1. IDENTIFICATION

Product Name: Marathon Petroleum Petroleum Coke

Synonym: Petroleum Coke; Green Coke

Chemical Family: Carbon

Recommended Use: Fuel.

Restrictions on Use: All others.

Manufacturer, Importer, or Responsible Party Name and Address:
MARATHON PETROLEUM COMPANY LP
539 South Main Street
Findlay, OH 45840

SDS information: 1-419-421-3070

Emergency Telephone: 1-877-627-5463

2. HAZARD IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

<table>
<thead>
<tr>
<th>Hazards Not Otherwise Classified (HNOC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

Warning

May form combustible dust concentrations in air (during processing)

Appearance Black Porous Chunks or Powder

Physical State Solid

Odor Slight Hydrocarbon

Precautionary Statements - Prevention
Minimize dust generation and accumulation
Keep away from all ignition sources including heat, sparks and flame. No Smoking
Clean as needed to prevent hazardous accumulation or dispersion of fugitive dust
Bond and ground containers, equipment and/or conducting surfaces to minimize and dissipate electrostatic charge
When necessary, employ explosive force dissipation design to vent away from other combustibles.

**Precautionary Statements - Response**
Avoid contact with eyes and breathing of dust.
In case of fire: Use portable spray hose nozzles that are listed or approved for use on Class C fire for extinction for extinction.

**Precautionary Statements - Storage**
Store in a cool and well-ventilated area
Wetting will suppress dust release

**Precautionary Statements - Disposal**
Dispose of contents/container at an approved waste disposal plant

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Composition varies depending on source of final product. Polycyclic aromatic hydrocarbons (3-7 ring), such as benzo(a)pyrene, are present in trace concentrations (<0.1%).

**Composition Information:**

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS Number</th>
<th>% Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum Coke</td>
<td>64741-79-3</td>
<td>100</td>
</tr>
<tr>
<td>Sulfur Compounds</td>
<td>Mixture</td>
<td>1-6</td>
</tr>
<tr>
<td>Polycyclic Aromatic Hydrocarbons</td>
<td>Mixture</td>
<td>&lt;0.1</td>
</tr>
</tbody>
</table>

All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

### 4. FIRST AID MEASURES

**First Aid Measures**

**General Advice:**
In case of accident or if you feel unwell, seek medical advice immediately (show directions for use or safety data sheet if possible).

**Inhalation:**
Remove to fresh air. If not breathing, institute rescue breathing. If breathing is difficult, ensure airway is clear, give oxygen and continue to monitor. If heart has stopped, immediately begin cardiopulmonary resuscitation (CPR). If symptoms or irritation occur, call a physician.

**Skin Contact:**
Wash skin with plenty of soap and water. Get medical attention if irritation persists. Wash contaminated clothing before re-use.

**Eye Contact:**
Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Gently remove contacts while flushing. Get medical attention if irritation persists.

**Ingestion:**
Rinse mouth out with water. If symptoms develop, seek medical attention.

**Most important signs and symptoms, both short-term and delayed with overexposure**

**Adverse Effects:**
Dust may be a mechanical irritant.

**Indication of any immediate medical attention and special treatment needed**

**Notes To Physician:**
Treat symptomatically.

### 5. FIRE-FIGHTING MEASURES

**Suitable extinguishing media**
Portable spray hose nozzles that are listed or approved for use on Class C fires shall be provided in areas that contain dust, to limit the potential for generating unnecessary airborne dust during fire-fighting operations. Personnel shall be trained to use portable
extinguishers in a manner that minimizes the generation of dust clouds during discharge. Firefighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.

Unsuitable extinguishing media
Straight-stream nozzles shall not be used on fires in areas where dust clouds can be generated.

Specific hazards arising from the chemical
May form combustible dust concentrations in air. Fine dust dispersed in air, in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Non-sparking tools/equipment should be considered when a potentially combustible dust environment exists.

Hazardous combustion products
Smoke, carbon monoxide, and other products of incomplete combustion.

Explosion data
- Sensitivity to Mechanical Impact: No.
- Sensitivity to Static Discharge: Yes.

Special protective equipment and precautions for firefighters
Firefighters should wear full protective clothing and positive-pressure self-contained breathing apparatus (SCBA) with a full face-piece, as appropriate. Avoid generation and accumulation of dust when handling this material. Refer to NFPA 654 Standard for Prevention of Fire & Dust Explosions. Avoid using straight water streams. Water spray and foam (AFFF/ATC) must be applied carefully to avoid frothing and from as far a distance as possible. Keep surrounding area cool with water spray from a distance and prevent further ignition of combustible material. Avoid excessive water spray application. Keep run-off water out of sewers and water sources.

Additional firefighting tactics
Not applicable.

