

# TECHNICAL DATA SHEET

Date of Issue: 2016/09/02

## Titanium Hydride, Grade N

CAS-No. 7704-98-5

EC-No. 231-726-8

Molecular Formula  $TiH_2$

Product Number 454010

### APPLICATION

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.

### SPECIFICATION

Ignition Gain	min. 58.4 %
Ti total	min. 95 %
Hydrogen	min. 3.8 %
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 % < 63 $\mu m$
Average Particle Size	5.0 +/- 1.0 $\mu m$ (acc. to BLAINE)
Auto Ignition Temperature	> 400 °C

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## METHOD OF ANALYSIS

Determination of average particle size, particle size distribution, combustion properties and ignition gain. Gravimetric analysis of titanium, determination of hydrogen and impurities.

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## PHYSICAL PROPERTIES

Appearance	powder
Color	gray to black
Melting point/ range	> 400 °C (Decomposes before melting.)
Density	3.76 g/cm <sup>3</sup> at 20 °C
Water solubility	< 0.001 g/L at 22 °C (practically insoluble)

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## HANDLING & STORAGE

Handling 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<sub>2</sub> is resistant to most chemical reagents, but is attacked at elevated temperature by oxidizing agents and acids. TiH<sub>2</sub> is attacked by cold hydro fluoric acid solutions.

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

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## TRANSPORT & PACKAGING

UN number 1871

ADR	Class: 4.1	PG: II	Label: 4.1
RID	Class: 4.1	PG: II	Label: 4.1
IMDG	Class: 4.1	PG: II	Label: 4.1
IATA_C	Class: 4.1	PG: II	Packing instruction (cargo aircraft): 448
IATA_P	Class: 4.1	PG: II	Packing instruction (passenger aircraft): 445

Hazard pictograms



Signal Word                      Danger

H&P Phrases                    See Safety Data Sheet

Labelling                        The labelling is according to EU-GHS classification ((EG) 1272/2008) and may vary in other countries. Please refer to the respective Safety Data Sheet for your country.

Packaging

Titanium hydride is packed in polyethylene bags overpacked in tin cans of 2.5 kg and 15 kg TiH<sub>2</sub> capacity. Other packaging sizes on request.

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## OTHER INFORMATION

Further Related                Safety Data Sheet  
Documents

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