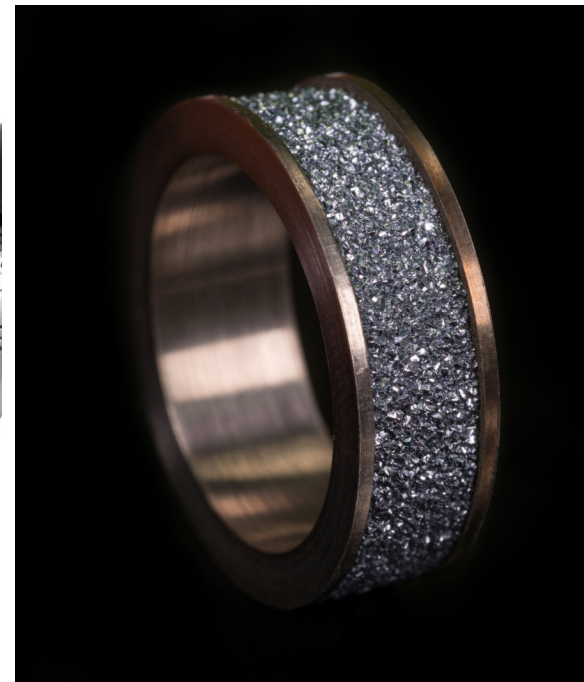




OSMIUM

The Metal We Don't Talk About

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A bit of history...



Is Osmium a Precious Metal?




“A precious metal is a rare, naturally occurring metallic chemical element of high economic value”.

pre·cious met·als
[precious metals] 

NOUN
precious metal (noun)

gold, silver, and platinum.
synonyms: riches · valuables · jewels · gems · gold · silver · precious metals · money · cash · wealth · fortune · treasure trove

[See more translations](#)



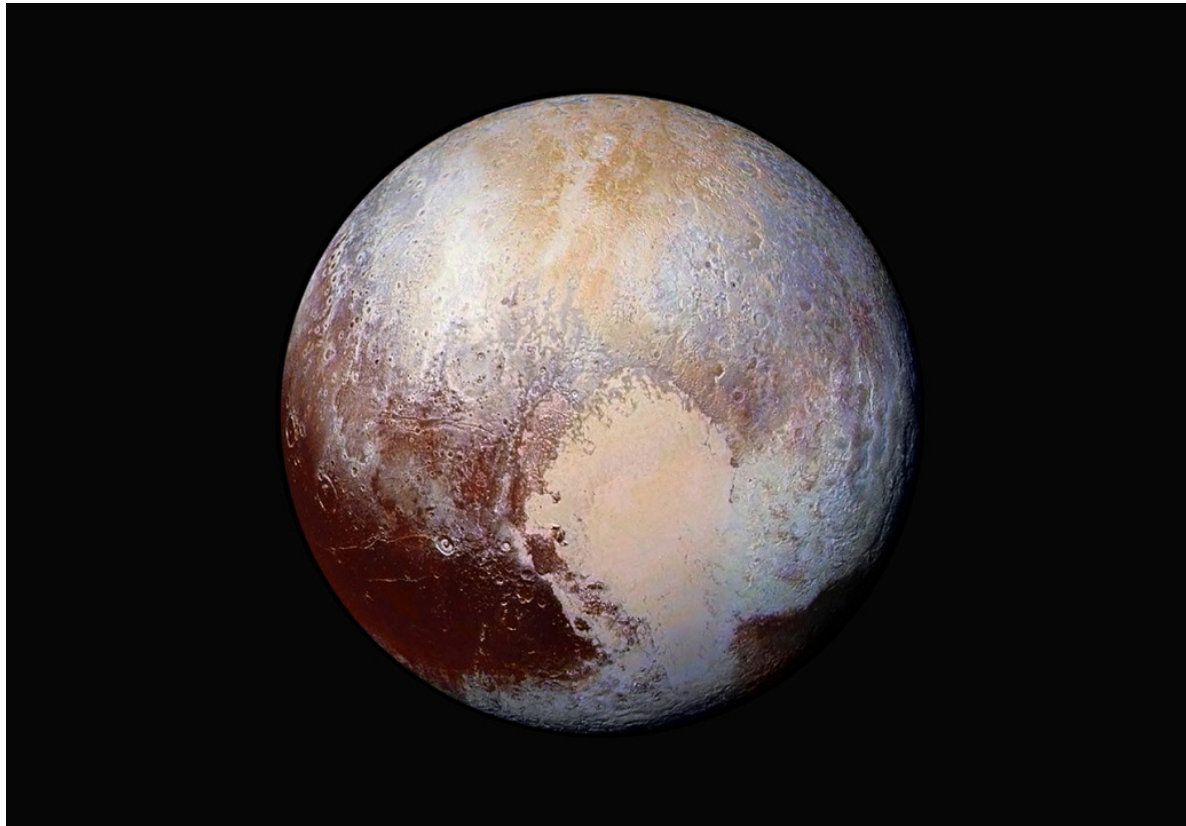
[Feedback](#)

