## TECHNICAL DATA SHEET

Date of Issue: 2016/09/02

# Zirconium Metal powder, Grade FA, dry

CAS-No. 7440-67-7

EC-No. 231-176-9

Molecular Formula Zr

Product Number 453030

APPLICATION Used in numerous igniter and burning compositions for pyrotechnics.

#### **FURTHER INGREDIENTS**

Hafnium

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

## **SPECIFICATION**

Zr total + Hf total	95.2 +/- 1.4 %		
Zr metallic + Hf metallic	81.5 +/- 5.4 %		
Hf	approx. 2 % (natural content)		
Mg	max. 0.3 %		
Si	max. 3 %		
Н	0.3 +/- 0.05 %		
Fe	max. 0.08 %		
Al	max. 0.2 %		
Ti	max. 0.15 %		
Ca	max. 0.05 %		

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## 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 powder

Color dark gray

Melting point/ range 1,852 °C

Boiling point/boiling

range

3,577 °C

Density 6.5 g/cm3 at 20 °C

Bulk density 1,200 - 2,300 kg/m3

Water solubility (practically insoluble)

Grain Size min.  $99.9 \% < 45 \mu m$  by sieving

APS 2.3 +/- 0.5 µm acc. to Blaine

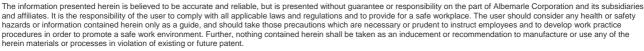
Additional Physical

**Properties** 

Ignition Point: 200 +/- 30 °C

Combustion Rate: 65 +/- 20 sec/50 cm (Albemarle standard)

Gain on Ignition: 28.6 +/- 1.9 % (weight increase by combustion)





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#### HANDLING & STORAGE

Handling

Highly flammable solid. Dust explosion hazard.

A fine zirconium metal powder with a high specific surface area, easily ignitable and burning off at moderate speed with intense red 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 2008

ADR	Class: 4.2	PG: I	Label: 4.2
RID	Class: 4.2	PG: I	Label: 4.2
IMDG	Class: 4.2	PG: I	Label: 4.2
IATA_C	Class: 4.2		
IATA_P	Class: 4.2		

## 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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Zirconium Metal powder, Grade FA, dry

Page 4 / 4

Product Number: 453030 Date of Issue: 2016/09/02

Packaging

Dry in tin cans of max. 5 kg capacity.

## OTHER INFORMATION

Further Related Documents

Safety Data Sheet

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