



April 28, 2021

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Matthew D. Zolnowski  
Office of the Deputy Assistant Secretary  
of Defense for Industrial Policy  
U.S. Department of Defense

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**PUBLIC DOCUMENT**  
DOD-2021-OS-0022-0001

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**Re: Specialty Steel Industry of North America Comments on Executive Order “America’s Supply Chains”**

Dear Mr. Zolnowski:

On behalf of Specialty Steel Industry North America (“SSINA”), we submit the following comments and information in response to the U.S. Department of Defense, Office of the Deputy Assistant Secretary of Defense for Industrial Policy (“DoD”) request for comments concerning President Biden’s Executive Order 14017 (“EO 14017”).<sup>1</sup> These comments are timely submitted pursuant to the deadline established in the Public Comment Notice.

SSINA is the leading industry trade association representing the majority of North American producers of specialty metals – many of which fall within the EO 14017’s definition of critical minerals and other strategic materials.<sup>2</sup> Our members include domestic producers of high performance specialty metals such as nickel alloys, titanium alloys, stainless steels and tool

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<sup>1</sup> See Notice of Request for Comments on Executive Order “America’s Supply Chains”, 86 Fed. Reg. 19,230 (Dep’t of Defense Apr. 13, 2021) (hereinafter, “Public Comment Notice”).

<sup>2</sup> America’s Supply Chains (Executive Order 14017), 86 Fed. Reg. 11,849, 11,850 (Office of the Pres. Mar. 1, 2021) (requesting a report within 100-days concerning the 35 critical minerals identified by the DOI as well as “other identified strategic materials”).

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steels. Due to the unique chemical, mechanical and physical characteristics of these products, SSINA members play an essential role in the United States national security apparatus. Specialty metals (including specialty steel) products are critical components in a wide variety of national defense and other strategic applications, including the production of military aircraft, helicopters, land-based vehicles, military-grade weapons and navy vessels. As a result, our members are key partners in the supply chains for critical minerals and other strategic materials subject to the DoD's 100-day report.

As domestic manufacturers involved in supply chains of critical materials, we applaud the Administration's and DoD's renewed focus on the transparency, resiliency and security of those supply chains. Achieving diverse and secure supply chains requires a balanced approach – one that incentivizes domestic manufacturing and also acknowledges the need for secure, stable, and reliable offshore suppliers for certain upstream input materials that may not be mined or produced in the United States.

SSINA also applauds the Administration's expansion of this report to go beyond the 35 critical minerals identified by the Department of Interior ("DOI") to include – "strategic and critical materials."<sup>3</sup> Inclusion of additional strategic materials within the DoD's report alone will enhance transparency by increasing access to information on supply sourcing as well as identifying gaps and vulnerabilities in the input supply chain. With that in mind, there are certain minerals not included on this list that are extremely important in our members'

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<sup>3</sup> Final List of Critical Minerals 2018, 83 Fed. Reg. 23,295 (Dep't Interior May 18, 2018) ("Final List").

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production operations, and we urge the Administration to incorporate them into DOI's list.

These minerals include:

- Copper, used in many corrosion-resistant and stainless alloys and in defense-related items;
- 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; and
- Nickel, used in stainless steel and high strength/high temperature superalloys products.

The DOI noted that among the comments it received on its draft list of critical minerals, commenters proposed a total of 13 additional minerals that should be added to the list, including seven minerals receiving more than 10 requests -- copper, molybdenum, and nickel among them.<sup>4</sup> These three minerals are critical alloying elements used to produce stainless steel and other specialty metals and therefore should be included among policies meant to spur growth and strengthen the resiliency of the defense industrial base.

DOI, in its original report, did not amend its draft list of critical minerals to include copper, molybdenum, or nickel, but did note that the list “will be dynamic and updated periodically” to reflect market and policy considerations.<sup>5</sup> DOI further “recognize{d} the economic significance and indispensable nature of other minerals that are produced domestically in large quantities” including “copper” and “molybdenum” but did not include them on the list

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<sup>4</sup> Final List, 83 Fed. Reg. at 23,296.

<sup>5</sup> Id.

