1. Product and company identification

Product name: SPENT FCC CATALYST

MSDS #: 0000002511

Historic MSDS #: 04129000 (Amoco); 3222 (BP)

Code: 0000002511

Product use: Industrial applications

Supplier: Marathon Petroleum Company LP
539 South Main Street
Findlay, OH 45840

EMERGENCY HEALTH INFORMATION: 1 (877) 627-5463

EMERGENCY SPILL INFORMATION: 1 (877) 627-5463

OTHER PRODUCT INFORMATION: 419 421-3070

2. Hazards identification

Physical state: Solid.

Color: Gray. Granules.

Emergency overview: DANGER!

- CAUSES RESPIRATORY TRACT AND SKIN BURNS.
- CAUSES EYE IRRITATION.
- MAY CAUSE ALLERGIC RESPIRATORY AND SKIN REACTION.
- CANCER HAZARD
- CONTAINS MATERIAL WHICH CAN CAUSE CANCER

Avoid exposure - obtain special instructions before use. Do not get in eyes, on skin or clothing. Contains material which may cause cancer. Risk of cancer depends on duration and level of exposure. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Routes of entry: Skin Contact. Eye contact. Inhalation. Ingestion.

Potential health effects:

- Eyes: Causes eye irritation.
- Skin: Corrosive to the skin. Causes skin burns. May cause allergic skin reaction. Contains material which can cause cancer. See toxicological Information (section 11).
- Inhalation: Causes respiratory tract burns. May cause allergic respiratory reaction. Contains material which can cause cancer. May contain nickel, which can cause cancer. See toxicological Information (section 11). Contains material which causes damage to the following organs: lungs and nose/sinuses.
- Ingestion: Ingestion may cause gastrointestinal irritation and diarrhea.

See toxicological Information (section 11).
3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>CAS #</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silica, amorphous</td>
<td>7631-86-9</td>
<td>40 - 75</td>
</tr>
<tr>
<td>Aluminum oxide</td>
<td>1344-28-1</td>
<td>25 - 60</td>
</tr>
<tr>
<td>Nickel</td>
<td>7440-02-0</td>
<td>0 - 0.15</td>
</tr>
</tbody>
</table>

4. First aid measures

**Eye contact**
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

**Skin contact**
Immediately wash exposed skin with soap and water. Remove contaminated clothing and shoes. Thoroughly clean shoes before reuse. Wash contaminated clothing before reuse. In the event of any complaints or symptoms, avoid further exposure. Chemical burns must be treated promptly by a physician. Get medical attention immediately.

**Inhalation**
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

**Ingestion**
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Chemical burns must be treated promptly by a physician. Get medical attention immediately.

5. Fire-fighting measures

**Flammability of the product**
Non-flammable.

**Fire/explosion hazards**
No specific fire or explosion hazard.

**Unusual fire/explosion hazards**
None identified.

**Extinguishing media**

- **Suitable**
  Use an extinguishing agent suitable for surrounding fires.

- **Not suitable**
  Do not use water jet.

**Fire-fighting procedures**
Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Hazardous combustion products**
Some metallic oxides.

**Protective clothing (fire)**
Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full facepiece operated in positive pressure mode.

6. Accidental release measures

**Environmental precautions**
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

**Personal protection in case of a large spill**
Chemical splash goggles. Chemical resistant protective suit. Boots. Chemical resistant gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. CAUTION: The protection provided by air-purifying respirators is limited. Use a positive pressure air-supplied respirator if there is any potential for an uncontrolled release, if exposure levels are not known, or if concentrations exceed the protection limits of air-purifying respirator.

**Methods and materials for containment and clean-up**

**Large spill**
Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal.
Move containers from spill area. Vacuum or sweep up material and place in a designated labeled waste container. Dispose of via a licensed waste disposal contractor.

### 7. Handling and storage

#### Handling
Put on appropriate personal protective equipment (see Section 8). Workers should wash hands and face before eating, drinking and smoking. Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not get in eyes, on skin or clothing. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate.

#### Storage
Store in accordance with local regulations. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10). Keep container tightly closed and sealed until ready for use. Containers that are opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

### 8. Exposure controls/personal protection

#### Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Occupational exposure limits</th>
</tr>
</thead>
</table>
| Silica, amorphous | ACGIH (United States).  
TWA: 10 mg/m³ 8 hour(s). Form: As Silica, Amorphous -- Diatomaceous Earth (Uncalcined) Inhalable |
| Aluminum oxide | ACGIH TLV (United States, 1/2007).  
TWA: 10 mg/m³ 8 hour(s), NIOSH REL (United States, 12/2001).  
TWA: 5 mg/m³, (as Al) 10 hour(s); OSHA PEL (United States, 11/2006).  
TWA: 5 mg/m³ 8 hour(s). Form: Respirable fraction  
TWA: 15 mg/m³ 8 hour(s). Form: Total dust |
| Nickel | ACGIH TLV (United States, 1/2007).  
TWA: 1.5 mg/m³ 8 hour(s). Form: Metallic form  
NIOSH REL (United States, 12/2001).  
TWA: 0.015 mg/m³, (as Ni) 10 hour(s); OSHA PEL (United States, 11/2006).  
TWA: 1 mg/m³, (as Ni) 8 hour(s). |

While specific OELs for certain components may be shown in this section, other components may be present in any mist, vapor or dust produced. Therefore, the specific OELs may not be applicable to the product as a whole and are provided for guidance only.

Some states may enforce more stringent exposure limits.

#### Control Measures
Use only with adequate ventilation. If user operations generate dust, fumes, vapor or mist, use process enclosures, local exhaust ventilation, or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

#### Hygiene measures
Ensure that eyewash stations and safety showers are close to the work-station location. Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.

