TECHNICAL DATA SHEET

Date of Issue: 2021/07/22

Zirconium Hydride, Grade F

CAS-No.	7704-99-6
EC-No.	231-727-3
REACH No.	01-2120760629-43-0000
Molecular formula	ZrH2
Product number	10000386, 10001972

APPLICATION

Mixed with oxidizing agents a constituent in compositions for flares, fuzes and combustion charges in pyrotechnics; as a binding or brazing component for grinding agents, carbides, ceramics and metal in abrasive wheels and polishing disks. Applicable as hydrogen source for the foaming of metals.

SPECIFICATION

Zr + Hf	total 95.1 - 96.6 %
Hf	approx. 2 % (natural content)
H	min. 1.4 %
Si	max. 0.6 %
Mg	max. 0.3 %
Ti	max. 0.15 %
Al	max. 0.2 %
Fe	max. 0.1 %
Ca	max. 0.1 %

METHOD OF ANALYSIS

Determination of oxidation value, particle size distribution and average particle size; gravimetric analysis of zirconium, determination of hydrogen content and impurities.

PHYSICAL PROPERTIES

Appearance	powder
Colour	black to grey
Decomposition temperature	> 400 °C (Decomposes before melting.)
Boiling point/boiling range	(Decomposes below the boiling point.)
Density	5.6 g/cm3 at 25 °C (Information taken from reference works and the literature.)
Bulk density	1,000 - 2,000 kg/m3
Water solubility	< 0.00008 g/l at 23 °C Method: OECD Test Guideline 29
Molecular weight	93.24 g/mol
Grain Size	min. 99.9 % < 45 µm by sieving, APS 2.3 +/- 0.5 µm acc. to Blaine
Additional Physical Properties	Combustion Rate: 350 +/- 60 sec/50 cm (Albemarle standard) Gain on Ignition: 29.5 +/- 1.0 % (weight increase by combustion)

HANDLING & STORAGE

Handling	Highly flammable solid. Dust explosion hazard. A stable hydride powder which burns at red heat; less ignitable than a comparable zirconium powder. Keep away from flames, sparks and heat sources; use ground-connected metallic apparatus to avoid sudden ignition by electrostatic discharge; wear gloves, a face shield or goggles; in case of fire, cover only with sand, limestone or with a dry extinguishing powder suitable for metal fires class D; DO NOT USE WATER! Refer to our safety data sheet and special precautionary advice for specific safety information!

TRANSPORT & PACKAGING

UN number 1437

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

Dry, in tin cans of max. 5 kg capacity.

OTHER INFORMATION

Further Related Documents Safety Data Sheet