

TECHNICAL DATA SHEET

Date of Issue: 2025/01/06

Zirconium Metal powder, Grade ZE, aqueous suspension

CAS-No.	7440-67-7
EC-No.	231-176-9
REACH No.	01-2119490102-49-0004
Molecular formula	Zr
Product number	10000385

APPLICATION

Well suited for the manufacture of transmitter tubes as an ultrapure getter material with extremely low gas formation.

SPECIFICATION

Zr + Hf total	min. 98.8 %
Zr + Hf active	min. 95.2 %
Hf	approx. 2 % (natural content)
Ca total	max. 0.5 %
N	max. 0.5 %
Si	max. 0.2 %
Ti	max. 0.15 %
H	max. 0.15 %
Cl	max. 0.05 %
Ca soluble	max. 0.05 %
C	max. 0.05 %

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 %
Fe	max. 0.03 %
Mg	max. 0.01 %

METHOD OF ANALYSIS

Verification of properties under vacuum of each lot produced. Determination of gain on ignition, particle size distribution and average particle size; spectral analysis of accompanying impurities. Zirconium content will be calculated using the numbers of the gain on ignition analysis.

PHYSICAL PROPERTIES

Appearance	suspension
Color	black to gray
Melting point/range	1,855 °C (Zirconium)
Boiling point/boiling range	3,577 °C (Zirconium)
Density	6.43 g/cm ³ at 20 °C Method: OECD Test Guideline 109 (Zirconium)
Water solubility	(practically insoluble)
Grain Size	min. 99.9 % < 45 µm by sieving APS 4 +/- 1 µm acc. to Blaine
Additional Physical Properties	Ignition Point: 250 +/- 50 °C; Combustion Rate: 33 +/- 17 sec/50 cm (Albemarle standard); Specific Surface (BET): 0.6 +/- 0.2 m ² /g; Gain on Ignition: min. 33.4 % (weight increase by combustion)

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HANDLING & STORAGE

Handling Highly flammable solid. Dust explosion hazard. An extremely pure, high-grade zirconium metal powder with a high metal content, evolving almost no volatile impurities in high vacuum up to 1,200°C. Keep away from flames, sparks and heat sources; use ground-connected metallic apparatus to avoid sudden ignition by electrostatic discharge; self-ignition is possible; vacuum-drying of suspensions not recommended; 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 material safety data sheet and special precautionary advice for specific safety information.

TRANSPORT & PACKAGING

UN number 1358

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

In PE bottles max. Zr content 2.5 kg, water content min. 30 %.

OTHER INFORMATION

Further Related Documents Safety Data Sheet

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