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An Axel Johnson, Inc. Company

MATERIAL SAFETY DATA SHEET

BITUMINOUS COAL

Content Last Revised 1/94; 10/12/00;
07/26/02; 06/05
4 pages.

SECTION 1 - MATERIAL IDENTIFICATION

**PRODUCT /
CHEMICAL NAME:** BITUMINOUS COAL

**PRODUCT /
CHEMICAL SYNONYMS:** WASHED COAL, CLEAN COAL, SOFT
COAL

**CHEMICAL FAMILY /
FORMULA:** ALIPHATIC AND AROMATIC
HYDROCARBONS / VARIABLE

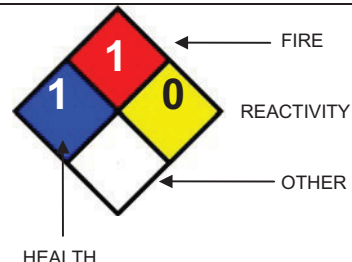
**MATERIAL USE OR
OCCURRENCE:** -

24 HOUR EMERGENCY INFORMATION

Sprague: 603-431-1000
Chemtrec: 800-424-9300

HMIS / NFPA HAZARD RATING

4=EXTREME
3=SERIOUS
2=MODERATE
1=SLIGHT
0=MINIMAL



SECTION 2 - INGREDIENTS & RECOMMENDED OCCUPATIONAL EXPOSURE LIMITS

COMPOSITION	% WEIGHT AS RECEIVED	OSHA PEL	ACGIH TLV
MOISTURE	(Typical) 1.0 – 10.0	None established.	None established.
ASH	4.0-20.0	15 mg/M ³ as nuisance dust less than 1% quartz	10 mg/M ³ as nuisance dust less than 1% quartz
TOTAL SULFUR	0.5-2.2	5.0 ppm as SO ₂	2.00 ppm as SO ₂
FIXED CARBON	50.0-72.0	None established	None established
VOLATILE MATTER* INCLUDING ELEMENTAL AND COMPOUNDS OF:	17.0-37.0		
HYDROGEN	4.8-5.3	None established	None established
NITROGEN	1.2-1.6	None established	None established
CHLORINE	.08-.19	1.0 ppm	1.0 ppm
COAL DUST		2.4 mg/ M ³ respirable fraction, < 5% SiO ₂ 10 mg/ M ³ > 5% SiO ₂ % SiO ₂₊₂	2 mg/M ³ respirable fraction, < 5% SiO ₂ 10 mg/ M ³ > 5% SiO ₂ % SiO ₂₊₂

SECTION 3 - PHYSICAL DATA

IGNITION TEMPERATURE:	260°-365°F	% VOLATILITY BY VOLUME:	Negligible
MELTING POINT:	750° F	VAPOR DENSITY (AIR = 1):	N/A
AVERAGE SPECIFIC GRAVITY (H₂O = 1):	1.43	SOLUBILITY IN WATER:	Non-soluble
HETEROGENOUS - CARBONACEOUS			
APPEARANCE & ODOR: Irregular, rectangular-shaped chunks or particles, dense, grayish-black to black color with slight, minimal dank odor.			

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SECTION 4 - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: When exposed to flame of temperatures in excess of 260° F.

EXTINGUISHING MEDIUM: Foam, carbon dioxide, dry chemical, halon, and water fog.

SPECIAL FIRE FIGHTING PROCEDURES: Use washdown and spread out method.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Susceptible to spontaneous combustion. Highly combustible and/or explosive when in dust or powder form.

SECTION 5 - HEALTH DATA

TOXICOLOGICAL TEST DATA: 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.

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.

ACUTE HEALTH EFFECTS		CHRONIC 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.	The chronic stage of CWP, however, 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).
INGESTION	May cause irritation.	No data available
SKIN CONTACT	May cause irritation.	No data available.
EYE CONTACT	Irritation of the eye.	No data available

FIRST AID



PROCEDURES

First aid procedures generally don't apply to this product. Maintain exposure to coal dust according to applicable regulatory standards.

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SECTION 6 - REACTIVITY DATA

STABILITY:	Stable if properly stored to inhibit oxidation.
HAZARDOUS POLYMERIZATION:	Hazardous polymerization has not been known to occur under normal temperatures and pressures. However, 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.
CONDITIONS TO AVOID:	1. Allowing coal to stand in water. 2. Storing coal on loose or porous ground. 3. 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. 4. Storage in closed hampers, bins, receptacles, etc. without positive ventilation.
INCOMPATIBLES:	
TYPICAL DECOMPOSITION PRODUCTS:	May liberate hydrogen, methane, carbon monoxide, oxides of sulfur and hydrogen, coal tar pitch volatiles upon thermal decomposition.

SECTION 7 - SPECIAL PROTECTION

RESPIRATORY PROTECTION:	Use with adequate ventilation.
VENTILATION	LOCAL EXHAUST: MSHA/NIOSH approved dust respirator. Appropriate respirator depends upon type and magnitude of exposure.
	MECHANICAL (General): Recommended for use in enclosed or semi-enclosed work areas.
EYE PROTECTION:	Splash goggles or shields with safety glasses
PROTECTIVE GLOVES:	Neoprene, PVC
OTHER PROTECTIVE CLOTHING OR EQUIPMENT:	Employee must wear appropriate impervious clothing and equipment to prevent repeated or prolonged skin contact with this substance.

SECTION 8 - SPECIAL PRECAUTIONS

PRECAUTIONS FOR SAFE HANDLING & STORAGE:	Do not permit accumulation of dust or spillage. See also conditions to avoid, above.
SPILL AND LEAK PROCEDURES:	Cleanup by excavation, vacuum collection or washdown.
WASTE DISPOSAL METHOD:	1. Incinerate in combustion device or system. 2. Dispose in approved, regulated landfill.

SECTION 9 - DOT HAZARDOUS MATERIAL INFORMATION

PROPER SHIPPING NAME: BITUMINOUS COAL	REQUIRED PLACARDING: NONE
HAZARD CLASS: Non-Hazardous	PACKING GROUP (P.G.): III
	N.A./U.N. NUMBER: NONE

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SECTION 10 - EPA SARA TITLE III INFORMATION

SECTION 311/312	ACUTE: N/A	CHRONIC: N/A
HAZARD CLASSIFICATION: Non-Hazardous	FIRE: N/A	PRESSURE: N/A REACTIVE: N/A

SECTION 11 – REMARKS

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 volatilize 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).

SECTION 12 - ADDITIONAL REGULATORY DATA

REPORTABLE COMPONENTS: FEDERAL EPA	%	SARA RQ	CERCLA RQ	RCRA NO.
BITUMINOUS COAL	100	-----	-----	-----

NOTE: OSHA Regulations 29 CFR 1910.1200 (Hazard Communication) do not consider coal as a "hazardous material" and a Material Safety Data Sheet (MSDS) is not required. The information contained herein is based on data available at this time and is believed to be accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Since information contained herein may be applied under conditions beyond our control and with which we may be unfamiliar, no responsibility is assumed for the results of its use. The person receiving this information shall make his own determination of the suitability of the material for his particular purpose.