

SAFETY DATA SHEET

Preparation Date: 8/18/2017

Revision Date: Not Applicable

Revision Number: Not Applicable

1. IDENTIFICATION

Product identifier

Product code: SP-400
Product Name: 5% Ruthenium on Activated Carbon Powder, Reduced, Water Wet, 27 microns

Other means of identification

Synonyms: No information available
CAS #: Mixture
RTECS # Not available
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: No information available.
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 according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity (single exposure)	Category 3

Label elements

Warning

Hazard statements

Causes skin irritation
 Causes serious eye irritation
 May cause respiratory irritation

**Hazards not otherwise classified (HNOC)**

Not Applicable

Other hazards

Not available

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wear protective gloves
Wear eye/face protection

Precautionary Statements - Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
IF ON SKIN: Wash with plenty of water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash it before reuse
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed
Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
Water	7732-18-5	50
Charcoal activated	7440-44-0	45
Ruthenium	7440-18-8	5

4. FIRST AID MEASURES**First aid measures****General Advice:**

National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222.

Skin Contact:

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

Eye Contact:

Flush eyes with water for 15 minutes. Get medical attention. If symptoms persist, call a physician.

Product code: SP-400**Product name:** 5% Ruthenium on
Activated Carbon Powder, Reduced,
Water Wet, 27 microns**2 / 12**

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 Causes eye irritation. Eye contact may result in redness or pain. Causes skin irritation. Skin contact may result in redness, pain, inflammation, itching, scaling. Irritating to respiratory system.

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically.

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: The product is not flammable. If it is involved in a fire, extinguish the fire using an agent suitable for the type of surrounding fire.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products: No information available.

Specific hazards: No information available.

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. Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas.

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.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. 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 dust. Use only in well-ventilated areas. 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. Store at room temperature in the original container. Store away from incompatible materials.

Incompatible Materials:

Oxidizing agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	CAS-No.	OSHA	NIOSH	ACGIH	AIHA WEEL
Water	7732-18-5	None	None	None	None
Charcoal activated	7440-44-0	None	None	None	None
Ruthenium	7440-18-8	None	None	None	None

Canada

Components	CAS-No.	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
Water	7732-18-5	None	None	None	None
Charcoal activated	7440-44-0	None	None	None	None
Ruthenium	7440-18-8	None	None	None	None

Product code: SP-400

Product name: 5% Ruthenium on Activated Carbon Powder, Reduced, Water Wet, 27 microns

4 / 12

Australia and Mexico

Components	CAS-No.	Australia	Mexico
Water	7732-18-5	None	None
Charcoal activated	7440-44-0	None	2 mg/m ³ TWA
Ruthenium	7440-18-8	None	None

Appropriate engineering controls

Engineering measures to reduce exposure:

Ensure adequate ventilation, especially in confined areas. 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. In case of insufficient ventilation, wear suitable respiratory equipment.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Safety glasses or Goggles

Skin and body protection: Long sleeved clothing
apron
Gloves

Respiratory protection: Respiratory protection is not necessary for normal handling. Good room ventilation or use of local exhaust (fume hood) is sufficient. In well ventilated areas or if used in a fume hood, respiratory protection is not normally required.

Hygiene measures: Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:

Solid

Appearance:

Free flowing wettable powder. Powder wetted with water while keeping free-flowing powder characteristics.

Color:

Black.

Odor:

Odorless.

Taste

No information available.

Formula:

No information available

Molecular/Formula weight:

No information available

Flammability:

No information available

Flashpoint (°C/°F):

No information available.

Flash Point Tested according to:

Not available

Autoignition Temperature (°C/°F):

No information available

Lower Explosion Limit (%):

No information available

Upper Explosion Limit (%):

No information available

Melting point/range(°C/°F):

No information available

Decomposition temperature(°C/°F):

No information available

Boiling point/range(°C/°F):

No information available

Bulk density:

No information available

Density (g/cm³):

1.8-2.1

Product code: SP-400

Product name: 5% Ruthenium on Activated Carbon Powder, Reduced, Water Wet, 27 microns

Specific gravity:
No information available

pH:
No information available

Vapor pressure @ 20°C (kPa):
No information available

Evaporation rate:
No information available

Vapor density:
No information available

VOC content (g/L):
No information available

Odor threshold (ppm):
No information available

**Partition coefficient
(n-octanol/water):**
No information available

Viscosity:
No information available

Miscibility:
No information available

Solubility:
Insoluble in water

10. STABILITY AND REACTIVITY

Reactivity
No information available

Chemical stability

Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat. Incompatible materials.

Incompatible Materials: Oxidizing agents

Hazardous decomposition products: No information available.

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:
Ingestion. Inhalation.

Acute Toxicity

Component Information

Water	
CAS-No.	7732-18-5

LD50/oral/rat = > 90 mL/kg Oral LD50 Rat
LD50/oral/mouse = No information available
LD50/dermal/rabbit = No information available
LD50/dermal/rat = No information available
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No information available

Product code: SP-400

Product name: 5% Ruthenium on
Activated Carbon Powder, Reduced,
Water Wet, 27 microns

6 / 12

Other LD50 or LC50 information = No information available

Charcoal activated	
CAS-No.	7440-44-0
LD50/oral/rat = >10000 mg/kg Oral LD50 Rat	
LD50/oral/mouse = >5000 mg/kg	
LD50/dermal/rabbit = No information available	
LD50/dermal/rat = No information available	
LC50/inhalation/rat = No information available	
LC50/inhalation/mouse = No information available	
Other LD50 or LC50 information = >5000 mg/kg LD50 Oral Dog	

Ruthenium	
CAS-No.	7440-18-8
LD50/oral/rat = No information available	
LD50/oral/mouse = No information available	
LD50/dermal/rabbit = No information available	
LD50/dermal/rat = 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
VALUE - Dust/Mist = No information available

Symptoms

- Skin Contact:** Causes skin irritation.
- Eye Contact:** Causes serious eye irritation.
- Inhalation** Irritating to respiratory system.
- Ingestion** May cause vomiting. May cause constipation.
- Aspiration hazard** No information available.

