

SAFETY DATA SHEET

Preparation Date: 10/5/2017

Revision Date: Not Applicable

Revision Number: Not Applicable

1. IDENTIFICATION

Product identifier

Product code: SP-301
Product Name: 5% Rhodium on Alumina Powder, Reduced, Dry, 70 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 not considered hazardous according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements

Not classified

Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

Not available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
Aluminum Oxide	1344-28-1	94.5-95.5
Rhodium	7440-16-6	4.5-5.5

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 irritation develops. Consult a physician if necessary.
- Eye Contact:** Flush eyes with water for 15 minutes. Get medical attention if irritation occurs. If symptoms persist, call a physician.
- 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. Consult a physician if necessary.

Most important symptoms and effects, both acute and delayed

- Symptoms**
- May cause eye irritation
 - May cause skin irritation
 - May cause irritation of respiratory tract
 - May cause digestive (gastrointestinal) tract irritation

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:** If it is involved in a fire the following can be released: Aluminum oxides. Rhodium oxide.

- Specific hazards:** No information available.

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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. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation.
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	Use appropriate tools to put the spilled solid in a suitable waste disposal container. 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. Keep away from heat and sources of ignition. Do not ingest. Do not breathe dust. 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. Store away from incompatible materials.

Incompatible Materials:

Oxidizing agents
Strong acids
Strong bases

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	CAS-No.	OSHA	NIOSH	ACGIH	AIHA WEEL
Aluminum Oxide	1344-28-1	15 mg/m ³ TWA	None	1 mg/m ³	None

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				TWA(respirable particulate)(aluminum insoluble compounds)	
Rhodium	7440-16-6	0.1 mg/m ³ TWA	= 0.1 mg/m ³ TWA	= 1 mg/m ³ TWA	None

Canada

Components	CAS-No.	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
Aluminum Oxide	1344-28-1	= 10 mg/m ³ TWA	None	1.0 mg/m ³ TWA (respirable) (aluminum insoluble compounds)	10 mg/m ³ TWAEV Al total dust
Rhodium	7440-16-6	= 1 mg/m ³ TWA	= 0.1 mg/m ³ TWA	1 mg/m ³ TWA	0.1 mg/m ³ TWAEV

Australia and Mexico

Components	CAS-No.	Australia	Mexico
Aluminum Oxide	1344-28-1	10 mg/m ³ TWA	= 10 mg/m ³ TWA
Rhodium	7440-16-6	1 mg/m ³ TWA	= 1 mg/m ³ TWA

Appropriate engineering controls

Engineering measures to reduce exposure:

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:** Goggles or Safety glasses with side-shields
- Skin and body protection:** Long sleeved clothing
apron
Gloves
- Respiratory protection:** Effective dust mask. Use a dust respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentration of dust (dust clouds) , inadequate ventilation, development of respiratory tract irritation), and engineering controls are not feasible. Be sure to use an approved/certified respirator or equivalent.
- 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:

Solid

Appearance:

Powder.

Color:

Gray.

Odor:

Odorless.

Taste

No information available.

Formula:

No information available

Molecular/Formula weight:

No information available

Flammability:

Not flammable

Flashpoint (°C/°F):

No information available.

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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): 2072 (°C)/3761.6 (°F)	Decomposition temperature(°C/°F): No information available
Boiling point/range(°C/°F): No information available	Bulk density: 930-1010 kg/m ³	Density (g/cm³): No information available
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

For Aluminum oxide:

Chlorine trifluoride reacts violently with Aluminum oxide producing a flame. Ethylene Oxide may polymerize violently when in contact with Aluminum oxide. Reacts with hot chlorinated rubber

Chemical stability

Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Avoid dust formation. Incompatible materials.

Incompatible Materials: Oxidizing agents
Strong acids
Strong bases

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:
Inhalation. Ingestion.

Acute Toxicity

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Component Information

Aluminum Oxide	
CAS-No.	1344-28-1
LD50/oral/rat = > 5000 mg/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	
Other LD50 or LC50information = No information available	

Rhodium	
CAS-No.	7440-16-6
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 LC50information = 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: May cause skin irritation.

Eye Contact: May cause eye irritation.

Inhalation May cause respiratory tract irritation.

Ingestion May cause digestive (gastrointestinal) tract irritation.

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Aspiration hazard No information available.