Or is it a Noble Metal?



“In chemistry, the noble metals are metals that are resistant to corrosion and oxidation in moist air (unlike most base metals). The short list of chemically noble metals (those elements upon which almost all chemists agree) comprises ruthenium (Ru), rhodium (Rh), palladium (Pd), silver (Ag), osmium (Os), iridium (Ir), platinum (Pt), and gold (Au).”

Or is it the Pluto of the metals world?





Osmium

Bestell-Nr. List-No. Verkaufsstelle Department	Name Name Formel Formula	Molmasse Molar mass	Edelmetall- gehalt in % Content of precious metal in %	Faktor Factor
2581 0100	Osmium-Pulver Osmium powder Os	190,2	99,9	1,001
2581 0295	Osmium-Mohr Osmium Black Os	—	95	1,05
2582 0343	Ammoniumhexachlorosmat(IV) Ammonium Hexachlorosmate(IV) (NH ₄) ₂ [OsCl ₆]	439,0	43	2,34
2582 0438	Hexachlorosmium(IV)-säure-6-hydrat Hexachlorosmic(IV) Acid 6-Hydrate H ₂ [OsCl ₆] · 6H ₂ O	513,0	38	2,63
2582 0539	Kaliumhexachlorosmat(IV) Potassium Hexachlorosmate(IV) K ₂ [OsCl ₆]	481,1	39	2,56
2582 0662	Kaliumtetraoxosmat(VI)-2-hydrat Potassium Tetraoxosmate(VI) 2-Hydrate K ₂ [OsO ₄] · 2H ₂ O	368,4	52	1,92
2582 0760	Osmium(III)-chlorid Osmium(III) Chloride OsCl ₃	296,6	60	1,67
2582 0875	Osmium(VIII)-oxid Osmium(VIII) Oxide OsO ₄	254,2	75	1,33
2585 0910	Hexachlorosmium(IV)-saure-Lösung Solution of Hexachlorosmic(IV) Acid H ₂ [OsCl ₆]	404,9	bis 10	ab 10

25

The Toxicity Curse

MATERIAL SAFETY DATA SHEET

PRODUCT NAME : OSMIUM

1. HEALTH HAZARD INFORMATION

Effects of exposure Osmium is considered poisonous and should be handled with caution. Effects include ocular disturbances, respiratory difficulties, heavy metal poisoning.

ACUTE EFFECTS:

Inhalation Irritating to mucous membranes and upper respiratory tract. May cause asthmatic condition, bronchitis.

Ingestion May cause gastrointestinal irritation. No other effects known.

Skin Causes irritation, dermatitis, ulceration of the skin.

Eye Causes severe eye irritation, ocular disturbances, conjunctivitis. May cause blindness.

CHRONIC EFFECTS:

Inhalation Bronchitis.

Ingestion Not known.

Skin Dermatitis.

Eye May cause blindness.

OTHER HEALTH HAZARDS:

Adverse health effects are due mainly to OsO₄.

MOST LIKELY ROUTES OF ENTRY:

Ingestion.

TARGET ORGANS:

May cause kidney damage, route of overexposure not known.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

None known.