#### Personal protection

- **Eyes**  
Avoid contact with eyes. Chemical splash goggles. Goggles, face shield, or other full-face protection if potential exists for direct exposure to dust.

- **Skin and body**  
Avoid contact with skin. Wear clothing and footwear that cannot be penetrated by chemicals or oil.

- **Respiratory**  
Use adequate ventilation. Avoid breathing dust. If ventilation is inadequate, use a NIOSH certified N95 or P95 particulate respirator (42 CFR 84).

- **Hands**  
Wear gloves that cannot be penetrated by chemicals or oil. The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and

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**Product name** SPENT FCC CATALYST  
**Product code** 0000002511  
**Version** 2  
**Date of issue** 11/15/2007.  
**Format** US-COMP  
**Language** ENGLISH.
9. Physical and chemical properties

**Physical state**  
Solid.

**Color**  
Gray. Granules.

**Specific gravity**  
>1

**pH**  
4-7 Aqueous solution (water)

**Solubility**  
Insoluble in cold water.

10. Stability and reactivity

**Stability and reactivity**  
The product is stable.

**Conditions to avoid**  
None identified.

**Incompatibility with various substances**  
Reactive or incompatible with the following materials: oxidizing materials and acids.

**Hazardous decomposition products**  
Some metallic oxides.

**Hazardous polymerization**  
Will not occur.

11. Toxicological information

**Classification**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silica, amorphous</td>
<td>3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Nickel</td>
<td>2B</td>
<td>Possible</td>
<td>-</td>
</tr>
</tbody>
</table>

IARC:
2B - Possible carcinogen to human.
3 - Not classifiable as a human carcinogen.

NTP:
Possible - Reasonably Anticipated To Be Human Carcinogens.

**Other Toxicity Data**  
Nickel compounds have been classified by IARC as carcinogenic to humans and by NTP as reasonably anticipated to be human carcinogens.

**Other information**

**Potential chronic health effects**

**Carcinogenicity**  
Contains material which may cause cancer. Risk of cancer depends on duration and level of exposure.

**Reproductive effects**  
Nickel may cause effects on the genetic material in reproductive cells.

**Medical conditions aggravated by over-exposure**  
Pre-existing respiratory and skin disorders may be aggravated by over-exposure to this product.

12. Ecological information

No testing has been performed by the manufacturer.
13. Disposal considerations

**Waste information**

The generation of waste should be avoided or minimised wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

**NOTE:** The generator of waste has the responsibility for proper waste identification (based on characteristic(s) or listing), transportation and disposal.

14. Transport information

**International transport regulations**

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN number</th>
<th>Proper shipping name</th>
<th>Class</th>
<th>Packing group</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT Classification</td>
<td>Not regulated.</td>
<td>Not regulated.</td>
<td>-----</td>
<td>-</td>
<td>-----</td>
</tr>
</tbody>
</table>

15. Regulatory information

**U.S. Federal regulations**

**United States inventory (TSCA 8b):** All components are listed or exempted.

**SARA 302/304/311/312 extremely hazardous substances:** No products were found.

**SARA 302/304 emergency planning and notification:** No products were found.

**SARA 302/304/311/312 hazardous chemicals:** alumina

**SARA 311/312 MSDS distribution - chemical inventory - hazard identification:** SPENT FCC CATALYST: Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard

**SARA 313**

<table>
<thead>
<tr>
<th>Form R - Reporting requirements</th>
<th>Product name</th>
<th>CAS number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplier notification</td>
<td>alumina</td>
<td>1344-28-1</td>
<td>25 - 60</td>
</tr>
<tr>
<td></td>
<td>Nickel</td>
<td>7440-02-0</td>
<td>0 - 0.15</td>
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</tbody>
</table>

**CERCLA Sections 102a/103 Hazardous Substances (40 CFR Part 302.4):**

<table>
<thead>
<tr>
<th>CERCLA: Hazardous substances.</th>
<th>Nickel: 100 lbs. (45.36 kg);</th>
</tr>
</thead>
</table>

**State regulations**

**Massachusetts RTK:** The following components are listed: AMORPHOUS SILICA; ALUMINUM OXIDE

**New Jersey Hazardous Substances:** The following components are listed: SILICA, AMORPHOUS (FUMED); ALUMINUM OXIDE; NICKEL

**Pennsylvania RTK:** The following components are listed: SILICA; ALUMINUM OXIDE (AL2O3); NICKEL
WARNING: This product contains a chemical known to the State of California to cause cancer. Nickel

Inventories
- California inventory: All components are listed or exempted.
- Europe inventory: All components are listed or exempted.
- Australia inventory (AICS): All components are listed or exempted.
- China inventory (IECSC): All components are listed or exempted.
- Japan inventory (ENCS): Not determined.
- Korea inventory (KECI): All components are listed or exempted.
- Philippines inventory (PICCS): All components are listed or exempted.

16. Other information

Label requirements
DANGER!
CAUSES RESPIRATORY TRACT AND SKIN BURNS.
CAUSES EYE IRRITATION.
MAY CAUSE ALLERGIC RESPIRATORY AND SKIN REACTION.
CANCER HAZARD
CONTAINS MATERIAL WHICH CAN CAUSE CANCER

HMIS® Rating:
- Health: * 3
- Flammability: 0
- Physical: 0
- Hazard: X
- Personal protection: 

History
- Date of issue: 11/15/2007.
- Date of previous issue: No Previous Validation.
- Prepared by: Product Stewardship

Notice to reader
NOTICE: This Material Safety Data Sheet is based upon data considered to be accurate at the time of its preparation. Despite our efforts, it may not be up to date or applicable to the circumstances of any particular case. We are not responsible for any damage or injury resulting from abnormal use, from any failure to follow appropriate practices or from hazards inherent in the nature of the product.