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

Chronic Toxicity For Aluminum oxide: Prolonged or repeated inhalation may cause emphysema, pneumothorax, and may produce small pulmonary radiographic opacities, but are usually not fibrogenic. Some epidemiologic studies have shown excess nonmalignant pulmonary fibrosis or fibrotic changes in the lungs while other have not. May result in high levels of aluminum fibers in the lungs. Also, some reports attribute aluminum oxide exposure as causing pneumoconiosis. However, workers exposed to powdered alumina in the china industry for more than 15 years had no radiological signs of pneumoconiosis. Studies of persons chronically exposed to Aluminum Oxide dust have found a dose-dependent increase of aluminum concentrations in the blood and urine, indicating that systemic distribution of aluminum can occur from dust inhalation. Animal studies showed that the retention of aluminum in the lungs of rats depended on the exposure pattern, with more dust being retained with longer exposure to lower concentrations than from shorter times with higher doses. Ingestion or Inhalation: Aluminum can accumulate in the bone with consequent increased bone fragility and fractures. This could be due to inhibition of parathyroid hormone.

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
Aluminum Oxide	1344-28-1	Not listed	A4 - Not Classifiable as a Human Carcinogen (listed as Aluminum insoluble compounds)	Not listed	Not listed	Not listed	Not listed
Rhodium	7440-16-6	Not listed	A4 Not Classifiable as a Human Carcinogen	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 No information available.

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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.

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
Aluminum Oxide	1344-28-1	None	None	None	None
Rhodium	7440-16-6	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

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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
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.
<i>Aluminum Oxide</i>	1344-28-1	Present	Present KE-01012	Present	Present (1)-23	Present	Present	Present 215-691-6
<i>Rhodium</i>	7440-16-6	Present	Present KE-30318	Present	Not present	Present	Present	Present 231-125-0

U.S. Regulations*Aluminum Oxide*

Massachusetts RTK: Present
New Jersey RTK Hazardous Substance List: sn 2891
New Jersey (EHS) List: sn 2891 500 lb TPQ
New Jersey - Discharge Prevention - List of Hazardous Substances: Present
Pennsylvania RTK: Environmental hazard

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Pennsylvania RTK - Environmental Hazard List Present
 Pennsylvania RTK - Special Hazardous Substances Present
 Minnesota - Hazardous Substance List: Present
 California Directors List of Hazardous Substances: Present

Rhodium

Massachusetts RTK: Present
 New Jersey RTK Hazardous Substance List: sn 1635
 Pennsylvania RTK: Present
 Minnesota - Hazardous Substance List: Present
 California Directors List of Hazardous Substances: Present

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:
Aluminum Oxide	1344-28-1	Not Listed	Not Listed	Not Listed	Not Listed
Rhodium	7440-16-6	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
Aluminum Oxide	1344-28-1	None	None	None	None	1.0 % de minimis concentration
Rhodium	7440-16-6	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
Aluminum Oxide	1344-28-1	Not Applicable	Not Applicable
Rhodium	7440-16-6	Not Applicable	Not Applicable

Canada

WHMIS 2015 - GHS Classifications

WHMIS 2015 Hazard Classification Information: Not a dangerous product according to HPR classification criteria.

Component
 Rhodium
 7440-16-6 (4.5-5.5)

WHMIS 2015 Hazard Classification
 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)

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

Non-controlled

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Components
Aluminum Oxide

WHMIS 1988

Uncontrolled product according to WHMIS classification criteria

Rhodium

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.

Components	WHMIS Ingredient Disclosure List -
Aluminum Oxide	1 %
Rhodium	1 %

Inventory

Components	CAS-No.	Canada (DSL)	Canada (NDSL)
Aluminum Oxide	1344-28-1	Present	Not Listed
Rhodium	7440-16-6	Present	Not Listed

Components	CAS-No.	CEPA Schedule I - Toxic Substances
Aluminum Oxide	1344-28-1	Not listed
Rhodium	7440-16-6	Not listed

Components	CAS-No.	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Aluminum Oxide	1344-28-1	Not listed
Rhodium	7440-16-6	Not listed

EU Classification**EU GHS - SV - CLP 1272/2008**

Components	CAS-No.	EU GHS - SV - CLP (1272/2008)
Aluminum Oxide	1344-28-1	
Rhodium	7440-16-6	

EU - CLP (1272/2008)**R-phrases)**

not determined (not applicable)

S -phrase(s)

none

Components	CAS-No.	Classification	Concentration Limits:	Safety Phrases
Aluminum Oxide	1344-28-1		No information	
Rhodium	7440-16-6		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC**Indication of danger:**

None.

16. OTHER INFORMATION

Preparation Date: 10/5/2017
Revision Date: Not Applicable
Prepared by: Sonia Owen

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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