

MIL-Z-399D
Amendment 1
5 April 1973

MILITARY SPECIFICATION

ZIRCONIUM (GRANULAR AND POWDERED)

This amendment forms a part of Military Specification MIL-Z-399D dated 1 October 1971, and is mandatory for use by all Departments and Agencies of the Department of Defense.

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Table II. Add an additional class as follows:

| | <u>Class 4</u> |
|---------------------------------------------------------------------|-----------------------------------------------|
| Thru No. 120 sieve (125 microns), percent by weight | 100 |
| Thru No. 200 sieve (74 microns), percent by weight | 99 min. |
| Thru Buckbee Mears No. 26 sieve, (20 microns), percent by weight | 96 min. |
| <u>Subsieve</u> | |
| Less than 9 microns; percent by weight | 85 min. |
| 3 microns, percent by weight | 33-100 |
| 0.75 microns, percent by weight | 20 max. |
| Average particle size, microns | |
| Surface area (B.E.T.) | 1.10-1.60 square meters per gram (see 6.6) |

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Delete Table III and insert the following:

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Table III. Chemical Requirements

| Requirement | Type II | | | | Test par. |
|---------------------------------|---------|-----------|-----------|-----------|--------------------|
| | Type I | Class 1 | Class 2 | Class 3 | |
| Total zirconium, percent min. | 96.0 | 94.0 | 95.0 | 95.0 | 4.3.5 |
| Calcium, percent, max. | 0.05 | 0.10 | 0.05 | 0.05 | 4.3.6 { see 6.7 } |
| Iron, percent, max. | 0.30 | 0.20 | 0.03 | 0.05 | 4.3.7 { see 6.7 } |
| Aluminum, percent, max. | 0.10 | 0.30 | 0.15 | 0.10 | 4.3.8 { see 6.7 } |
| Hydrogen, percent, max. | 0.20 | 0.20 | 0.20 | — | 4.3.9 { see 6.9 } |
| Chloride (as Cl), percent, max. | 0.03 | | | | 4.3.10 |
| Silicon, percent, max. | 0.10 | | | | 4.3.11 { see 6.7 } |
| Tin, percent, max. | 0.75 | | | | 4.3.12 { see 6.7 } |
| Ignition gain, percent | | 30.2-33.0 | 30.2-33.0 | 30.2-33.0 | 4.3.13 |
| | | | | 30.0-33.0 | |

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Add a new paragraph as follows:

"4.3.4. Surface area (B.E.T). This determination shall be performed as described in "Scientific and Industrial Glass Blowing and Laboratory Techniques", Chapter XII, by W. E. Parr and V. J. Anhorn, Instrument Publishing Co., Pittsburgh 12, Pa. (1959)."

Renumber the following paragraphs accordingly.

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Add a new paragraph as follows:

"6.6 The surface area shall be run on zirconium powder manufactured by a new process or purchased from a new manufacturer."

Renumber the following paragraphs accordingly.

Custodians:

Army - MU
Navy - OS
Air Force - 68

Preparing activity:

Army - MU

Project No. 6810-0972

Review activities:

Army - MD, MU
Navy - OS, AS
Air Force - 68

User activities:

Army - MI, SM