compounds Formed during processing

<table>
<thead>
<tr>
<th>Carbon Monoxide</th>
<th>630-08-0</th>
<th>T</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen dioxide</td>
<td>10102-44-0</td>
<td>STEL</td>
<td>5 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>3 ppm</td>
</tr>
<tr>
<td>Sulfur dioxide</td>
<td>7446-09-5</td>
<td>STEL</td>
<td>0.25 ppm</td>
</tr>
</tbody>
</table>

9. Physical and Chemical Properties

Form: Solid, granular.
Appearance: Grey, Black
Odor: odorless
Odor threshold: Not applicable
pH: Not applicable
Vapor pressure: Not applicable
Vapor density: Not applicable
Boiling point: Not applicable
Melting point/Freezing point: Not available.
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Solubility (Water): Insoluble
Density: Not determined.
Flash Point: Not applicable

Flammability limits in air, Not applicable.
Upper, % by volume
Flammability limits in air, Not applicable
Lower, % by volume
Auto-ignition temperature: Not determined
VOC: 0%
Percent volatile: 0%
Partition coefficient Not applicable.
(n-octanol/water)

10. Stability and Reactivity
Chemical stability: Stable under normal condition of use, storage, and transportation.
Incompatible materials: Strong oxidizers (chlorine, perchlorates, permanganates, peroxides, nitric acid, chromates, etc.)
Hazardous decomposition Carbon monoxide, carbon dioxide, sulfur dioxide and products:
Nitrogen oxides (NOx)
Hazardous polymerization: Hazardous polymerization does not occur.

11. Toxicological Information
Health effects associated with ingredients
Carbon dust: Can cause irritation of eyes, mucous membranes and upper respiratory tract.
Acute overexposures: Can cause difficulty breathing, narrowing of the airways, and the accumulation of fluid in the lungs (pulmonary edema).
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Silica, crystalline (quartz, cristobalite, tridymite): Chronic overexposures: Can cause scarring of lungs (silicosis), suppression of the immune system and lung cancer. IARC/NTP: Listed as “known to be a human carcinogen” (if respirable size) by the NTP. Listed as carcinogenic to humans (by inhalation) by IARC (group 1). Additional information: Studies with experimental animals (rats) by inhalation have found lung tumors.

Silica, amorphous: Acute overexposures: Can cause dryness of eyes, nose and upper respiratory tract.

Health effect associated with compounds formed during processing.

Can generate the following when heated to decomposition or during combustion:

Carbon monoxide: Acute overexposures: Can cause headache, dizziness, failure of the blood to carry oxygen (carboxyhemoglobin), coma and death. Can cause reduced birth weights during pregnancy.

Sulfur dioxide: Can cause irritation of eyes, skin and respiratory tract. Acute overexposures: can cause difficulty breathing, narrowing of the airways, and the accumulation of fluid in the lungs (pulmonary edema). Chronic overexposures: can cause bronchitis, dryness in the mouth and throat and erosion of dental enamel.

Oxides of nitrogen (NO and NO2): Can cause irritation of eyes, skin and respiratory tract. Acute overexposures: Can cause reduced ability of the blood to carry oxygen (methemoglobin). Can cause cough, shortness of breath, accumulation of fluid in the lungs (pulmonary edema) and death. Effects can be delayed up to 2-3 weeks.

Nitrogen dioxide (NO2: Chronic overexposure: can cause scarring of the lungs (pulmonary fibrosis.)
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<table>
<thead>
<tr>
<th>Compounds Formed During Processing</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen dioxide (10102-44-0)</td>
<td>Acute Inhalation LC50 Guinea Pig: 30mg/l 1 hours</td>
</tr>
<tr>
<td></td>
<td>Acute Inhalation LC50 Rat: 88mg/l 4 Hours</td>
</tr>
<tr>
<td>Sulfur dioxide (7446-09-5)</td>
<td>Acute Inhalation LC50 Rat: 2500 mg/l/4 hours</td>
</tr>
<tr>
<td>Componenet analysis</td>
<td>No Information available for product</td>
</tr>
<tr>
<td>LD50</td>
<td>Inhalation.</td>
</tr>
<tr>
<td>R</td>
<td>Not classified.</td>
</tr>
<tr>
<td>Acute effects</td>
<td>Prolonged exposure may cause chronic effects. May cause lung damage</td>
</tr>
<tr>
<td>Chronic effects</td>
<td>Non-corrosive.</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Can cause mechanical irritation</td>
</tr>
<tr>
<td>Serious eye damage/ eye irritation</td>
<td>May cause lung damage.</td>
</tr>
<tr>
<td>R</td>
<td>Not a skin sensitizer</td>
</tr>
<tr>
<td>Sensitization</td>
<td>Contain no ingredient listed as a carcinogen</td>
</tr>
</tbody>
</table>

ACGIH Carcinogens

- Anthracite, calcined (CAS 68187-59-7) - A4 not classifiable as a human carcinogen
- Nitrogen dioxide (Cas 10102-44-0) - A4 not classifiable as a human carcinogen
- Silica, crystalline quartz (CAS 14808-60-7) - A2 Suspected human carcinogen.
- Sulfur dioxide (CAS 7446-09-5) - A4 not classifiable as a human carcinogen

IARC Monographs, Overall Evaluation of Carcinogenicity

- Anthracite, calcined (CAS 68187-59-7) - 3 Not classifiable as to carcinogenicity to human
- Silica, amorphous (CAS 112926-00-8) - 3 Not classifiable as to carcinogenicity to human
- Silica, crystalline quartz (CAS 14808-60-7) - 1 Carcinogenic to humans.
- Sulfur dioxide (CAS 7446-09-5) - 3 Not classifiable as to carcinogenicity to human

12. **Ecological Information**
   - Ecotoxicity: Avoid contaminating waterways.

13. **Disposal Considerations**
   - Disposal methods:
     - Refer to local government authority for disposal recommendations. Dispose of material through a licensed waste contractor.
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14. Transport Information

Road and Rail Transport
Not classified as Dangerous Goods by China Authority; NON-DANGEROUS GOODS

Marine Transport
Not Classified as Dangerous Goods by China Authority; NON-DANGEROUS GOODS.

Air Transport
Not Classified as Dangerous Goods by China Authority; NON-DANGEROUS GOODS

15. Regulatory Information

Superfund Amendments and reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard – No
Delayed Hazard – Yes
Fire Hazard – No
Pressure Hazard – No
Reactivity Hazard – No
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<table>
<thead>
<tr>
<th>Country(s) or Region</th>
<th>Inventory Name</th>
<th>On Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of New and Existing Chemicals (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>No</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemical List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>No</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>YES</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>YES</td>
</tr>
</tbody>
</table>

*A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country.

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