NFPA
- Health: 1
- Flammability: 1
- Instability: 0
- Special Hazard: -

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:
Keep people away from and upwind of spill/leak. Dust deposits dispersed into the atmosphere in sufficient concentration may form an explosive mixture. Eliminate all ignition sources. Ensure adequate ventilation.

Protective equipment:
Use personal protection measures as recommended in Section 8.

Emergency procedures:
Advise authorities and National Response Center (800-424-8802) if the product has entered a water course or sewer. Notify local health and pollution control agencies, if appropriate.

Environmental precautions:
Avoid release to the environment.

Methods and materials for containment:
Prevent dust cloud. Cover powder spill with plastic sheet or tarp, or keep wetted to minimize dispersion of powder.

Methods and materials for cleaning up:
Sweep up and shovel into suitable containers for disposal. If disturbed, dust on surfaces can be dispersed and form explosive mixtures in the air, e.g. compressed air cleaning. Ensure all equipment is bonded and grounded. Use only non-sparking tools.

7. HANDLING AND STORAGE

Safe Handling Precautions:
To avoid the combustible dust hazard, minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations and cause an electrical spark. Provide adequate precautions, such as electrical grounding and bonding, or nonreactive atmospheres. Use non-sparking tools. Avoid contact with eyes. Avoid breathing dust. Refer to applicable EPA, OSHA, NFPA and
Storage Conditions: When stored indoors keep in a cool, well-ventilated area. Do not expose to heat, open flames, strong oxidizers or other sources of ignition. Petroleum Coke may be stored outdoors with proper provisions for containment. Wetting will suppress dust release.

Incompatible Materials: Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>Name</th>
<th>ACGIH TLV</th>
<th>OSHA PELS</th>
<th>OSHA - Vacated PELs</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum Coke</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>64741-79-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sulfur Compounds Mixture</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Polycyclic Aromatic Hydrocarbons Mixture</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Notes: The manufacturer has voluntarily elected to provide exposure limits contained in OSHA's 1989 air contaminants standard in its SDSs, even though certain of those exposure limits were vacated in 1992.

Engineering measures: Local or general exhaust required in an enclosed area or when there is inadequate ventilation. Use mechanical ventilation equipment that is explosion-proof.

Personal protective equipment

Eye protection: Dust goggles if use produces excessive dust/fume concentrations.

Skin and body protection: Protective disposable gloves to prevent skin exposure.

Respiratory protection: Use a NIOSH approved air-purifying respirator equipped with P100 particulate filter or a supplied air respirator when there is the potential for airborne exposures to exceed permissible exposure limits or if excessive dust or fumes are generated.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values (Method)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Solid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Black Porous Chunks or Powder</td>
</tr>
<tr>
<td>Color</td>
<td>Black</td>
</tr>
<tr>
<td>Odor</td>
<td>Slight Hydrocarbon</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property</th>
<th>Values (Method)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting Point / Freezing Point</td>
<td>No data available.</td>
</tr>
<tr>
<td>Initial Boiling Point / Boiling Range</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flash Point</td>
<td>No data available.</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Flammability Limit in Air (%)</td>
<td></td>
</tr>
<tr>
<td>Upper Flammability Limit</td>
<td>No data available.</td>
</tr>
<tr>
<td>Lower Flammability Limit</td>
<td>No data available.</td>
</tr>
<tr>
<td>Explosion limits:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No data available.</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>No data available.</td>
</tr>
<tr>
<td>Specific Gravity / Relative Density</td>
<td>0.8-1.0</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Negligible</td>
</tr>
</tbody>
</table>
Solubility in other solvents: No data available.
Partition Coefficient: No data available.
Decomposition temperature: No data available.
pH: Not applicable.
Autoignition Temperature: No data available.
Kinematic Viscosity: No data available.
Dynamic Viscosity: No data available.
Explosive Properties: No data available.
VOC Content (%): No data available.
Density: Not applicable.
Bulk Density: Not applicable.
Kst: 47 bar.m/s (explosion pressure build-up in meters/second) NFPA 68 2007 Table F.1b

10. STABILITY AND REACTIVITY

Reactivity: The product is non-reactive under normal conditions.

Chemical stability: The material is stable at 70°F, 760 mmHg pressure.

Possibility of hazardous reactions: None under normal processing.

Hazardous polymerization: Will not occur.

Conditions to avoid: Excessive heat, sources of ignition, open flame.

Incompatible Materials: Strong oxidizing agents.

Hazardous decomposition products: None known under normal conditions of use.

11. TOXICOLOGICAL INFORMATION

Potential short-term adverse effects from overexposures

Inhalation: Inhalation of dust may cause irritation of the respiratory system.

Eye contact: Dust may cause mechanical irritation of the eye.

Skin contact: No known hazard in contact with skin.

Ingestion: May cause irritation of the mouth, throat and gastrointestinal tract.

Acute toxicological data

<table>
<thead>
<tr>
<th>Name</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum Coke</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sulfur Compounds Mixture</td>
<td>-</td>
<td>-</td>
<td>&gt;5 mg/l (Rat) 4 h</td>
</tr>
<tr>
<td>Polycyclic Aromatic Hydrocarbons Mixture</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Petroleum coke was found not to be carcinogenic in monkeys and rats in a two-year inhalation study at concentrations up to 30 mg/m³. Chronic inflammatory changes similar to those produced by non-specific respiratory irritants were observed in some rats at the highest exposure level. Chronic skin painting studies of coke dust in mice did not produce evidence of carcinogenicity. Petroleum coke (delayed process and fluid process) was found not to be mutagenic in a rat in vivo bone marrow cytogenetic test, a mouse lymphoma assay and an Ames mutagenicity assay.
Adverse effects related to the physical, chemical and toxicological characteristics

Signs and Symptoms Dust may be a mechanical irritant.

Sensitization Not expected to be a skin or respiratory sensitizer.

Mutagenic effects None known.

Carcinogenicity None known.

Cancer designations are listed in the table below

<table>
<thead>
<tr>
<th>Name</th>
<th>ACGIH (Class)</th>
<th>IARC (Class)</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum Coke 64741-79-3</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Sulfur Compounds Mixture</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Polycyclic Aromatic Hydrocarbons Mixture</td>
<td>Suspected human carcinogen(A2)</td>
<td>Carcinogenic to humans (1)</td>
<td>Reasonably anticipated to be a human carcinogen</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>

Reproductive toxicity None known.

Specific Target Organ Toxicity (STOT) - single exposure Not classified.

Specific Target Organ Toxicity (STOT) - repeated exposure Not classified.

Aspiration hazard Not classified.

12. ECOLOGICAL INFORMATION

Ecotoxicity This product is not expected to be harmful to aquatic organisms.

<table>
<thead>
<tr>
<th>Name</th>
<th>Algae/aquatic plants</th>
<th>Fish</th>
<th>Toxicity to Microorganisms</th>
<th>Crustacea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum Coke 64741-79-3</td>
<td>72-hr EL50 &gt;1000 mg/l Algae</td>
<td>96-hr LL50 &gt;1000 mg/l Fathead minnow</td>
<td>-</td>
<td>48-hr EL50 &gt;1000 mg/l Daphnia magna</td>
</tr>
<tr>
<td>Sulfur Compounds Mixture</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Polycyclic Aromatic Hydrocarbons Mixture</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Persistence and degradability No information available.

Bioaccumulation No information available.

Mobility in soil No information available.

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Description of Waste Residues No information available.

Safe Handling of Wastes Handle in accordance with applicable local, state, and federal regulations.

Disposal of Wastes / Methods of Disposal
The user is responsible for determining if any discarded material is a hazardous waste (40 CFR 262.11). Dispose of in accordance with federal, state and local regulations.

Methods of Contaminated Packaging Disposal
Empty containers should be completely drained and then discarded or recycled, if possible. Dispose of in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

DOT (49 CFR 172.101):
- UN Proper Shipping Name: Not Regulated
- UN/Identification No: Not applicable
- Class: Not applicable.
- Packing Group: Not applicable.

TDG (Canada):
- UN Proper Shipping Name: Not Regulated
- UN/Identification No: Not applicable.
- Transport Hazard Class(es): Not applicable.
- Packing Group: Not applicable.

15. REGULATORY INFORMATION

US Federal Regulatory Information:
US TSCA Chemical Inventory Section 8(b): This product and/or its components are listed on the TSCA Chemical Inventory.

EPA Superfund Amendment & Reauthorization Act (SARA):
SARA Section 302: This product does not contain any component(s) included on EPA's Extremely Hazardous Substance (EHS) List.

<table>
<thead>
<tr>
<th>Name</th>
<th>CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum Coke</td>
<td>NA</td>
</tr>
<tr>
<td>Sulfur Compounds</td>
<td>NA</td>
</tr>
<tr>
<td>Polycyclic Aromatic Hydrocarbons</td>
<td>NA</td>
</tr>
</tbody>
</table>

SARA Section 304: This product may contain component(s) identified either as an EHS or a CERCLA Hazardous substance which in case of a spill or release may be subject to SARA reporting requirements:

<table>
<thead>
<tr>
<th>Name</th>
<th>Hazardous Substances RQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum Coke</td>
<td>NA</td>
</tr>
<tr>
<td>Sulfur Compounds</td>
<td>NA</td>
</tr>
<tr>
<td>Polycyclic Aromatic Hydrocarbons</td>
<td>1 lb final RQ 0.454 kg final RQ</td>
</tr>
</tbody>
</table>

SARA: The following EPA hazard categories apply to this product:
- Fire Hazard

SARA Section 313: This product may contain component(s), which if in exceedance of the de minimus threshold, may be subject to the reporting requirements of SARA Title III Section 313 Toxic Release Reporting (Form R).

<table>
<thead>
<tr>
<th>Name</th>
<th>CERCLA/SARA 313 Emission reporting:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum Coke</td>
<td>None</td>
</tr>
<tr>
<td>Sulfur Compounds</td>
<td>None</td>
</tr>
<tr>
<td>Polycyclic Aromatic Hydrocarbons</td>
<td>0.1 % Supplier notification limit</td>
</tr>
</tbody>
</table>

State and Community Right-To-Know Regulations:
The following component(s) of this material are identified on the regulatory lists below:

Petroleum Coke
Louisiana Right-To-Know: Not Listed
California Proposition 65: Not Listed
New Jersey Right-To-Know: Not Listed
Pennsylvania Right-To-Know: Not Listed
Massachusetts Right-To Know: Not Listed
Florida Substance List: Not Listed
Rhode Island Right-To-Know: Not Listed
Michigan Critical Materials Register List: Not Listed
Massachusetts Extraordinarily Hazardous Substances: Not Listed
California - Regulated Carcinogens: Not Listed
Pennsylvania RTK - Special Hazardous Substances:
New Jersey - Special Hazardous Substances: Not Listed
New Jersey - Environmental Hazardous Substances List:
Illinois - Toxic Air Contaminants: Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:

Sulfur Compounds
Louisiana Right-To-Know: Not Listed
California Proposition 65: Not Listed
New Jersey Right-To-Know: Not Listed
Pennsylvania Right-To-Know: Not Listed
Massachusetts Right-To Know: Not Listed
Florida Substance List: Not Listed
Rhode Island Right-To-Know: Not Listed
Michigan Critical Materials Register List: Not Listed
Massachusetts Extraordinarily Hazardous Substances: Not Listed
California - Regulated Carcinogens: Not Listed
Pennsylvania RTK - Special Hazardous Substances:
New Jersey - Special Hazardous Substances: Not Listed
New Jersey - Environmental Hazardous Substances List:
Illinois - Toxic Air Contaminants: Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:

Polycyclic Aromatic Hydrocarbons
Louisiana Right-To-Know: Not Listed
California Proposition 65: Carcinogen
New Jersey Right-To-Know: SN 3758
Pennsylvania Right-To-Know: Environmental hazard; Special hazardous substance
Massachusetts Right-To Know: Carcinogen; Extraordinarily hazardous
Florida Substance List: Not Listed
Rhode Island Right-To-Know: Present
Michigan Critical Materials Register List: 10 lb Annual usage threshold
Massachusetts Extraordinarily Hazardous Substances: Carcinogen; extraordinarily hazardous
California - Regulated Carcinogens: Not Listed
Pennsylvania RTK - Special Hazardous Substances: Present
Substances:
New Jersey - Special Hazardous Substances: SN 3758 TPQ: 500 lb (If you have >500 lbs in combination of any of the listed chemicals, you are to report them under the category heading - N590 (that is, do not report the individual chemicals or their CAS numbers))
New Jersey - Environmental Hazardous Substances List:
Illinois - Toxic Air Contaminants: Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:
Canada DSL/NDSL Inventory: This product and/or its components are listed either on the Domestic Substances List (DSL) or are exempt.

Canadian Regulatory Information: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all of the information required by those regulations.

<table>
<thead>
<tr>
<th>Name</th>
<th>Canada - WHMIS: Classifications of Substances:</th>
<th>Canada - WHMIS: Ingredient Disclosure:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum Coke</td>
<td>UP</td>
<td></td>
</tr>
<tr>
<td>Sulfur Compounds</td>
<td>Uncontrolled product according to WHMIS classification criteria</td>
<td>-</td>
</tr>
<tr>
<td>Polycyclic Aromatic Hydrocarbons</td>
<td>D2A,D2B</td>
<td>0.1%</td>
</tr>
</tbody>
</table>

Note: Not applicable.

16. OTHER INFORMATION

Prepared By: Toxicology and Product Safety

Revision Notes

Revision Date: 10/07/2015
Revised Sections: The following sections (§) have been updated:
2. HAZARD IDENTIFICATION
5. FIRE-FIGHTING MEASURES
6. ACCIDENTAL RELEASE MEASURES
8. EXPOSURE CONTROLS/PERSONAL PROTECTION
9. PHYSICAL AND CHEMICAL PROPERTIES

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is intended as guidance for safe handling, use, processing, storage, transportation, accidental release, clean-up and disposal and is not considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.