

# TECHNICAL DATA SHEET

Date of Issue: 2019/02/19

## Zirconium Metal powder, Grade GA, aqueous suspension

CAS-No.	7440-67-7
EC-No.	231-176-9
REACH No.	01-2119490102-49
Molecular Formula	Zr
Product Number	453111

### APPLICATION

In vacuum technology as a getter material; in powder metallurgy as an alloying constituent; in pyrotechnics for the manufacture of high energy igniters, fuses and thermal batteries.

### FURTHER INGREDIENTS

Hafnium	
CAS-No.	7440-58-6
EC-No.	231-166-4

### SPECIFICATION

Zr + Hf	min. 98.8 %
Hf	approx. 2 % (natural content)
Si	max. 0.3 %
H	max. 0.25 %
Mg	max. 0.2 %
Ca total	max. 0.3 %
Fe	max. 0.08 %
Al	max. 0.3 %
Cl	max. 0.05 %
Ca soluble	max. 0.03 %

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.

Technical data sheets may change frequently. You can download the latest version from our website [www.albemarle-lithium.com](http://www.albemarle-lithium.com). Please contact us at [www.albemarle-lithium.com/contact](http://www.albemarle-lithium.com/contact) with questions.

## METHOD OF ANALYSIS

Determination of oxidation value, particle size distribution, average particle size; specific surface area and combustion properties; gravimetric analysis of zirconium, verification of nitrogen content and accompanying impurities by special analytical methods. For specific information on Rockwood Lithium standard determination methods see our delivery program.

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## PHYSICAL PROPERTIES

Appearance	suspension
Color	black to gray
Melting point/ range	1,852 °C (Zirconium powder)
Boiling point/boiling range	3,577 °C (Zirconium)
Density	6.5 g/cm <sup>3</sup> at 20 °C
Water solubility	(practically insoluble)
Grain Size	min. 99.9 % < 45 µm by sieving APS 4.4 - 6.5 µm acc. to Blaine
Additional Physical Properties	Ignition Point: 215 - 265 °C Combustion Rate: 50 - 90 sec/50 cm (Albemarle standard) Gain on Ignition: min. 33.5 % (weight increase by combustion)

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## HANDLING & STORAGE

Handling	Highly flammable solid. Dust explosion hazard.  A zirconium powder with maximum metal content, which burns at white heat. Compared with its relative coarse particle size it burns very fast.  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;  <b>DO NOT USE WATER!</b>  Refer to our 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&amp;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

Aqueous suspension in PE-bottles with max. 2.5 kg capacity, water content min. 30 %.

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**OTHER INFORMATION**

Further Related Documents

Safety Data Sheet

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