SAFETY DATA SHEET

Preparation Date: 09/03/2015
Revision Date: 09/03/2015
Revision Number: G1

1. IDENTIFICATION

Product identifier

Product code: P1148
Product Name: PLATINUM BLACK, POWDER

Other means of identification

Synonyms: Platinum sponge
CAS #: 7440-06-4
RTECS #: TP2160000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: Catalyst.
Uses advised against: No information available

Supplier: Spectrum Chemical Mfg. Corp
14422 South San Pedro St.
Gardena, CA 90248
(310) 516-8000

Order Online At: https://www.spectrumchemical.com

Emergency telephone number: Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

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

Flammable solids: Category 2
Hazard not otherwise classified (HNOC)
Not Applicable

Other hazards
Not available

Precautionary Statements - Prevention
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/equipment
Wear protective gloves/protective clothing/eye protection/face protection

In case of fire: Use CO2, dry chemical, or foam to extinguish.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight %</th>
<th>Trade Secret</th>
</tr>
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<tbody>
<tr>
<td>Platinum Black</td>
<td>7440-06-4</td>
<td>100</td>
<td>*</td>
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</table>

4. FIRST AID MEASURES

First aid measures

General Advice: Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126)

Skin Contact: Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention. If skin irritation persists, call a physician.

Eye Contact: Flush eye with water for 15 minutes. Get medical attention.

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Obtain medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms May cause skin irritation. May cause eye irritation.

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically

Product code: P1148  
Product name: PLATINUM BLACK, POWDER
Protection of first-aiders
First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

5. FIRE-FIGHTING MEASURES

Extinguishing Media
Suitable Extinguishing Media: Dry sand. Dry sodium chloride. Graphite powder. Dry powder.

Unsuitable Extinguishing Media: Dry chemical. Water. Foam. CO2. Do not use water, CO2, or foam directly on fire itself. Note that the term "Dry Powder" should not be confused with "Dry Chemical" which is normally associated with extinguishing agents suitable for use on flammable liquid fires. Two familiar dry powder extinguishing agents for controlling combustible metal fires are graphite and sodium chloride.

Specific hazards arising from the chemical
Hazardous Combustion Products: Metal (platinum) oxides
Specific hazards:
- Flammable
- May be ignited by heat, sparks or flames
- Container explosion may occur under fire conditions or when heated
- Dousing metallic fires with water may generate hydrogen gas, an extremely dangerous explosion hazard, particularly if fire is in a confined environment
- Some dry chemicals may create an explosive reaction when applied to combustible metal fires.

Special Protective Actions for Firefighters
Specific Methods: No information available.
Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Personal Precautions: Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing dust. Avoid dust formation. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and material for containment and cleaning up
Methods for containment: Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.
Methods for cleaning up: Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

Product code: P1148  Product name: PLATINUM BLACK, POWDER
7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:
Provide sufficient air exchange and/or exhaust in work rooms. All equipment used when handling the product must be grounded. Avoid dust formation. Remove all sources of ignition. Keep away from incompatible materials.

Safe Handling Advice
Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not ingest. Do not breathe vapours/dust. Keep away from heat and sources of ignition. Avoid dust formation. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:
Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Keep away from heat and sources of ignition. Store away from incompatible materials.

Incompatible Materials:

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

<table>
<thead>
<tr>
<th>Components</th>
<th>OSHA</th>
<th>NIOSH TWA</th>
<th>ACGIH TWA</th>
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Canada

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Australia and Mexico

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<th>Mexico None</th>
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<td>None</td>
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<tr>
<td>7440-06-4</td>
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</table>

Appropriate engineering controls

Engineering measures to reduce exposure:
Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Safety glasses with side-shields

Product code: P1148
Product name: PLATINUM BLACK, POWDER
**Skin and body protection:** Long sleeved clothing. Chemical resistant apron. Gloves.

**Respiratory protection:** Wear respirator with dust filter.

**Hygiene measures:** Avoid contact with skin, eyes and clothing. Wash hands before breaks and at the end of workday. When using, do not eat, drink or smoke.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

- **Physical state:** Solid. Metal.
- **Appearance:** Powder.
- **Color:** Black.
- **Odor:** None.
- **Taste:** No information available
- **Flammability:** No information available
- **Flash point (°C):** No data available
- **Lower Explosion Limit (%):** No information available
- **Upper Explosion Limit (%):** No information available
- **Melting point/range(°C/°F):** 1769 - 1773 °C/3216.2 - 3223.4 °F
- **Boiling point/range(°C/°F):** 3825 - 3827 °C/6917 - 6920.6 °F
- **Decomposition temperature(°C/°F):** No information available
- **Density (g/cm3):** No information available
- **Vapor pressure @ 20°C (kPa):** No information available
- **Evaporation rate:** No information available
- **VOC content (g/L):** No information available
- **Odor threshold (ppm):** No information available
- **Viscosity:** No information available
- **Miscibility:** No information available
- **Flash Point Tested according to:** Not available
- **Autoignition Temperature (°C/°F):** No information available
- **Physical state:** Solid. Metal.
- **Odor:** None.
- **Taste:** No information available
- **Appearance:** Powder.
- **Color:** Black.
- **Formula:** Pt
- **Flammability:** No information available
- **Flash point (°C):** No data available
- **Lower Explosion Limit (%):** No information available
- **Upper Explosion Limit (%):** No information available
- **Melting point/range(°C/°F):** 1769 - 1773 °C/3216.2 - 3223.4 °F
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- **Odor threshold (ppm):** No information available
- **Viscosity:** No information available
- **Miscibility:** No information available
- **Flash Point Tested according to:** Not available
- **Autoignition Temperature (°C/°F):** No information available

