TECHNICAL DATA SHEET
Date of Issue: 2016/09/02

Zirconium Metal powder, Grade CX, aqueous suspension

CAS-No. 7440-67-7
EC-No. 231-176-9
Molecular Formula Zr
Product Number 453021

APPLICATION
For the production of highly reactive and quick fuze compositions in pyrotechnics for use in ammunition, explosives, airbags and safety belt pretensioners; for the manufacture of photographic flash cubes.

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

SPECIFICATION

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<th>Component</th>
<th>Specification</th>
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<tbody>
<tr>
<td>Zr total + Hf total</td>
<td>97.5 +/- 0.9 %</td>
</tr>
<tr>
<td>Zr active + Hf active</td>
<td>90.2 +/- 3.6 %</td>
</tr>
<tr>
<td>Hf</td>
<td>approx. 2 % (natural content)</td>
</tr>
<tr>
<td>H</td>
<td>max. 0.2 %</td>
</tr>
<tr>
<td>Fe</td>
<td>max. 0.07 %</td>
</tr>
<tr>
<td>Ca</td>
<td>max. 0.05 %</td>
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</table>

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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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.
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/cm³ at 20 °C
Bulk density: 1,200 - 2,300 kg/m³
Water solubility: (practically insoluble)
Grain Size: min. 99.9 % < 45 µm by sieving
        APS 1.7 +/- 0.5 µm acc. to Blaine

Additional Physical Properties: Auto ignition temperature: 180 °C +- 30 °C, Burning rate: 5.5 s/50 cm +-2.5 s/50 cm

HANDLING & STORAGE

Handling: Highly flammable solid. Dust explosion hazard.

An ultra-fine, high grade zirconium powder which ignites very easily and rapidly burns off at white heat. Highly ignitable product with very short combustion rate. Most ignitable product among the metal powder grades.

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 1358

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<td>PG: II</td>
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<tr>
<td>IATA_P</td>
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<td>PG: II</td>
<td>Packing instruction (passenger aircraft): 445</td>
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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 Aqueous suspension in PE–bottles with max. 2.5 kg capacity, water content min. 30 %.

**OTHER INFORMATION**

Further Related Documents Safety Data Sheet