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SAFETY DATA SHEET

Section 1- IDENTIFICATION		
COMPOSITION Rh		PRODUCT NAME Rhodium
SUPPLIER: Plasmaterials, Inc. 2268 Research Drive Livermore, CA 94550 Ph: 925-447-4030	RECOMMENDED USE: Laboratory Chemicals Scientific Research	EMERGENCY TELEPHONE NUMBERS US: 001-800-424-9300 Europe: 001-703-527-3887

Section 2- HAZARD(S) IDENTIFICATION	
PHYSICAL HAZARDS: -Flammable Solids: Category 2 (H228)	Health Hazards: Not classified
Environmental Hazards: Not classified	OSHA Defined Hazards: Not classified
LABEL ELEMENTS: Signal Word: Warning	
	
HAZARD STATEMENTS	
-H228: Flammable solid	
PRECAUTIONARY STATEMENTS	
-P210: Keep away from heat/sparks/open flames/hot surfaces-No Smoking -P240: Ground/bound container and receiving equipment -P241: Use explosion-proof electrical/ventilating/lighting equipment -P280: Wear protective gloves, protective clothing, eye protection and face protection -P370+P378: In case of fire: Use appropriate media to extinguish -P420: Store away from incompatible materials -P501: Dispose of contents/container in accordance with local/regional/national/international regulations	
Hazards not otherwise classified (HNOC):	
-None identified.	

Section 3- COMPOSITION/INFORMATION ON INGREDIENTS		
COMPONENT	CAS-No	Molecular Weight
Rhodium	7440-16-6	102.9 g/mol

Section 4- FIRST AID MEASURES

GENERAL ADVICE: If exposed or concerned: get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

INHALATION: Remove victim from exposure to fresh air and keep at rest in a position comfortable for breathing. Call a doctor/physician if symptoms develop or persist.

SKIN CONTACT: Wash off with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation develops and/or persists.

EYE CONTACT: Do not rub eyes. Flush eyes with lukewarm water, lifting upper and lower lids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and/or persists.

INGESTION: Rinse mouth with water. If ingestion of a large amount does occur, call a poison control center immediately. Never give anything by mouth to an unconscious person. Call a doctor/physician if symptoms develop or persist.

MOST IMPORTANT SYMPTOMS/EFFECTS: Direct contact with eyes may cause temporary irritation.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT

NEEDED: Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.

Section 5- FIREFIGHTING MEASURES

Suitable Extinguishing Media:

Water Fog, Dry Chemical Powder, Carbon Dioxide (CO₂), Foam

Unsuitable Extinguishing Media:

Do not use water jet as an extinguisher as this will spread the fire

Specific Hazards Arising from the Chemical:

During fire, gases hazardous to health may be formed.

Protective Equipment & Precautions for Firefighters: As in any fire, Firefighters must wear full face, self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective clothing to prevent contact with skin and eyes.

Fire Fighting Instructions:

In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.

Specific Methods:

Use standard firefighting procedures and consider the hazards of other involved materials.

General Fire Hazards:

Flammable solid

Section 6- ACCIDENTAL RELEASE MEASURES

Personal Precautions: Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection see section 8.

Environmental Precautions: Avoid discharge into drains, water courses or onto the ground.

Methods for Containment & Clean Up:

- Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area).
- Take precautionary measures against static discharge.
- Use only non-sparking tools.
- The product is immiscible with water and will spread on the water surface.
- Stop the flow of the material if this is without risk.
- Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Avoid the generation of dusts during clean up. Following product recovery, flush area with water.
- Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean surface thoroughly to remove residual contamination.

- Never return spills to original containers for re-use.
- For waste disposal, see Section 13.

Section 7- HANDLING AND STORAGE

Handling: Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. Explosion-proof general and local exhaust ventilation. Avoid prolonged exposure. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use care in handling and storage.

Storage: Store in a cool, dry, and well-ventilated place out of direct sunlight. Store in original tightly closed container. Keep away from heat, sources of ignition, sparks, and open flame. Keep in an area equipped with sprinklers. Store away from incompatible materials. (See Section 10 of SDS)

Section 8- EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:

Component	CAS-No.	Value	Control Parameters	Basis
Rhodium	7440-16-6	TWA	1 mg/m ³	US ACGIH Threshold Limit Values
		TWA	0.1 mg/m ³ (Fume)	US NIOSH Pocket Guide to Chemical Hazards
		PEL	0.1 mg/m ³ (Fume)	USA. Occupational Exposure Limits OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Biological Limit Values: No biological exposure limits noted for the ingredient(s)

Control Parameters: Follow standard monitoring procedures.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety practice. Keep away from food and drink. Wash thoroughly after handling and before eating, drinking and/or smoking. Wash hands before breaks and at the end of the workday. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

Personal Protective Equipment:

Eye/Face Protection: Wear safety glasses with side shields or goggles. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Skin and Body Protection: Handle with chemical resistant gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Wear appropriate protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory Protection: In case of insufficient ventilation, wear suitable respiratory equipment. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Thermal Hazards: Wear appropriate thermal protective clothing, when necessary.