### 10. STABILITY AND REACTIVITY

**Reactivity**
- Reactive with oxidizing agents, bases, halogens, cyanides, sulfur, aluminum, acetone, arsenic, carbon + methanol, nitrosyl chloride, dioxygen difluoride, ethanol, hydrazine, hydrogen + air, hydrogen peroxide, lithium, methyl hydroperoxide, ozonides, peroxymonosulfuric acid, phosphorus, selenium, tellurium, vanadium dichloride + water

**Chemical stability**
- Stable under recommended storage conditions

**Possibility of Hazardous Reactions:**
- Hazardous polymerization does not occur

**Conditions to avoid:**

Hazardous decomposition products: Metal oxide fumes.

Other Information
Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Inhalation. Ingestion. Skin.

Acute Toxicity

Component Information

Platinum Black - 7440-06-4
LD50/oral/rat = No information available
LD50/oral/mouse = No information available
LD50/dermal/rat = No information available
LD50/dermal/rabbit = No information available
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No information available
Other LD50 or LC50 information = No information available

Product Information
LD50/oral/rat = VALUE- Acute Tox Oral = No information available

LD50/oral/mouse =
Value - Acute Tox Oral = No information available

LD50/dermal/rabbit
VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat
VALUE - Acute Tox Dermal = No information available

LC50/inhalation/rat
VALUE-Vapor = No information available
VALUE-Gas = No information available
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
VALUE-Vapor = No information available
VALUE - Gas = No information available

Product code: P1148  Product name: PLATINUM BLACK, POWDER
VALUE - Dust/Mist = No information available

**Symptoms**

Skin Contact: May cause skin irritation. May cause allergic skin reaction.

Eye Contact: May cause eye irritation.

Inhalation: May cause respiratory tract irritation.

Ingestion: May cause digestive (gastrointestinal) tract irritation.

Aspiration hazard: No information available

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

**Chronic Toxicity**

Prolonged or repeated inhalation may cause Platinosis, an allergic reaction with symptoms similar to asthma, allergic rhinitis, bronchitis. Symptoms may include eye and nose irritation, shortness of breath, wheezing, cough, and/or chest tightness. Prolonged or repeated inhalation may cause allergic rhinitis, bronchitis. Symptoms may include eye and nose irritation, shortness of breath, wheezing, cough, and/or chest tightness. Prolonged or repeated skin contact may cause allergic skin reaction. If allergy develops, very low future exposure can cause itching and skin rash. Repeated or prolonged ingestion may affect the blood.

Sensitization: May cause sensitization by inhalation and skin contact

Mutagenic Effects: No information available

Carcinogenic effects: May cause cancer based on animal test data. Equivocal tumorigenic agent by RTECS criteria.

<table>
<thead>
<tr>
<th>Components</th>
<th>IARC</th>
<th>ACGIH - Carcinogens</th>
<th>NTP</th>
<th>OSHA HCS - Carcinogens</th>
<th>Australia - Prohibited Carcinogenic Substances</th>
<th>Australia - Notifiable Carcinogenic Substances</th>
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<tbody>
<tr>
<td>Platinum Black</td>
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<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
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</table>

Reproductive toxicity: No data is available

Reproductive Effects: No information available

Developmental Effects: No information available

Teratogenic Effects: No information available

**Specific Target Organ Toxicity**

STOT - single exposure: No information available

STOT - repeated exposure: No information available

Target Organs: No information available

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**12. ECOLOGICAL INFORMATION**

Ecotoxicity

Ecotoxicity effects: No data available.

