TECHNICAL DATA SHEET

Date of Issue: 2016/09/02

Zirconium Nickel alloy 70/30 A

Molecular Formula ZrNi

Product Number 453430

APPLICATION Zirconium/Nickel alloy powders find application in various pyrotechnic and

ordnance areas. They are used in squibs, delay mixtures and initiators.

FURTHER INGREDIENTS

Nickel powder

CAS-No. 7440-02-0 EC-No. 231-111-4 Zirconium powder (non pyrophoric) CAS-No. 7440-67-7 EC-No. 231-176-9 Hafnium

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

SPECIFICATION

| Auto Ignition Temperature | > 225 °C | |
|---------------------------|----------------------|--|
| Combustion Rate | 200 +/- 75 sec/50 cm | |
| Particle Size | min. 99.9 % < 45 μm | |
| Average Particle Size | 4 +/- 2 μm | |
| Zr + Hf content | 70 +/- 3 % | |
| Ni content | 30 +/- 3 % | |
| (Zr + Hf) + Ni content | > 97 % | |
| Fe | max. 0.20 % | |
| Ca | max. 0.15 % | |
| Al | max. 0.15 % | |
| S | max. 0.04 % | |

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.



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Moisture max. 0.2 %

MIL-Specification

Zirconium/Nickel alloy powder 70/30, type A is manufactured to meet the US government specification MIL-Z-11410, Type I.

Exceptions: Type A is not dichromated; Sulphur content is 0.04% instead of 0.01%.

METHOD OF ANALYSIS

Gravimetric determination of zirconium and nickel. Spectral analysis of accompanying impurities. Measurement of average particle size and combustion properties.

PHYSICAL PROPERTIES

Appearance powder

Color gray black

Melting point/ range 1,140 - 1,650 °C

Bulk density 2,000 - 3,000 kg/m3

Water solubility (practically insoluble)

HANDLING & STORAGE

Highly flammable solid. Dust explosion hazard. Handling

> Powders of these alloys are highly flammable and burn with intense heat. By appropriate mixing of types A and B which are comparable in their composition but quite different in regard to their combustion properties it is possible to adjust defined

combustion rates. Mixtures are available upon request.

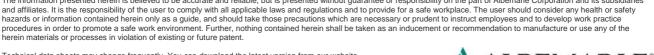
Keep away from flames, sparks and heat sources. Use ground connected metallic apparatus to avoid sudden ignition by electrostatic discharge. In case of fire cover with dry sand or dry chemical/dolomite (powdered limestone). Never extinguish with

water, carbon dioxide, or halocarbon.

See our safety data sheet and special precautionary advice for more information on

safety.

Storage Store in tightly closed containers.



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TRANSPORT & PACKAGING

UN number 3089

| 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.

OTHER INFORMATION

Further Related Documents

Safety Data Sheet