Section 9- PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid

Odor: No information available

Odor Threshold: No information available

pH: No information available

Melting Point/Range: 1964°C / 3567.2°F

Boiling Point/Range: 3695°C / 6683°F

Flash Point: No information available

Evaporation Rate: No information available

Flammability (solid,gas): Flammable solid

Flammability or Exposure Limits:**Upper:** No information available**Lower:** No information available**Vapor Pressure:** No information available**Vapor Density:** No information available**Relative Density:** No information available**Solubility (Water):** Insoluble**Partition coefficient; n-octanol/water:** No information available**Auto Ignition Temperature:** No information available**Decomposition Temperature:** No information available**Viscosity:** No information available**Density:** 12.41 g/cm³ at 20 °C**Explosive Properties:** Not explosive**Oxidizing Properties:** Not oxidizing**Specific Gravity:** 12.41**Section 10- STABILITY AND REACTIVITY****Reactive Hazard:** Stable and non-reactive under normal conditions of use, storage, and transport.**Stability:** Stable under normal conditions**Conditions to Avoid:** Heat, flames, and sparks. Contact with incompatible materials.**Incompatible Materials:** Strong oxidizing agents, Chlorine**Hazardous Decomposition Products:** No information available**Hazardous Reactions:** No information available**Section 11- TOXICOLOGICAL INFORMATION****Information on likely Routes of Exposure:****Inhalation:** Prolonged inhalation may be harmful.**Skin Contact:** No information available**Eye Contact:** Direct contact with eyes may cause temporary irritation**Ingestion:** Expected to be a low ingestion hazard**Symptoms Related to the Physical, Chemical & Toxicological Characteristics:** Direct contact with eyes may cause temporary irritation.**Information on Toxicological Effects:****Acute Toxicity:** No information available**Skin Corrosion/Irritation:** Prolonged skin contact may cause temporary irritation**Serious Eye Damage/Eye Irritation:** Direct contact with eyes may cause temporary irritation**Respiratory Sensitization:** No information available**Skin Sensitization:** No information available**Carcinogenicity:** This product is not considered to be a carcinogen by IARC, ACGIH, NTP or OSHA.**Germ Cell Mutagenicity:** No information available**Reproductive Toxicity:** No information available**Development Toxicity:** No information available**Specific Target Organ Toxicity – single exposure:** No information available**Specific Target Organ Toxicity – repeated exposure:** No information available**Aspiration Hazard:** No information available**Chronic Effects:** Prolonged inhalation may be harmful.**-To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.**

Section 12- ECOLOGICAL INFORMATION

Ecotoxicity: Not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and Degradability: No information available

Bioaccumulation/Accumulation: No information available

Mobility: No information available

Other Adverse Effects: No other adverse environmental effects are expected from this component.

Section 13- DISPOSAL CONSIDERATIONS

Waste Disposal Methods: Collect and reclaim or dispose in sealed containers to a licensed waste disposal site. Dispose of contaminated packaging as unused product. Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 14- TRANSPORT INFORMATION

DOT: Not regulated as dangerous goods

IATA: Not regulated as dangerous goods

IMDG/IMO: Not regulated as dangerous goods

Section 15- REGULATORY INFORMATION

US Federal Regulations: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D): Not regulated

U.S. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050): Not Listed

CERCLA Hazardous Substance List (40 CFR 302.4): Not Listed

SARA Hazard Categories:

Immediate Hazard: No

Delayed Hazard: No

Fire Hazard: Yes

Pressure Hazard: No

Reactivity Hazard: No

SARA 302 Extremely Hazardous Substance: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

SARA 311/312 Hazardous Chemical: Yes

SARA 313 (TRI Reporting): This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313

Safe Drinking Water Act (SDWA): Not regulated

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List: Not regulated

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130): Not regulated

US California Proposition 65: This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

US California Controlled Substances. CA Dept of Justice (California Health & Safety Code Section 11100): Not Listed

US Massachusetts Right-to-Know – Substance List: Rhodium (CAS 7440-16-6)

US New Jersey Right-to-Know Substances: Rhodium (CAS 7440-16-6)

US New Jersey Worker & Community Right-to-Know Act: Not regulated

US Pennsylvania Right-to-Know – Hazardous Substances: Rhodium (CAS 7440-16-6)

US Pennsylvania Worker & Community Right-to-Know Law: Rhodium (CAS 7440-16-6)

US Rhode Island Right-to-Know: Not regulated

Section 16- OTHER INFORMATION

The above information is accurate to the best of our knowledge. However, since data, safety standards and government regulations are subject to change, the conditions of handling and use, or misuse are beyond our control, Plasmaterials, Inc. makes no warranty, either expressed or implied, with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon. Users should satisfy themselves that they have all current data relevant to their particular use.

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