CARCINOGENICITY:

NTP No IARC No OSHA No EPA No

Scarcity



Facts

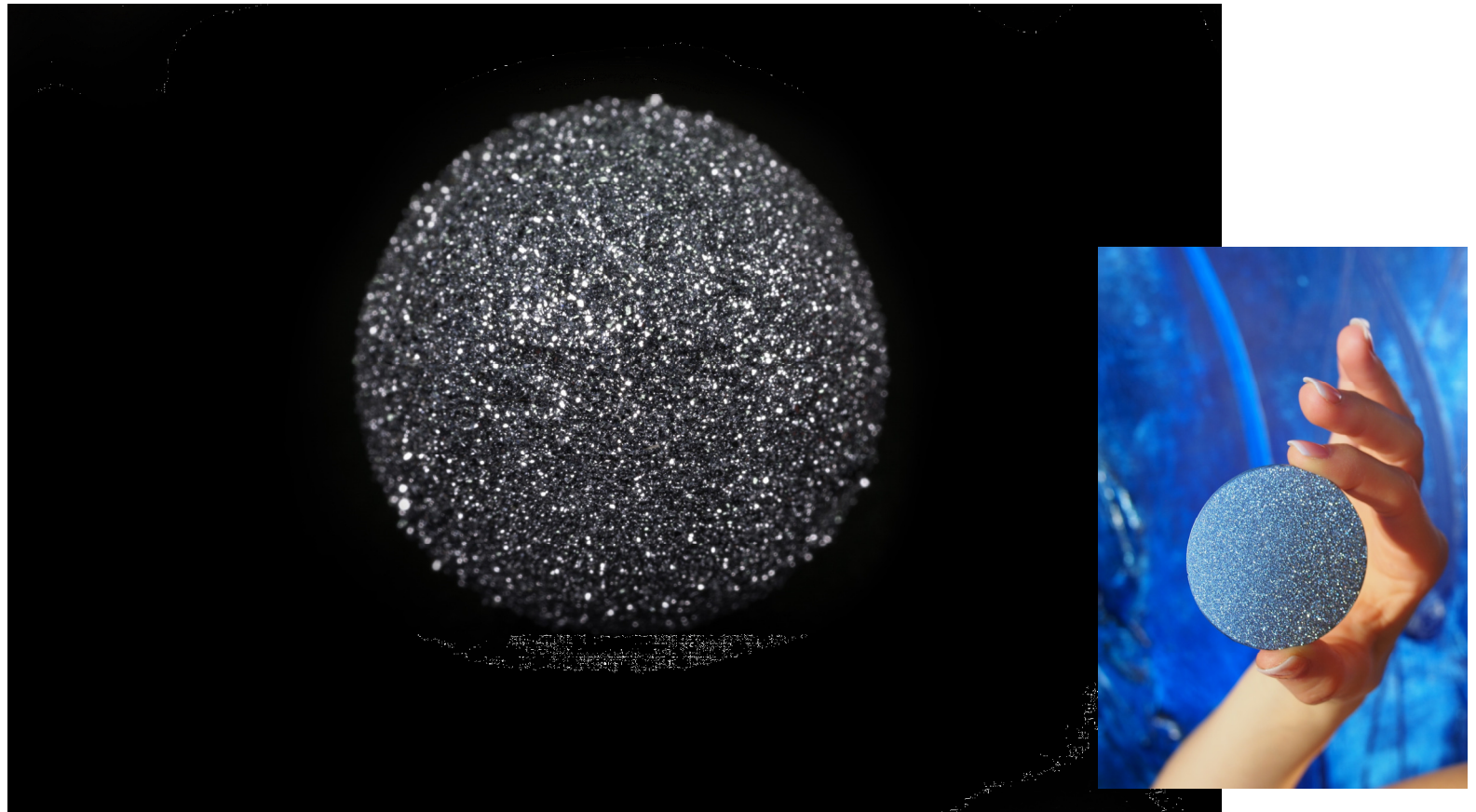
- 10,000 tons of Pt ore yield 1 ounce of Os
- Also co-mined with Ni and Cu
- Supply: ~ 300kg / year
- Price: around US\$ 400 / ozt
- Highest density of all elements
- Very hard, and very conductive



Traditional Uses



Crystallized Osmium



New Applications



Osmium – An Investment Metal?





Osmium –
Let's talk about it.

