TECHNICAL DATA SHEET

Date of Issue: 2021/07/22

Titanium Hydride, Grade T

CAS-No.	7704-98-5
EC-No.	231-726-8
REACH No.	01-2120760622-57-0000
Molecular formula	TiH2
Product number	10001991, 10001992, 10001993, 10001994

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 TiCoNaI sintered magnets; used for increasing the coercivity of FeNiCoAlCu magnets.

SPECIFICATION

Ignition Gain	min. 58.0 %	
Ti total	min. 94.8 %	
Hydrogen	min. 3.8 %	
Mg	max. 0.04 %	
Particle Size	min. 99.9 % < 63 µm	
Average Particle Size	3.5 +/- 0.5 µm	acc. to BLAINE

METHOD OF ANALYSIS

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

PHYSICAL PROPERTIES

Appearance	powder
Colour	grey to black
Melting point/range	> 400 °C (Decomposes before melting.)
Density	3.91 g/cm3 at 20 °C Method: OPPTS 830.7300
Bulk density	2,500 kg/m3
Water solubility	< 0.001 g/l at 22 °C (practically insoluble)
Molecular weight	49.9 g/mol
Additional Physical Properties	decomposition > 400 °C

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, TiH2 is resistent to most chemical reagents, but is attacked at elevated temperature by oxidizing agents and acids. TiH2 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.

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 TiH2 capacity. Other packing sizes on request.

OTHER INFORMATION

Further Related Documents Safety Data Sheet