24-HOUR EMERGENCY TELEPHONE

SPRAGUE: 603-431-1000 CHEMTREC: 800-424-9300

SDS – SAFETY DATA SHEET

1. Identification

Product Identifier: BITUMINOUS COAL
Synonyms: Washed Coal, Clean Coal, Soft Coal
Chemical Family / Formula: Aliphatic and Aromatic Hydrocarbons / Variable
Recommended Use of the Chemical and Restrictions On Use: -
Manufacturer / Supplier: Sprague Operating Resources LLC **Phone:** 603-431-1000
185 International Drive, Portsmouth, NH 03801
Emergency Phone Number: SPRAGUE: 603-431-1000; CHEMTREC: 800-424-9300

2. Hazard(s) Identification

Classification of the Substance or Mixture:
Eye irritation (Category 2B)
Single Target Organ Toxicity Repeated Exposure (Category 2): Target Organ Lungs

Risk Phrases:
R33: Danger of cumulative effects.
R36: Irritating to eyes.
R48/20: Harmful: danger of serious damage to health by prolonged exposure through inhalation.

Label Elements:

Trade Name: BITUMINOUS COAL

Signal Word: Warning

Hazard Statements:
H320: Causes eye irritation.
H373: May cause damage to lung through prolonged or repeated inhalation.

Precautionary Statements:
P260: Do not breathe dust.
P285: In case of inadequate ventilation wear respiratory protection.
P501: Dispose of contents/containers in accordance with local regulations.

3. Composition / Information on Ingredients

CAS Number: Not Applicable / Naturally Occurring Mineral
EC Number: Not Applicable / Naturally Occurring Mineral

Naturally Occurring Mineral

Ingredient	CAS Number	Percent Weight As Received
Moisture		1 - 10%
Ash	68131-74-8	4 – 20%
Total Sulfur	7446-09-5 (S02)	0.5 – 2.2%
Fixed Carbon		50 – 72%
Volatile Matter* including elemental and compounds of:		
Hydrogen	1333-74-0	4.8 – 5.3%
Nitrogen	7727-37-9	1.2 – 1.6%
Chlorine	7782-50-5	.05 - .19%
Coal Dust		

4. First-aid Measures

Inhalation: Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention if symptoms appear.

Ingestion: DO NOT INDUCE VOMITING or give anything by mouth to an unconscious person. Get medical attention if symptoms appear.

Skin Contact: Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Eye Contact: Remove contact lenses if present and easy to do. Flush eyes immediately with large amounts of water, occasionally lifting upper and lower lids. If irritation develops, seek medical aid.

5. Fire-fighting Measures

Fire: When exposed to flame of temperatures in excess of 260F (127C.)

Explosion: Susceptible to spontaneous combustion. Highly combustible and/or explosive when in dust or powder form. Coal dust may react slowly with oxygen at room temperature. Heat accelerates the process, which could lead to spontaneous ignition in piles of coal dust.

Fire Extinguishing Media*:* Foam, carbon dioxide, dry chemical, halon, and water fog.

Special Information: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Use washdown and spread out method. Chemical fire fighting procedures should be used in consideration to hazards of other materials involved.

6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Put on appropriate personal protective equipment (see Section 8.)

Environmental Precautions and Methods and Materials for Containment and Cleaning Up: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. In order to minimize dust, spills should be removed by vacuuming, or by lightly spraying with water and sweeping the mixture into a suitable container. Do not dry sweep. Observe local, state, and federal governmental regulations.

7. Handling and Storage

Precautions for Safe Handling and Conditions for Safe Storage, Including Any Incompatibilities: Store in a dry clean area. Prevent exposure to high temperature and flames. Prevent exposure to strong oxidizers. Store in accordance with local, state, and federal regulations. Avoid creating dust. Clean up all spills promptly. Wash exposed skin daily. Wash work clothes daily.

8. Exposure Controls / Personal Protection

Airborne Exposure Limits:

Ingredient	OSHA PEL	ACGIH TLV
Ash	NA	NA
Total Sulfur	5.0 ppm as SO2	2.00 ppm as SO2
Fixed Carbon	None established	None established
Hydrogen	None established	None established
Nitrogen	None established	None established
Chlorine	1.0 ppm	1.0 ppm
Coal Dust	• 2.4 mg/ m3 respirable fraction, < 5% SiO2 • 10 mg/ m3 > 5% SiO2	• 2.4 mg/ m3 respirable fraction, < 5% SiO2 • 10 mg/m3 > 5% SiO2

This material contains fused polycyclic hydrocarbons. The OSHA interpretation of coal tar pitch volatiles (Section 1910.1002) is as follows: "Coal tar pitch volatiles include the fused polycyclic hydrocarbons which volatize from the distillation residues of coal, petroleum, wood, and other organic matter." The OSHA PEL and ACGIH TLV for coal tar pitch volatiles is 0.2 mg/m3 (basis one soluble fraction.)

Ventilation System: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved): MSHA/NIOSH approved dust respirator. Appropriate respirator depends upon type and magnitude of exposure.

Skin Protection: Neoprene, PVC should be worn when handling.

Eye Protection: Use chemical safety goggles and / or a full face shield.