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given their current levels of domestic production versus import reliance.<sup>6</sup> To the extent DoD's and the Administration's focus has shifted beyond the availability of the minerals themselves, all three minerals should be identified in DoD's report as "critical" given their downstream strategic applications, particularly as those applications relate to the national defense.

Nickel in particular is an extremely important mineral used to produce stainless steel and nickel-based alloys (e.g. superalloys) consumed in many defense-related (including aircraft-engine) applications. Nickel, however, has historically posed supply chain challenges for our members. Nickel is traded as a commodity on the London Metal Exchange, and is often characterized by extreme volatility in its pricing because of its commodity status. The supply chain challenges are further complicated by the fact that different grades and forms of nickel are used in the production of stainless steel and nickel-based alloys, including ferronickel, Class 1 nickel (99% nickel content or greater) or certain nickel-bearing scrap. Policy developments, in both the U.S. and abroad, can also affect this strategically important supply chain.

China is the largest stainless steel producer in the world with no signs of the country reducing its capacity. Due to the importance of nickel in stainless production, China has increased its dominance of the nickel supply chain through both investments in third-countries and also recycling of nickel from stainless steel production and consumption. Indonesia, however, is the world's largest miner of nickel ore and since 2020 has imposed a ban on exports of this input material.

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<sup>6</sup> Id.

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The United States, however, imports little ferronickel from China or Indonesia. As shown in **Attachment 1**, the largest source of U.S. imports of ferronickel is Brazil, with other sources including New Caledonia, and the Dominican Republic. Canada is major producer of Class 1 nickel, and as shown in **Attachment 1** is the largest supplier of unwrought nickel to the United States. As a key ally, major and strategically located trading partner, the U.S. should ensure policies continue to encourage the use of Canadian nickel in U.S. nickel-based alloy production.

In order to protect the integrity of the nickel supply chain, including nickel bearing scrap, and others, the Administration should also consider the implications of sanctions and other policy considerations (e.g. retaliatory tariffs), which may have unintended consequences on material supply chains in both the short and long term. These include sanctions, which may directly or indirectly impact other companies from friendly nations (e.g., Canada) from supplying U.S. specialty metals manufacturers who rely on global supply chains such as nickel.

Like nickel alloys and stainless steels, titanium alloys are a critical component of the defense industrial base, and the U.S. must take a balanced approach in assessing the supply chain for this strategic material and developing rational policies for managing that supply chain. For a variety of reasons, it has proven inefficient and uneconomical in recent years to produce titanium sponge in the United States. Nevertheless, domestic titanium producers have established long-standing, long-term contracts with reliable titanium sponge suppliers in Japan and Kazakhstan which allow them to have a secure supply of this important input. In situations such as these, the government should not consider the imposition of restrictions on imports of the input

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material, particularly if there are no domestic sources available. Rather than encourage domestic manufacturing, import restrictions, such as tariffs, would damage domestic manufacturing by making domestic manufactures of titanium less competitive vis-à-vis their Russian and Chinese competitors.

The government, however, is not without recourse in these situations. If there were perceived to be a supply chain issue on titanium sponge, the most appropriate action would be to create a stockpile of the input materials (e.g. titanium sponge) or alternatively, create a stockpile of the downstream material sourced from U.S. producers. Depending on the material at issue, there may be advantages to stockpiling the input or the downstream material.<sup>7</sup> But in all cases, stockpiling is preferred to tariffs or other import restrictions where there is a history of reliable off-shore sourcing and little possibility of domestic production. In fact, eliminating existing tariffs on inputs such as titanium sponge, where the domestic industry relies exclusively on imports from long-term, reliable, allies for supply, would strengthen the domestic titanium manufacturing base by eliminating one current disadvantage U.S. producers encounter in competing with Russian and Chinese counterparts who generally have duty-free access to input material.

Another key policy for strengthening SSINA members U.S. production operations is the continued use of the Specialty Metals Amendment (“SMA”) and other similar statutes as a key driver of strengthening U.S. manufacturing of value-added products. SSINA encourages DoD

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<sup>7</sup> The U.S. titanium industry is working with the U.S. Department of Commerce-led Titanium Sponge Working Group on this issue and has proposed a framework and composition for a stockpile of titanium sponge and downstream products.