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

Product code: SP-400

Product name: 5% Ruthenium on
Activated Carbon Powder, Reduced,
Water Wet, 27 microns

Chronic Toxicity No information available.

Sensitization: No information available.

Mutagenic Effects: No information available

Carcinogenic effects: Not considered carcinogenic.

Components	CAS-No.	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed
Charcoal activated	7440-44-0	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed
Ruthenium	7440-18-8	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

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 Respiratory system.

STOT - repeated exposure No information available.

Target Organs: No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: No data available.

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.

Product code: SP-400

Product name: 5% Ruthenium on Activated Carbon Powder, Reduced, Water Wet, 27 microns

Contaminated packaging:

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

Components	CAS-No.	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Water	7732-18-5	None	None	None	None
Charcoal activated	7440-44-0	None	None	None	None
Ruthenium	7440-18-8	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Class: No information available
Packing group: No information available
Emergency Response Guide Number: No information available
Marine Pollutant: No data available
DOT RQ (lbs): No information available
Special Provisions: No Information available
Symbol(s): No information available
Description: No information available

TDG (Canada)

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Marine Pollutant: No Information available
Description: No information available

ADR

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Packing Group: No information available
Subsidiary Risk: No information available

IMO / IMDG

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Marine Pollutant: No information available

RID

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available

ICAO

UN-No: Not Regulated

Product code: SP-400

Product name: 5% Ruthenium on Activated Carbon Powder, Reduced, Water Wet, 27 microns

9 / 12

Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available

IATA

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
ERG Code: No information available
Special Provisions No information available

15. REGULATORY INFORMATION

International Inventories

Components	CAS-No.	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
Water	7732-18-5	Present	Present KE-35400	Present	Not present	Present	Present	Present 231-791-2
Charcoal activated	7440-44-0	Present	Present KE-04671	Present	Not present	Present	Present	Present 231-153-3
Ruthenium	7440-18-8	Present	Present KE-30666	Present	Not present	Present	Present	Present 231-127-1

U.S. Regulations

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

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)

Components	CAS-No.	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Water	7732-18-5	Not Listed	Not Listed	Not Listed	Not Listed
Charcoal activated	7440-44-0	Not Listed	Not Listed	Not Listed	Not Listed
Ruthenium	7440-18-8	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CAS-No.	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
Water	7732-18-5	None	None	None	None	None
Charcoal activated	7440-44-0	None	None	None	None	None
Ruthenium	7440-18-8	None	None	None	None	None

U.S. TSCA

Components	CAS-No.	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting

Product code: SP-400

Product name: 5% Ruthenium on Activated Carbon Powder, Reduced, Water Wet, 27 microns

Water	7732-18-5	Not Applicable	Not Applicable
Charcoal activated	7440-44-0	Not Applicable	Not Applicable
Ruthenium	7440-18-8	Not Applicable	Not Applicable

Canada

WHMIS 2015 - GHS Classifications

WHMIS 2015 Hazard Classification Information: The WHMIS 2015 classification of this product has not been validated or reviewed yet.

Component	WHMIS 2015 Hazard Classification
Water	Not a dangerous product according to HPR classification criteria
7732-18-5 (50)	
Charcoal activated	Combustible Dust - Category 1: May form combustible dust concentrations in air (factors such as combustibility and explosiveness of dusts including composition and shape and size of particles could cause substance to belong to 'Combustible dust' hazard class)
7440-44-0 (45)	

Canada Hazardous Products Regulation This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR

WHMIS 1988 Hazard Class

The classification of this product has not been validated yet

Components

Water

WHMIS 1988

Uncontrolled product according to WHMIS classification criteria

Charcoal activated

Uncontrolled product according to WHMIS classification criteria

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.

Inventory

Components	CAS-No.	Canada (DSL)	Canada (NDSL)
Water	7732-18-5	Present	Not Listed
Charcoal activated	7440-44-0	Present	Not Listed
Ruthenium	7440-18-8	Present	Not Listed

Components	CAS-No.	CEPA Schedule I - Toxic Substances
Water	7732-18-5	Not listed
Charcoal activated	7440-44-0	Not listed
Ruthenium	7440-18-8	Not listed
Components	CAS-No.	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Water	7732-18-5	Not listed
Charcoal activated	7440-44-0	Not listed
Ruthenium	7440-18-8	Not listed

EU Classification

EU GHS - SV - CLP 1272/2008

Components	CAS-No.	EU GHS - SV - CLP (1272/2008)
Water	7732-18-5	
Charcoal activated	7440-44-0	No information
Ruthenium	7440-18-8	

Product code: SP-400

Product name: 5% Ruthenium on Activated Carbon Powder, Reduced, Water Wet, 27 microns

11 / 12

EU - CLP (1272/2008)

R-phrases)

Not determined

S -phrase(s)

none

Components	CAS-No.	Classification	Concentration Limits:	Safety Phrases
Water	7732-18-5		No information	
Charcoal activated	7440-44-0		No information	
Ruthenium	7440-18-8		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

not determined

16. OTHER INFORMATION

Preparation Date: 8/18/2017
Revision Date: Not Applicable
Prepared by: Sonia Owen

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