

TECHNICAL DATA SHEET

Date of Issue: 2016/09/02

Zirconium Metal powder, Grade ZM, suspended in isopropyl alcohol

CAS-No.	7440-67-7
EC-No.	231-176-9
Molecular Formula	Zr
Product Number	453056

APPLICATION

For the manufacture of non-sedimenting getter suspensions in lamps and vacuum tubes; as an igniter paste for the production of flash cubes; for the production of highly reactive and quick fuze compositions in pyrotechnics for use in ammunition, explosives, airbags and pretensioners.

FURTHER INGREDIENTS

Propan-2-ol

CAS-No.	67-63-0
EC-No.	200-661-7

Hafnium

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

SPECIFICATION

(Zr + Hf)total	97.3 +/- 0.9 %
(Zr + Hf)active	89.4 +/- 3.4 %
Hf	approx. 2 % (natural content)
Mg	max. 0.6 %
Si	max. 0.25 %
H	max. 0.2 %
Fe	max. 0.07 %
Al	max. 0.03 %
Ca	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.

Technical data sheets may change frequently. You can download the latest version from our website www.albemarle-lithium.com. Please contact us at 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.

PHYSICAL PROPERTIES

Appearance	suspension
Color	dark gray
Melting point/ range	1,852 °C (Zirconium powder)
Flash point	ca. 13 °C ([CAS: 67-63-0])
Boiling point/boiling range	82 °C ([CAS: 67-63-0])
Density	6.5 g/cm ³ at 20 °C (Zirconium powder) 0.78 g/cm ³ at 20 °C Method: DIN 51757 ([CAS: 67-63-0])
Bulk density	1,200 - 2,300 kg/m ³ (Zirconium powder)
Water solubility	(completely miscible) ([CAS: 67-63-0]) (practically insoluble) (Zirconium powder)
Grain Size	min. 99.9 % < 45 µm by sieving APS 2.5 +/- 0.5 µm acc. to Blaine
Additional Physical Properties	Ignition Point: 190 +/- 30 °C Combustion Rate: 20 +/- 10 sec/50 cm (Albemarle standard) Gain on Ignition: 31.4 +/- 1.2 % (weight increase by combustion)

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HANDLING & STORAGE

Handling Highly flammable solid. Dust explosion hazard.

A fine zirconium metal powder, easily ignitable and rapidly burning off at white heat.

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 safety data sheet and special precautionary advice for specific safety information!

TRANSPORT & PACKAGING

UN number 1308

ADR	Class: 3	PG: II	Label: 3
RID	Class: 3	PG: II	Label: 3
IMDG	Class: 3	PG: II	Label: 3
IATA_C	Class: 3	PG: II	Packing instruction (cargo aircraft): 364
IATA_P	Class: 3	PG: II	Packing instruction (passenger aircraft): 353

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

Zirconium metal powder is shipped under min. 30 % weight isopropyl alcohol. Standard packaging size: 2.5 kg net weight, other sizes on request.

OTHER INFORMATION

Further Related
Documents

Safety Data Sheet

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