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to use the SMA and other similar statutes to support the domestic industry and ensure the proper application and enforcement of the law where the domestic sourcing of specialty metals is required for defense applications. The SMA has been critical to the competitive advantage the U.S. maintains in the specialty metals sector and has been an important incentive for the research and development that U.S. companies have undertaken in the specialty metals sector.

In sum, when crafting policy related to the supply chain for critical materials, SSINA believes that the Administration must pursue a balanced approach that encourages domestic manufacturing, but which also recognizes the need for rational policy considerations and cooperation with our trading partners where supply chain availability issues arise, particularly at the raw material or input level. The Administration should not hesitate to consult with the industry to ensure that policies are crafted in an optimal matter with no harm to existing domestic manufactures.

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We appreciate the DoD's consideration of these comments. Please do not hesitate to contact the undersigned with any questions regarding this submission.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Laurence J. Lasoff". The signature is written in a cursive style with a horizontal line above the name.

LAURENCE J. LASOFF  
JOSHUA R. MOREY

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Specialty Steel Industry of North America

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# **ATTACHMENT 1**

**U.S. Imports of Nickel Ores and Concentrates, Nickel Content**  
**HTS # 2604.00.0040**  
**Annual 2018 - 2020, January - February 2020 & 2021**

<b>Quantity (component kilograms)</b>					
	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>YTD 2020</b>	<b>YTD 2021</b>
Mexico	-	-	57,878	-	-
China	-	3,920	37,353	4,838	117
Canada	3,237	-	-	-	-
<i>All Others</i>	-	-	-	-	-
<b>Total</b>	<b>3,237</b>	<b>3,920</b>	<b>95,231</b>	<b>4,838</b>	<b>117</b>

<b>Value (Customs, USD)</b>					
	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>YTD 2020</b>	<b>YTD 2021</b>
Mexico	-	-	164,002	-	-
China	-	28,003	156,867	29,990	2,509
Canada	11,180	-	-	-	-
<i>All Others</i>	-	-	-	-	-
<b>Total</b>	<b>11,180</b>	<b>28,003</b>	<b>320,869</b>	<b>29,990</b>	<b>2,509</b>

<b>AUV (\$/component kilograms)</b>					
	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>YTD 2020</b>	<b>YTD 2021</b>
Mexico	-	-	2.83	-	-
China	-	7.14	4.20	6.20	21.44
Canada	3.45	-	-	-	-
<i>All Others</i>	-	-	-	-	-
<b>Total</b>	<b>3.45</b>	<b>7.14</b>	<b>3.37</b>	<b>6.20</b>	<b>21.44</b>

Source: U.S. Department of Commerce and USITC

**U.S. Imports of Ferronickel**  
**HTS # 7202.60.0000**  
**Annual 2018 - 2020, January - February 2020 & 2021**

Quantity (kilograms)					
	2018	2019	2020	YTD 2020	YTD 2021
Brazil	24,825,269	21,960,796	23,138,065	4,091,143	5,155,449
New Caledonia	14,856,240	12,615,480	8,958,950	1,753,680	634,490
Dominican Rep	15,619,961	6,374,373	5,082,585	500,442	-
North Macedonia	4,146,283	-	3,552,370	-	-
Guatemala	9,402,061	2,312,585	1,005,950	-	-
Colombia	2,485,779	248,994	218,250	-	159,569
Thailand	-	-	112,528	-	-
China	1,693,208	30,107	6,875	-	-
United Kingdom	98,476	49,021	1,650	-	-
Italy	83,741	-	1,079	245	-
Netherlands	-	439,450	-	-	-
Australia	123,942	133,375	-	-	-
France	424,550	-	-	-	-
Russia	-	296,599	-	-	-
South Africa	211,900	3,000	-	-	60,045
<i>All Others</i>	-	-	-	-	-
<b>Total</b>	<b>73,971,410</b>	<b>44,463,780</b>	<b>42,078,302</b>	<b>6,345,510</b>	<b>6,009,553</b>