Product code: P1148  
Product name: PLATINUM BLACK, POWDER
Persistence and degradability: No information available
Bioaccumulative potential: No information available
Mobility: No information available

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

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<tbody>
<tr>
<td>Platinum Black</td>
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<td>None</td>
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</tbody>
</table>

14. TRANSPORT INFORMATION

DOT

UN-No: UN3089
Proper Shipping Name: Metal powders, flammable, n.o.s.
Hazard Class: 4.1
Subsidiary Risk: No information available
Packing Group: III
ERG No: 170
Marine Pollutant: No data available
DOT RQ (lbs): No information available

TDG (Canada)

UN-No: UN3089
Proper Shipping Name: Metal powder, flammable, n.o.s.
Hazard Class: 4.1
Subsidiary Risk: No information available
Packing Group: III
Description: No information available

ADR

UN-No: UN3089
Proper Shipping Name: Metal powder, flammable, n.o.s.
Hazard Class: 4.1
Packing Group: III
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available
CEFIC Tremcard No: No information available

IMO / IMDG

UN-No: UN3089
Proper Shipping Name: Metal powder, flammable, n.o.s.
Hazard Class: 4.1

Product code: P1148
Product name: PLATINUM BLACK, POWDER
14. TRANSPORT INFORMATION

Subsidiary Risk: No information available
Packing Group: III
Description: No information available
IMDG Page: No information available
Marine Pollutant: No information available
EMS: F-G
MFAG: No information available
Maximum Quantity: No information available

RID
UN-No: UN3089
Proper Shipping Name: Metal powder, flammable, n.o.s.
Hazard Class: 4.1
Subsidiary Risk: 4.1
Packing Group: III
Classification Code: No information available
Description: No information available

ICAO
UN-No: Metal Powder, flammable, n.o.s (Platinum, powder)UN3089
Proper Shipping Name: Metal powder, flammable, n.o.s.
Hazard Class: 4.1
Subsidiary Risk: No information available
Packing Group: III
Description: No information available

IATA
UN-No: UN3089
Proper Shipping Name: Metal powder, flammable, n.o.s.
Hazard Class: 4.1
Subsidiary Risk: No information available
Packing Group: III
ERG Code: 3L
Description: No information available

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Components</th>
<th>U.S. TSCA</th>
<th>KOREA KECL</th>
<th>Philippines (PICCS)</th>
<th>Japan ENCS</th>
<th>CHINA</th>
<th>Australia (AICS)</th>
<th>EINECS-No.</th>
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<tbody>
<tr>
<td>Platinum Black</td>
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<td>Present KE-28808</td>
<td>Present</td>
<td>Not present</td>
<td>Present</td>
<td>Present</td>
<td>Present 231-116-1</td>
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</table>

U.S. Regulations

*Platinum Black*
- Massachusetts RTK: Present
- New Jersey RTK Hazardous Substance List: 1547
- Pennsylvania RTK: Present
- Minnesota - Hazardous Substance List: Present
- California Directors List of Hazardous Substances: Present


Chemicals Known to the State of California to Cause Cancer:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)
Chemicals Known to the State of California to Cause Reproductive Toxicity:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

<table>
<thead>
<tr>
<th>Components</th>
<th>Carcinogen</th>
<th>Developmental Toxicity</th>
<th>Male Reproductive Toxicity</th>
<th>Female Reproductive Toxicity</th>
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CERCLA/SARA

<table>
<thead>
<tr>
<th>Components</th>
<th>CERCLA - Hazardous Substances and their Reportable Quantities</th>
<th>Section 302 Extremely Hazardous Substances and TPQs</th>
<th>Section 302 Extremely Hazardous Substances and RQs</th>
<th>Section 313 - Chemical Category</th>
<th>Section 313 - Reporting de minimis</th>
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</thead>
<tbody>
<tr>
<td>Platinum Black</td>
<td>None</td>
<td>None</td>
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U.S. TSCA

<table>
<thead>
<tr>
<th>Components</th>
<th>TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)</th>
<th>TSCA 8(d) - Health and Safety Reporting</th>
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<tbody>
<tr>
<td>Platinum Black</td>
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</tbody>
</table>

Canada

WHMIS hazard class:
B4 Flammable solid

Platinum Black
Uncontrolled product according to WHMIS classification criteria (for Platinum as non-powder)
B4 - Flammable Solid (powder)

Canada Controlled Products Regulation:
This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

| Components          | WHMIS Ingredient Disclosure List - | |
|---------------------|-----------------------------------| |
| Platinum Black      | 1 %                               | |

Inventory

<table>
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<tr>
<th>Components</th>
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<tr>
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<th>CEPA Schedule I - Toxic Substances</th>
<th>CEPA - 2010 Greenhouse Gases Subject to Manditory Reporting</th>
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</table>

EU Classification

R-phrase(s)
R11 - Highly flammable.

Product code: P1148  Product name: PLATINUM BLACK, POWDER
S-phrase(s)
S 7 - Keep container tightly closed.
S33 - Take precautionary measures against static discharges.
S43 - In case of fire use DRY sand, Graphite powder, or DRY Sodium Chloride based extinguishers. Never use water, foam or CO2

<table>
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<tr>
<th>Components</th>
<th>Classification</th>
<th>Concentration Limits:</th>
<th>Safety Phrases</th>
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The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:
F - Highly flammable.

16. OTHER INFORMATION
Disclaimer: All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet