



March 19, 2018

The Honorable Timothy R. Petty
Assistant Secretary for Water and Science
United States Department of the Interior
1849 C Street, NW
Washington, DC 20240

RE: Specialty Steel Industry of North America (SSINA) Comments on the Department of the Interior's Draft Critical Minerals List [DOI-2018-0001]

Dear Assistant Secretary Petty:

On behalf of the Specialty Steel Industry of North America (SSINA), we write to commend the administration for its efforts to ensure adequate current and future domestic supplies of minerals deemed vital to our national security and economic prosperity. SSINA is pleased to respond to the Department of the Interior's February 16, 2018 request for comment on its Draft List of Critical Minerals, published pursuant to President Trump's December 20, 2017 Executive Order 13817, "A Federal Strategy to Ensure Secure and Reliable Supplies of Critical Materials."

SSINA is the leading industry trade association representing virtually all the North American producers of specialty metals, including high technology, high value stainless steel and other specialty alloyed products such as titanium and nickel-based superalloys. As is evident from the Department's draft list and "example applications," our industry is heavily reliant upon a variety of mineral commodities for the production of stainless steel and other alloys. The innovative, strategic materials produced by SSINA member companies are vital to the nation's evolving defense industrial base, as well as to other critical sectors of our economy.

Comments on Draft List

SSINA is pleased the Department of the Interior included on its draft list a variety of minerals critical to the production of specialty steel and alloy products. While we realize

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Interior's example applications are meant to be illustrative, we would like to highlight a few additional applications of minerals included on your list to emphasize their importance to the defense industrial base.

Specifically, we have identified the following applications in addition to those listed in the Department's draft:

- Fluorspar is a slag-making constituent for electro-slag remelting (ESR)
- Helium is used in vacuum arc remelting
- Magnesium is used in ESR slag
- Manganese is used in wear-resistant alloys and can be used as substitute for nickel
- Platinum group metals are used in thermocouple wire and chemistry hardware
- Titanium is used in critical alloying additions
- Tungsten is used in cutting tools
- Vanadium is used in cutting and wear-resistant tools

Additionally, SSINA would like to emphasize that chromium – which is critical to the production of stainless steel and superalloys – comes in different grades. Our member companies require both the higher purity metallic versions along with the lower quality iron compounds.

Additional Minerals for Consideration

A “critical mineral” as defined by the Executive Order is: (i) a non-fuel mineral or mineral material essential to the economic and national security of the United States, (ii) the supply chain of which is vulnerable to disruption, and (iii) that serves an essential function in the manufacturing of a product, the absence of which would have significant consequences for the U.S. economy or national security.

Consistent with the definition included in the Executive Order and on which the Department's list is based, SSINA would also like to propose for your consideration the addition of the following minerals/materials:

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- Argon, used to prevent re-oxidation products from forming during steelmaking processes; used in refining process (argon oxygen decarburization – AOD)
- Barium Peroxide, used in the thermite reaction to make all niobium products; some domestic supply, but all starting raw material to make the peroxide comes from China
- Boron, used to improve hot working characteristics of stainless steels; Turkey produces the vast majority of the world’s boron
- Electrolytic Manganese metal, critical to the production of stainless steel; approximately 90 percent of the supply comes from China
- Ferrosilicon, used for alloying and as a reductant in the AOD; major global producers include China and Russia
- Magnesite, used in refractory brick critical to steelmaking; China historically has held almost 80% of the world’s supply and is curtailing exports; other major producers are in Turkey and Brazil
- Silicon, used for alloying and as a reductant in the AOD; major global producers include China and Russia
- Sulfur, imparts free machining characteristics to steels

Additionally, SSINA recognizes the Department’s decision not to include certain mineral commodities that are potential sources for byproduct critical mineral production. We agree that “strategies to increase the domestic supply of these [byproduct] commodities also should consider the mining and processing of the host materials because enhanced recovery of byproducts alone may be insufficient to meet U.S. consumption.”¹ Further, we believe certain of these potential source minerals are also critical in and of themselves and should be reconsidered for inclusion. Specifically:

- Copper, used in many corrosion-resistant and stainless alloys and in defense-related items

¹ Draft Critical Mineral List—Summary of Methodology and Background Information, page 10

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- Molybdenum, used in steel alloys and nickel-based superalloys for a variety of defense and energy purposes; molybdenum comes in different grades and both the higher purity metallic versions along with the lower quality compounds are necessary
- Nickel, used in stainless steel and high strength/high temperature superalloy products

While these minerals are more common globally and the United States currently has production capacity, their importance to military applications and to other critical sectors of our economy (e.g., energy) warrants efforts to prevent future strategic vulnerabilities. With respect to nickel, it should be noted that the United States does not have any domestic processing capabilities.

Thank you for consideration of these comments. SSINA would be happy to answer any questions and / or provide additional background on any items discussed herein.

Sincerely,

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