Value (Customs, USD)					
	2018	2019	2020	YTD 2020	YTD 2021
Brazil	94,108,312	74,971,037	79,844,470	14,485,952	21,030,443
New Caledonia	50,326,416	38,793,623	25,563,545	4,867,993	2,420,561
Dominican Rep	77,257,952	26,108,437	23,389,793	2,665,715	-
North Macedonia	12,819,078	-	12,185,684	-	-
Guatemala	43,026,218	8,690,411	3,631,231	-	-
Colombia	10,659,578	870,931	559,535	-	763,785
Thailand	-	-	162,135	-	-
China	6,236,691	79,571	7,352	-	-
United Kingdom	619,458	308,372	60,374	-	-
Italy	526,777	-	17,735	7,094	-
Netherlands	-	1,411,353	-	-	-
Australia	1,098,400	713,960	-	-	-
France	1,396,055	-	-	-	-
Russia	-	803,094	-	-	-
South Africa	709,642	61,720	-	-	909,333
<i>All Others</i>	-	-	-	-	-
<b>Total</b>	<b>298,784,577</b>	<b>152,812,509</b>	<b>145,421,854</b>	<b>22,026,754</b>	<b>25,124,122</b>

AUV (\$/kg)					
	2018	2019	2020	YTD 2020	YTD 2021
Brazil	3.79	3.41	3.45	3.54	4.08
New Caledonia	3.39	3.08	2.85	2.78	3.81
Dominican Rep	4.95	4.10	4.60	5.33	-
North Macedonia	3.09	-	3.43	-	-
Guatemala	4.58	3.76	3.61	-	-
Colombia	4.29	3.50	2.56	-	4.79
Thailand	-	-	1.44	-	-
China	3.68	2.64	1.07	-	-
United Kingdom	6.29	6.29	36.59	-	-
Italy	6.29	-	16.44	28.96	-
Netherlands	-	3.21	-	-	-
Australia	8.86	5.35	-	-	-
France	3.29	-	-	-	-
Russia	-	2.71	-	-	-
South Africa	3.35	20.57	-	-	15.14
<i>All Others</i>	-	-	-	-	-
<b>Total</b>	<b>4.04</b>	<b>3.44</b>	<b>3.46</b>	<b>3.47</b>	<b>4.18</b>

Source: U.S. Department of Commerce and USITC

**U.S. Imports of Unwrought Nickel, Not Alloyed**  
**HTS # 7502.10.0000**  
**Annual 2018 - 2020, January - February 2020 & 2021**

<b>Quantity (kilograms)</b>					
	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>YTD 2020</b>	<b>YTD 2021</b>
Canada	48,439,041	51,646,566	54,933,880	9,532,539	8,908,650
Norway	13,808,933	8,604,773	9,201,916	1,763,182	1,144,961
Finland	10,347,592	12,268,628	7,791,407	114,983	299,012
Russia	9,283,405	10,718,240	6,001,251	1,495,376	1,863,402
Australia	18,223,477	6,346,947	4,707,345	1,163,760	883,058
South Africa	4,821,235	2,118,670	1,935,806	414,119	975,257
United Kingdom	460,592	1,787,309	1,491,600	836,418	144,000
Japan	3,611,893	3,002,000	1,413,600	492,000	94,000
Italy	-	18,000	23,065	-	-
Germany	3	-	20,040	20,040	-
Dominican Rep	-	-	20,000	-	-
Sweden	-	2	-	-	-
China	300,031	-	-	-	-
Madagascar	1,860,593	888,929	-	-	-
Brazil	114,800	-	-	-	-
<i>All Others</i>	<i>905,249</i>	<i>489</i>	<i>-</i>	<i>-</i>	<i>-</i>
<b>Total</b>	<b>112,176,844</b>	<b>97,400,553</b>	<b>87,539,910</b>	<b>15,832,417</b>	<b>14,312,340</b>

<b>Value (Customs, USD)</b>					
	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>YTD 2020</b>	<b>YTD 2021</b>
Canada	646,976,943	725,975,490	760,291,794	135,729,932	158,676,165
Norway	183,373,351	114,663,466	124,224,150	25,022,785	18,271,403
Finland	133,545,828	165,059,460	101,441,731	1,599,211	5,155,628
Russia	123,213,960	149,800,672	79,362,630	20,290,942	32,894,586
Australia	240,404,111	86,191,169	61,519,399	15,592,933	18,501,209
South Africa	65,296,036	29,581,789	26,670,568	5,895,071	15,948,080
United Kingdom	7,154,199	23,145,672	21,259,873	11,744,055	2,536,118
Japan	47,814,701	40,445,081	19,818,404	7,535,615	1,410,642
Italy	-	323,694	402,318	-	-
Germany	7,375	-	259,753	259,753	-
Dominican Rep	-	-	320,000	-	-
Sweden	-	2,603	-	-	-
China	4,045,905	-	-	-	-
Madagascar	24,070,688	11,239,696	-	-	-
Brazil	1,278,594	-	-	-	-
<i>All Others</i>	<i>11,638,887</i>	<i>5,788</i>	<i>-</i>	<i>-</i>	<i>-</i>
<b>Total</b>	<b>1,488,820,578</b>	<b>1,346,434,580</b>	<b>1,195,570,620</b>	<b>223,670,297</b>	<b>253,393,831</b>

<b>AUV (\$/kg)</b>					
	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>YTD 2020</b>	<b>YTD 2021</b>
Canada	13.36	14.06	13.84	14.24	17.81
Norway	13.28	13.33	13.50	14.19	15.96
Finland	12.91	13.45	13.02	13.91	17.24
Russia	13.27	13.98	13.22	13.57	17.65
Australia	13.19	13.58	13.07	13.40	20.95
South Africa	13.54	13.96	13.78	14.24	16.35
United Kingdom	15.53	12.95	14.25	14.04	17.61
Japan	13.24	13.47	14.02	15.32	15.01
Italy	-	17.98	17.44	-	-
Germany	2,458.33	-	12.96	12.96	-
Dominican Rep	-	-	16.00	-	-
Sweden	-	1,301.50	-	-	-
China	13.48	-	-	-	-
Madagascar	12.94	12.64	-	-	-
Brazil	11.14	-	-	-	-
<i>All Others</i>	<i>12.86</i>	<i>11.84</i>	<i>-</i>	<i>-</i>	<i>-</i>
<b>Total</b>	<b>13.27</b>	<b>13.82</b>	<b>13.66</b>	<b>14.13</b>	<b>17.70</b>

Source: U.S. Department of Commerce and USITC

**U.S. Imports of Nickel Waste and Scrap**  
**HTS # 7503.00.0000**  
**Annual 2018 - 2020, January - February 2020 & 2021**

Quantity (kilograms)					
	2018	2019	2020	YTD 2020	YTD 2021
Canada	9,364,751	12,946,659	8,740,387	1,093,461	967,359
United Kingdom	7,887,422	7,607,715	5,347,910	1,799,690	486,796
Russia	2,133,152	3,955,171	3,819,401	649,594	856,929
Mexico	3,434,361	4,032,481	2,503,935	591,979	182,168
Japan	2,290,389	3,244,857	2,318,574	536,326	134,060
Germany	2,180,114	2,111,883	1,077,706	358,523	29,300
Singapore	1,216,230	1,814,767	875,862	240,239	37,570
China	2,659,818	866,300	872,509	273,345	61,137
France	2,148,396	1,799,791	672,001	138,816	11,999
Australia	519,245	506,421	663,704	145,068	50,710
Saudi Arabia	1,222,550	870,560	475,849	-	-
Spain	813,116	793,054	362,194	58,133	14,170
Netherlands	79,034	122,848	348,759	13,255	-
Italy	916,000	1,022,676	318,951	89,676	20,644
South Korea	636,921	654,395	312,974	109,703	-
<i>All Others</i>	<i>3,093,979</i>	<i>2,469,434</i>	<i>1,867,001</i>	<i>245,427</i>	<i>638,485</i>
<b>Total</b>	<b>40,595,478</b>	<b>44,819,012</b>	<b>30,577,717</b>	<b>6,343,235</b>	<b>3,491,327</b>

