Safety Data Sheet

According to OSHA HCS 2012 (29 CFR 1910.1200), Health Canada HPR (SOR/2015-17), and Mexico NOM-018-STPS-2015

SECTION 1: Identification

Product Identifier: **Calcined Coke**

Other means of identification:
Coke (Petroleum), Calcined
BP - Base Premium
Calcined Anode
Calcined Coke - Fines, Lump
CCC Hi-D Calcined Coke, ROK
CCC MD Calcined Coke, ROK
FINES - Coke Fines
HSR - High Sulfur Recarburizer
ISR - Intermediate Sulfur Recarburizer
LIP - Intermediate Premium
LNP - Normal Premium
LSR - Low Sulfur Recarburizer
LXP - X-Coke
MSR - Medium Sulfur Recarburizer
Needle Coke
NSR - Normal sulfur Recarburizer
Refinery Calcined Coke
Santa Maria - Calcined Petroleum Coke
Santa Maria - Lump, Fines
SMRC Calcined Coke, Lump, or Fines
LCP –Crystal Premium Coke
LPP –Power Premium Coke
LSP –Special Premium Coke
LUP –Ultra Premium Coke
LVP –Vanguard Premium Coke

Code: **724120**
Issue date: 30-Sep-2024
Relevant identified uses: Industrial feedstock
Uses advised against: All others
24 Hour Emergency Phone Number: CHEMTREC Global +1 703 527 3887
CHEMTREC United States 1-800-424-9300
CHEMTREC Mexico 01-800-681-9531
Manufacturer/Supplier: Phillips 66 Company
P.O. Box 421959
Houston, Texas 77242-1959
SDS Information: URL: www.phillips66.com/SDS
Phone: 800-762-0942
Email: SDS@P66.com
Technical Information: 1-281-293-1415

SECTION 2: Hazard identification

Classified Hazards

Combustible dust

Label Elements

WARNING
May form combustible dust concentrations in air (during processing/handling).

Precautionary Statements
Avoid dust accumulation in enclosed space

Hazards Not Otherwise Classified (HNOC)

PHNOC: None known

HHNOC: None known

SECTION 3: Composition/information on ingredients

Substance	CASRN	Concentration[1]
Coke, petroleum, calcined	64743-05-1	100

[1] All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4: First aid measures

Eye Contact: If irritation or redness develops from exposure, flush eyes with clean water. If symptoms persist, seek medical attention.

Skin Contact: First aid is not normally required. However, it is good practice to wash any chemical from the skin.

Inhalation: First aid is not normally required. If breathing difficulties develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. Seek immediate medical attention.

Ingestion: First aid is not normally required; however, if swallowed and symptoms develop, seek medical attention.

Most important symptoms and effects, both acute and delayed: Repeated overexposures to dusts may result in irritation of the respiratory tract, pneumoconiosis (dust congested lungs), pneumonitis (lung inflammation), coughing, and shortness of breath.

SECTION 5: Firefighting measures

NFPA 704: National Fire Protection Association

Health: 0 **Flammability:** 1 **Instability:** 0

0 = minimal hazard
1 = slight hazard
2 = moderate hazard
3 = severe hazard
4 = extreme hazard

Extinguishing Media: Dry chemical, carbon dioxide, foam, water spray, sand or earth is recommended. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

Specific hazards arising from the chemical

Unusual Fire & Explosion Hazards: This material may burn, but will not ignite readily. May form dust-air mixtures that present a fire hazard. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Hazardous Combustion Products: Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. Oxides of nitrogen and sulfur may also be formed.

Special protective actions for fire-fighters: For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protective clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, a self

contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Contain spill if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Cool equipment exposed to fire with water, if it can be done safely.

See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: This material may burn, but will not ignite readily. Keep all sources of ignition away from spill/release. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Stay upwind and away from spill/release. Avoid direct contact with material. For large spillages, notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Environmental Precautions: Contain spill if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Use water sparingly to minimize environmental contamination and reduce disposal requirements. If spill occurs on water notify appropriate authorities and advise shipping of any hazard. Spills into or upon navigable waters, the contiguous zone, or adjoining shorelines that cause a sheen or discoloration on the surface of the water, may require notification of the National Response Center (phone number 800-424-8802).

Methods and material for containment and cleaning up: Notify relevant authorities in accordance with all applicable regulations. Clean up spills in a manner that does not disperse dust into air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water.

Recommended measures are based on the most likely spillage scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken. See Section 13 for information on appropriate disposal.

SECTION 7: Handling and storage

Precautions for safe handling: Use non-sparking tools. Under dusty conditions, avoid all sources of ignition, including sparks and static electricity. Minimize dust generation and accumulation in enclosed spaces. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Cleaning methods (e.g. compressed air) which can generate potentially combustible dust clouds should not be used. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8).

Do not wear contaminated clothing or shoes. Avoid dust accumulation in enclosed space. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.

Conditions for safe storage: Keep container(s) tightly closed and properly labeled. Use and store this material in cool, dry, well-ventilated area away from heat and all sources of ignition. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

SECTION 8: Exposure controls/personal protection

Occupational exposure limits

Substance	ACGIH	OSHA	Mexico	Phillips 66
Coke, petroleum, calcined	TWA-8hr: 10 mg/m^3, inhalable particles, recommended as PNOS; TWA-8hr: 3 mg/m^3, respirable particles, recommended as PNOS	---	---	---

State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information. --- = None.

Biological occupational exposure limits
None.

Engineering controls: Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment) If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

Eye/Face Protection: The use of eye protection that meets or exceeds ANSI Z.87.1 is recommended to protect against potential eye contact, irritation, or injury. Depending on conditions of use, a face shield may be necessary.

Skin/Hand Protection: The use of skin protection is not normally required; however, good industrial hygiene practice suggests the use of gloves or other appropriate skin protection whenever working with chemicals. Suggested protective materials: Nitrile rubber.

Respiratory Protection: Small concentrations of airborne respiratory coke fibers may be present in calcined coke. Manufacturers of carbon fibers have recommended exposure limits between 1 and 5 fibers per cc, 8 hour time-weighted average. A NIOSH certified air purifying respirator with a Type 100 particulate filter may be worn when performing maintenance or other activities (e.g. sweeping, loading, grinding) likely to generate dust, unless such exposures have been determined to have low potential for the presence of airborne fibers. When the potential for fibers exposure is known to be low, a NIOSH certified Type 95 particulate filter may be used where airborne concentrations are expected to exceed exposure limits for nuisance dust.

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use. Air purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration (as directed by regulation or the manufacturer's instructions), in oxygen deficient (less than 19.5 percent oxygen) situations, or under conditions that are immediately dangerous to life and health (IDLH).

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

SECTION 9: Physical and chemical properties

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm). Data represent typical values and are not intended to be specifications.

Color:	Steel gray to black particles and/or lumps , Shot (Spherical appearance)
Physical State:	Solid
Odor:	No distinct odor
Odor threshold:	No data
pH:	Not applicable
Melting / freezing point:	No data
Initial boiling point and boiling range:	No data
Flash point:	No data
Method:	Not applicable
Evaporation Rate (nBuAc=1):	No data
Flammability (solid, gas):	May burn, but will not readily ignite
Upper Explosive Limits (vol % in air):	No data
Lower Explosive Limits (vol % in air):	No data
Vapor pressure:	No data
Vapor density:	>1
Relative density:	2 Typical (water = 1)
Solubility:	0%
Partition coefficient n-octanol /water (log Kow):	No data

Autoignition temperature:	No data
Decomposition temperature:	No data
Viscosity:	No data
Molecular weight:	No data

Other information

Particle characteristics	2x0 inches
Pour point:	No data
Percent volatile:	Negligible
Bulk density:	45-55 lb/ft3

SECTION 10: Stability and reactivity

Reactivity: Not chemically reactive.

Chemical stability: Stable under normal ambient and anticipated conditions of use.

Possibility of Hazardous Reactions: Hazardous reactions not anticipated.

Conditions to Avoid: Avoid all possible sources of ignition. Avoid high levels of airborne dust.

Incompatible Materials: Avoid contact with strong oxidizing agents and strong reducing agents.

Hazardous Decomposition Products: Not anticipated under normal conditions of use.

SECTION 11: Toxicological information

Information on Toxicological Effects

Substance / Mixture

Acute Toxicity	Hazard	Additional Information	LC50/LD50 Data
Inhalation	Unlikely to be harmful		>5 mg/L (dust, estimated)
Dermal	Unlikely to be harmful		> 2 g/kg (estimated)
Oral	Unlikely to be harmful		> 5 g/kg (estimated)

Likely Routes of Exposure: Inhalation, eye contact, skin contact

Aspiration Hazard: Not applicable.

Skin Corrosion/Irritation: Prolonged or repeated contact with dusts may be abrasive and mildly irritating to the skin.

Serious Eye Damage/Irritation: Dusts may be abrasive and irritating to the eyes.

Skin Sensitization: Not expected to be a skin sensitizer.

Respiratory Sensitization: Not expected to be a respiratory sensitizer.

Specific target organ toxicity - Single exposure: Not expected to cause organ effects from single exposure.

Specific target organ toxicity - Repeated exposure: Not expected to cause organ effects from repeated exposure. Low concentrations of airborne respiratory coke fibers may be present in calcined coke. The fibers are amorphous and generally irregularly shaped, rather than having the crystalline appearance of carbon fibers. Coke fibers have not been studied, but recent laboratory animal studies have shown that carbon fibers are biopersistent in the lung. These studies also demonstrated a lower inflammatory response in the lung and less proliferation of the alveolar cells than fibers that are known to cause fibrosis and lung cancer. Repeated exposure of rats to 10 and 30 mg/m^3 petroleum coke dust for two years resulted in signs of lung injury including fibrosis (scarring of lung tissue). Similar exposures in monkeys caused no significant lung effects.

Carcinogenicity: Not expected to cause cancer. Lifetime inhalation and dermal application studies in mice of petroleum coke did not demonstrate carcinogenicity.

Germ Cell Mutagenicity: Not expected to cause heritable genetic effects.

Reproductive Toxicity: Not expected to cause reproductive toxicity. A reproductive/developmental toxicity screening study of green coke in rats did not demonstrate effects on fertility or reproductive performance at concentrations of 30, 100, and 300 mg/m^3.

Other Comments: This material may contain varying concentrations of polycyclic aromatic hydrocarbons (PAHs) which have been known to produce a phototoxic reaction when contaminated skin is exposed to sunlight. The effect is similar in appearance to an exaggerated sunburn, and is temporary in duration if exposure is discontinued. Continued exposure to sunlight can result in more serious skin problems including pigmentation (discoloration), skin eruptions (pimples), and possible skin cancers.

SECTION 12: Ecological information

GHS Classification:
No classified hazards

Toxicity: Acute toxicity studies on samples of petroleum coke show that acute aquatic toxicity values are greater than 1000 mg/L for invertebrates, algae and fish. Elemental carbon, which is the principal constituent of petroleum cokes, poses no risk to aquatic organisms. Residual hydrocarbon concentrations are very low and have a high molecular weight. Such hydrocarbons are too water insoluble to cause acute aquatic toxicity. Therefore petroleum coke is unlikely to pose a long-term hazard to the environment.

Persistence and Degradability: Petroleum cokes are not expected to meet the criteria for ready degradability. Elemental carbon and hence, petroleum coke is a persistent material. Also, any associated very high molecular weight hydrocarbons would only be very slowly biodegraded.

Bioaccumulative Potential: Elemental carbon is not known to bioaccumulate. The very high molecular weight of any associated hydrocarbons, combined with their very low water solubilities, indicate that they are not likely to bioaccumulate. The trace hydrocarbon components of petroleum cokes have values for log Kow greater than 6.

Mobility in Soil: The hydrocarbon components of petroleum cokes have negligible vapor pressures at ambient temperature and volatility is not a significant fate process for these substances.

Other adverse effects: None anticipated.

SECTION 13: Disposal considerations

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations. This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste and is not believed to exhibit characteristics of hazardous waste. See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the SDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste. Container contents should be completely used and containers should be emptied prior to discard.

SECTION 14: Transport information

UN Number: Not regulated
UN proper shipping name: None
Transport hazard class(es): None
Packing Group: None
Environmental Hazard(s): This product does not meet the DOT/UN/IMDG/IMO criteria of a marine pollutant

Special precautions for user: Always ship by open road or rail trucks. For additional information on safe loading practices, see International Maritime Organization Code of Safe Practice for Solid Bulk Cargoes (BC Code), Appendix B, Petroleum Coke.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

SECTION 15: Regulatory information

CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds)
This material does not contain any chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372.

CERCLA/SARA - Section 311/312 (Title III Hazard Categories)
Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CERCLA/SARA - Section 313 and 40 CFR 372
This material contains the following chemicals subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR 372:

Substance	Concentration[1]	de minimis
Lead	<0.02	--
Mercury	<0.4 PPM	--

[1] All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

EPA (CERCLA) Reportable Quantity (in pounds)
EPA's Petroleum Exclusion applies to this material - (CERCLA 101(14)).

California Proposition 65


WARNING: This product can expose you to chemicals including Nickel compounds which are known to the State of California to cause cancer, and Lead (CASRN 7439-92-1) which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

International Inventories
TSCA (United States): All ingredients are on the inventory or exempt from listing.
All components are either on the DSL, or are exempt from DSL listing requirements.

SECTION 16: Other information

Issue date	Previous Issue Date:	SDS Number	Status:
30-Sep-2024	08-Feb-2023	724120	FINAL

Reason for Revision:
Format change
Occupational Exposure Limits
Toxicological Information
Regulatory information
California Proposition 65

Mexican NOM-018-STPS-2015:
The information within is considered correct but is not exhaustive and will be used for guidance only, which is based on the current knowledge of the substance or mixture and is applicable to the appropriate safety precautions for the product.

Precautionary Statements
Avoid dust accumulation in enclosed space

Guide to Abbreviations:
ACGIH = American Conference of Governmental Industrial Hygienists; CASRN = Chemical Abstracts Service Registry Number; CEILING = Ceiling Limit (15 minutes); CERCLA = The Comprehensive Environmental Response, Compensation, and Liability Act; EPA = Environmental Protection Agency; GHS = Globally Harmonized System; HPR = Hazardous Products Regulations; IARC = International Agency for Research on Cancer; INSHT = National Institute for Health and Safety at Work; IOPC = International Oil Pollution Compensation; LEL = Lower Explosive Limit; NE = Not Established; NFPA = National Fire Protection Association; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit (OSHA); SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; WHMIS = Worker Hazardous Materials Information System (Canada); A1 - Known Human Carcinogen; A2 - Suspected Human Carcinogen; A3 - Animal Carcinogen; A4 - Not Classifiable as a Human Carcinogen

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