

TECHNICAL DATA SHEET

Date of Issue: 2021/07/22

Zirconium Hydride, Grade PS

CAS-No.	7704-99-6
EC-No.	231-727-3
REACH No.	01-2120760629-43-0000
Molecular formula	ZrH ₂
Product number	10001978

APPLICATION

As a binding component between grinding agents, carbides, ceramics and metal; as an alloying constituent in powder metallurgy. Applicable as hydrogen source for the foaming of metals.

SPECIFICATION

Zr + Hf	min. 93.0 %
Hf	min. 0.20 - 2.50 %
	(natural content)
H	min. 1.5 %
Fe	max. 0.1 %
Si	max. 0.10 %
Cr	max. 0.05 %
C	max. 0.05 %
S	max. 0.005 %
Ca	max. 0.01 %

The information presented herein is believed to be accurate and reliable, but is presented without guarantee or responsibility on the part of Albemarle Corporation and its subsidiaries and affiliates. It is the responsibility of the user to comply with all applicable laws and regulations and to provide for a safe workplace. The user should consider any health or safety hazards or information contained herein only as a guide, and should take those precautions which are necessary or prudent to instruct employees and to develop work practice procedures in order to promote a safe work environment. Further, nothing contained herein shall be taken as an inducement or recommendation to manufacture or use any of the herein materials or processes in violation of existing or future patent.

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Al	max. 0.03 %
Ni	max. 0.03 %
Cd	max. 0.0005 %
Pb	max. 0.0005 %
Co	max. 0.01 %

METHOD OF ANALYSIS

Determination of 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/cm ³ at 25 °C (Information taken from reference works and the literature.)
Bulk density	1,000 - 2,000 kg/m ³
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 % < 36 µm by sieving APS 2.0 - 3.0 µm acc. to Blaine
Additional Physical Properties	Particle size D50: < or = 6.5 µm Particle size D90: < or = 18 µm Particle size D100: < or = 36 µm

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HANDLING & STORAGE

Handling Highly flammable solid. Dust explosion hazard. A fine zirconium hydride powder of exceptional purity; yielding hydrogen by a reversible reaction in vacuum, slowly burning in air. 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.

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Packaging

dry under Ar, in tins of max. 5 kg capacity

OTHER INFORMATION

Further Related Documents Safety Data Sheet

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