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SAFETY DATA SHEET

Section 1- IDENTIFICATION

COMPOSITION Re		PRODUCT NAME Rhenium
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

Classification:

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

HAZARD STATEMENTS

-Not a hazardous substance or mixture

PRECAUTIONARY STATEMENTS

Prevention:

- P264: Wash skin thoroughly after handling
- P270: Do not eat, drink or smoke when using this product
- P420: Store away from incompatible materials
- P501: Dispose of contents/container to an approved waste disposal plant

HAZARDS NOT OTHERWISE CLASSIFIED (HNOC):

-None identified.

Section 3- COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	CAS-No	Molecular Weight
Rhenium	7440-15-5	186.21 g/mol

Section 4- FIRST AID MEASURES

General Advice: Consult a physician. Show this safety data sheet to the doctor in attendance.

Inhalation: Remove victim from exposure to fresh air. Give oxygen if breathing is difficult. If not breathing, give artificial respiration. Consult a physician if symptoms persist.

Skin Contact: Wash off with soap and plenty of water while removing all contaminated clothes and shoes. Consult a physician. Generally, does not irritate the skin.

Eye Contact: As a precaution, flush eyes with lukewarm water, lifting upper and lower lids, for at least 15 minutes. Consult a physician if symptoms persist.

Ingestion: Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Consult a physician if symptoms persist.

Most Important Symptoms/Effects: The most important known symptoms and effects are described in the labeling (see section 2) and/or in section 11.

Indication of any Immediate Medical Attention and Special Treatment Needed: No data available

Section 5- FIREFIGHTING MEASURES

Suitable Extinguishing Media:

Carbon Dioxide (CO₂); Dry Chemical, Alcohol-Resistant Foam, Special Powder for Metal Fires

Unsuitable Extinguishing Media:

No Information Available

Specific Hazards Arising from the Chemical:

Rhenium Oxide

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.

Further Information:

- Use water spray to cool unopened containers
- Use standard firefighting procedures and consider the hazards of other involved materials.
- No unusual fire or explosion hazards noted.

Section 6- ACCIDENTAL RELEASE MEASURES

Personal Precautions: Ensure adequate ventilation. Avoid dust formation. Avoid breathing dust, vapors, mist or gas.

Environmental Precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains or be released into the environment. See Section 12 for additional ecological information.

Methods for Containment & Clean Up: Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

Section 7- HANDLING AND STORAGE

Handling: Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed.

Storage:

Store in original tightly closed container in a dry and well-ventilated place. Store away from incompatible materials.

Section 8- EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:

Components with Workplace Control Parameters: Contains no substance with occupational exposure limits.

Engineering Measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday.

Personal Protective Equipment:

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

Skin and Body Protection: Handle with 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 thermal protective clothing, when necessary. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory Protection: Respiratory protection is not required. In case of insufficient ventilation, use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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

Section 9- PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid

Color: Grey

Odor: No information available

Odor Threshold: No information available

pH: No information available

Melting Point/Range: 3,180°C / 5,756°F

Boiling Point/Range: 5,627°C-5900°C / 10,161°F-10,652°F

Flash Point: No data available

Evaporation Rate: No information available

Flammability (solid, gas): No data available

Flammability or Exposure Limits:

Upper: No data available

Lower: No data available

Vapor Pressure: No information available

Vapor Density: No information available

Relative Density: 21.04 g/cm³ at 20°C / 68°F

Solubility: No information available

Partition coefficient; n-octanol/water: No information available

Auto Ignition Temperature: No information available

Decomposition Temperature: No information available

Viscosity: No information available

Explosive Properties: No information available

Oxidizing Properties: No information available

Section 10- STABILITY AND REACTIVITY

Reactive Hazard: No data available.

Stability: Stable under recommended storage conditions.

Conditions to Avoid: Contact with incompatible materials

Incompatible Materials: Strong oxidizing agents, strong acids

Hazardous Decomposition Products:

Hazardous decomposition products formed under fire conditions-Rhenium Oxide

Other decomposition products-No information available

Hazardous Reactions: No information available

Section 11- TOXICOLOGICAL INFORMATION

Acute Toxicity:

Inhalation: No information available

Dermal: No information available

Skin Corrosion/Irritation: No information available

Serious eye damage/irritation: Direct contact with eyes may cause temporary irritation

Respiratory or Skin Sensitization: No information available

Carcinogenicity:

-IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen.

-NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen.

-OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen.

-ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen.

Mutagenic Effects: No information available

Reproductive Effects: No information available

Development Effects: No information available

STOT – single exposure: No information available

STOT – repeated exposure: No information available

Aspiration Hazard: No information available

Additional Information: (RTECS: VI0780000): To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

Section 12- ECOLOGICAL INFORMATION

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

Persistence and Degradability: No information available

Bioaccumulation Potential: No information available

Mobility in Soil: No information available

Results of PBT and vPvB assessment: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

Other Adverse Effects: No information available

Section 13- DISPOSAL CONSIDERATIONS

Waste Disposal Methods: Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dispose of contaminated packaging as unused product.

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:

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

SARA 313: 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.

SARA 311/312 Hazards: No SARA Hazards

HMIS (USA):

Health Hazard: 0

Chronic Health Hazard:

Flammability: 0

Physical Hazard: 0

National Fire Protection Association (USA):

Health Hazard: 0

Fire Hazard: 0

Reactivity Hazard: 0

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

SARA Hazard Categories:

Immediate Hazard: No

Delayed Hazard: No

Fire Hazard: No

Pressure Hazard: No

Reactive Hazard: No

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

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

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 RTK – Substance List: Not regulated

US New Jersey RTK-Substances: Not regulated

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

US Pennsylvania RTK – Hazardous Substances: Not regulated

US Pennsylvania Worker & Community Right-to-Know Law: Not regulated

US Rhode Island RTK: 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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