



Titanium hydride Grade U

Article Number 454014

CAS-No. 7704-98-5

Typical Formula: TiH_2
Properties Form and Color: powder, grey to black
Melting Point: decomposition above 400°C

Applications Titanium hydride powders find application in both pyrotechnic and metallurgical areas. They are utilized in initiator squibs and igniters. They are also used as getters in the manufacture of vacuum tubes, as brazing aids in sealing ceramics to metals, the introduction of titanium to alloys; as reservoir for pure hydrogen; as hydrogen source for foaming metals; as a deoxidizing agent and for the absorption of carbon in powder metallurgy; for the production of Ti alloys and semi-finished sintered articles; as a constituent in AlNiCo and TiCoNiAl sintered magnets; used for increasing the coercivity of FeNiCoAlCu magnets.

Characteristics **Highly flammable solid. Dust explosion hazard.**

Stable titanium hydride powder of high purity, yielding hydrogen at elevated temperatures in a reversible reaction; easily pressed and sintered. Like Ti metal, TiH_2 is resistant to most chemical reagents, but is attacked at elevated temperature by oxidizing agents and acids. TiH_2 is attacked by cold hydrofluoric acid solutions.

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Typical Analysis	Ignition Gain	min. 58.4 %
	Ti _{total}	min. 95 %
	Hydrogen	min. 3.8 %
	Nitrogen	max. 0.4 %
	Fe	max. 0.09 %
	Cl	max. 0.06 %
	Ni	max. 0.05 %
	Si	max. 0.15 %
	Mg	max. 0.04 %
	C	max. 0.03 %
	Specific surface BET	n/a
	Particle size	min. 99.9 % - 325 mesh
	Average particle size acc. to Blaine	5.0 ± 1.0 µm
	Auto ignition temperature	> 400 °C

Recommended Test Methods Determination of average particle size, particle size distribution, screening analysis, combustion properties, and ignition gain. Gravimetric or colorimetric analysis of titanium and determination of hydrogen.

Handling Safe to handle at room temperature. At elevated temperatures and low pressures the generation of hydrogen must be considered. Risk of dust explosion. In case of fire cover with dry sand or dry chemical/dolomite (powdered limestone). Never extinguish with water, carbon dioxide, or halocarbon.

See our material safety data sheet and special precautionary advice for more information on safety.

Packaging Titanium hydride is packed in polyethylene bags overpacked in tin cans of 2.5 kg, and 15 kg TiH₂ capacity. Other packaging sizes on request.

Transport Classification GGVE, GGVS, RID, ADR: class 4.1, fig. 14 b
IMDG-code: class 4.1 UN-No. 1871, PG. II
ICAO: class 4.1 UN-No. 1871, PG. II/Drill-Code 3 W