

TECHNICAL DATA SHEET

Date of Issue: 2016/09/02

Zirconium Metal powder, Grade ZE, aqueous suspension

CAS-No. 7440-67-7

EC-No. 231-176-9

Molecular Formula Zr

Product Number 453131

APPLICATION

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

FURTHER INGREDIENTS

Hafnium

CAS-No. 7440-58-6

EC-No. 231-166-4

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 %

Al max. 0.03 %

Fe max. 0.03 %

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Mg	max. 0.01 %
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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	1,852 °C (Zirconium powder)
Boiling point/boiling range	3,577 °C
Density	6.5 g/cm ³ at 20 °C
Bulk density	1,200 - 2,300 kg/m ³
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: 23 +/- 7 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)

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.
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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.

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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