Hygiene Measures: Wear appropriate impervious clothing and equipment to prevent repeated or prolonged skin contact with this substance.

9. Physical and Chemical Properties

Appearance: Irregular, rectangular-shaped chunks or particles, dense, grayish-black to black color
Odor: minimal dank odor
Odor Threshold: Not determined
pH: No information found
% Volatiles by volume @ 21C (70F): Negligible
Melting Point: 750F (399C)
Boiling Point / Boiling Range: Not determined
Flash Point: above 260F (127C)
Evaporation Rate (BuAC=1): Not determined
Flammability: Combustible
Upper / Lower Flammability or Explosive Limits: Not determined
Vapor Pressure (mm Hg): Not determined
Vapor Density (Air=1): Not determined
Relative Density: 1.43 g/mL
Solubility: Non-soluble
Partition Coefficient: n-octanol / water: Not determined

Auto-ignition Temperature: 260F-365F (127C-185C)
Decomposition Temperature: Not determined
Viscosity: Not determined

10. Stability and Reactivity

Reactivity and / or Chemical Stability: Stable if properly stored to inhibit oxidation.

Possibility of Hazardous Reactions and Conditions to Avoid:

- Allowing coal to stand in water.
- Storing coal on loose or porous ground.
- Piling coal around upright steel or wooden posts, crane supports, underground drains, steam or hot water lines or areas where there is refuse such as wood, straw, growing vegetation or other organic material.
- Storage in closed hampers, bins, receptacles, etc. without positive ventilation.

Incompatible Materials: Strong oxidizers.

Hazardous Decomposition Products: May liberate hydrogen, methane, carbon monoxide, oxides of sulfur and hydrogen, coal tar pitch volatiles upon thermal decomposition.

11. Toxicological Information

Emergency Overview:

Coal may release small quantities of methane gas over a period of time. Progression of tuberculosis is greatly increased in pneumoconiosis but susceptibility is apparently not increased.

Potential Health Effects:

Inhalation: The principal health hazard associated with coal occurs during its mining and transport. Coal workers' pneumoconiosis (CWP) can occur in miners after as little as 15 years of excessive inhalation of respirable coalmine dust. Respirable quartz particles and free silica may be co-implicated. Coal dust is deposited in the lungs where its site of action is the lung parenchyma, lymph nodes and hila. The severity of the disease is directly related to the amount of coal dust in the lungs. In the simple stages, the disease is detectable by x-ray as round, irregular "macules"of 1-5 mm. This stage typically does not change lung function or shorten life.

Ingestion: May cause irritation.

Skin Contact: May cause irritation.

Eye Contact: Irritation of the eye.

Chronic Exposure:
The chronic stage of CWP involves massive pulmonary fibrosis that does impair pulmonary function and shorten life. Chronic Bronchitis (lung inflammation, coughing attacks, difficult breathing, etc.) and emphysema can result from excessive coal dust inhalation. Rheumatoid arthritis can be exacerbated by pneumonias leading to rapidly developing lung damage (Caplan's Syndrome.)

Carcinogenicity: Coal may liberate various polycyclic aromatic hydrocarbons (PAH's) upon thermal decomposition. There is no clear evidence that coal is carcinogenic to man or experimental animals because of their polycyclic aromatic hydrocarbon content. However, there is evidence that these PAH's may play an active role in the generation of lung cancer seen in cigarette smokers or tar-roofing workers.

Reproductive Toxicity: No data available.

Specific Target Organ Toxicity - Single Exposure (Globally Harmonized System:) No data available.

Specific Target Organ Toxicity - Repeated Exposure (Globally Harmonized System:) No data available.

Aspiration Respiratory Organs Hazard: No data available.

Acute Toxicity: No data available.

12. Ecological Information

Ecotoxicity: No information available.

Persistence and Degradability: No information available.

Bioaccumulative Potential: No information available.

Mobility in Soil: No information available.

Other adverse effects: No information available.

13. Disposal Considerations

1. Incinerate in combustion device or system.
2. Dispose in approved, regulated landfill.

Use of these methods is subject to user compliance with applicable laws and regulations and consideration of product characteristics at time of disposal.

14. Transport Information

Land Transport ADR/RID and GGVS/GGVE (Cross Border / Domestic): Not regulated

Maritime Transport IMDG/GGVSea: Not regulated

Air Transport ICAO-TI and IATA-DGR: Not regulated

15. Regulatory Information

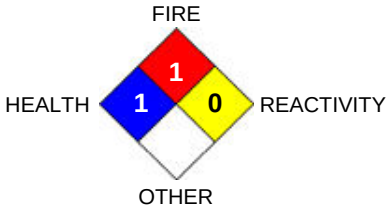
EPA Sara Title III Information
Section 311/312: Acute: N/A Chronic: N/A Fire: N/A Pressure: N/A Reactive: N/A

EPA Sara Title III Information: Non-Hazardous

TSCA & DSL Inventories: This product is listed as a naturally occurring substance

16. Other Information

HMIS / NFPA Hazard Rating:
4=EXTREME
3= SERIOUS
2= MODERATE
1=SLIGHT
0=MINIMAL



Effective Date: 12/15/13 – Standardized for GHS and REACH
Previous Revisions: 06/05, 07/26/02, 10/12/00, 01/94

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