Value (Customs, USD)					
	2018	2019	2020	YTD 2020	YTD 2021
Canada	30,528,800	39,049,585	27,163,370	5,641,999	3,045,341
United Kingdom	90,109,689	85,556,628	43,903,769	13,052,602	4,842,098
Russia	27,114,340	47,076,357	30,457,585	3,102,115	11,663,844
Mexico	24,417,045	29,293,219	14,488,186	4,239,941	833,408
Japan	21,047,828	26,162,494	13,141,411	4,126,492	1,038,445
Germany	26,396,790	24,121,413	12,086,168	3,944,825	124,839
Singapore	13,947,230	19,328,795	8,109,471	2,761,272	306,878
China	25,906,252	5,221,553	5,062,491	1,917,419	395,608
France	11,691,105	11,523,542	4,121,024	1,129,089	51,733
Australia	1,553,858	1,276,803	3,118,422	395,500	442,048
Saudi Arabia	6,362,558	4,145,028	1,776,569	-	-
Spain	4,727,454	3,913,624	1,155,676	157,888	21,255
Netherlands	350,954	370,177	322,076	32,463	-
Italy	10,591,283	9,790,106	2,985,506	899,617	62,385
South Korea	6,650,599	6,787,683	2,827,405	1,040,238	-
<i>All Others</i>	<i>16,803,559</i>	<i>14,009,891</i>	<i>9,592,521</i>	<i>1,446,769</i>	<i>4,062,564</i>
<b>Total</b>	<b>318,199,344</b>	<b>327,626,898</b>	<b>180,311,650</b>	<b>43,888,229</b>	<b>26,890,446</b>

AUV (\$/kg)					
	2018	2019	2020	YTD 2020	YTD 2021
Canada	3.26	3.02	3.11	5.16	3.15
United Kingdom	11.42	11.25	8.21	7.25	9.95
Russia	12.71	11.90	7.97	4.78	13.61
Mexico	7.11	7.26	5.79	7.16	4.57
Japan	9.19	8.06	5.67	7.69	7.75
Germany	12.11	11.42	11.21	11.00	4.26
Singapore	11.47	10.65	9.26	11.49	8.17
China	9.74	6.03	5.80	7.01	6.47
France	5.44	6.40	6.13	8.13	4.31
Australia	2.99	2.52	4.70	2.73	8.72
Saudi Arabia	5.20	4.76	3.73	-	-
Spain	5.81	4.93	3.19	2.72	1.50
Netherlands	4.44	3.01	0.92	2.45	-
Italy	11.56	9.57	9.36	10.03	3.02
South Korea	10.44	10.37	9.03	9.48	-
<i>All Others</i>	<i>5.43</i>	<i>5.67</i>	<i>5.14</i>	<i>5.89</i>	<i>6.36</i>
<b>Total</b>	<b>7.84</b>	<b>7.31</b>	<b>5.90</b>	<b>6.92</b>	<b>7.70</b>

Source: U.S. Department of Commerce and USITC

**U.S. Imports of Nickel Powders**  
**HTS # 7504.00.0010**  
**Annual 2018 - 2020, January - February 2020 & 2021**

Quantity (kilograms)					
	2018	2019	2020	YTD 2020	YTD 2021
Canada	4,091,793	3,324,095	2,319,678	435,650	483,707
United Kingdom	745,494	754,160	374,671	97,026	33,995
Finland	529,366	679,778	308,931	76,989	22,800
Australia	378,000	342,000	290,088	72,000	36,000
Russia	52,594	433,000	192,500	-	-
South Africa	455,000	478,000	158,000	80,000	20,000
Germany	83,300	65,023	96,013	2,985	12,442
Belgium	225,797	106,778	35,702	5,710	9,880
China	124,643	24,669	17,382	5,819	3,160
France	13,203	12,474	11,813	1,700	1,890
Italy	1,293	219	4,700	-	-
Ireland	5,957	2,087	4,297	1,095	338
Netherlands	-	-	3,356	-	-
Austria	-	-	2,421	-	-
Japan	65,826	75,542	2,055	140	62
<i>All Others</i>	23,467	70,185	1,671	1,264	-
<b>Total</b>	<b>6,795,733</b>	<b>6,368,010</b>	<b>3,823,278</b>	<b>780,378</b>	<b>624,274</b>

Value (Customs, USD)					
	2018	2019	2020	YTD 2020	YTD 2021
Canada	87,300,420	75,659,301	52,974,410	9,768,570	11,753,048
United Kingdom	16,429,119	14,651,756	8,846,154	2,047,642	981,898
Finland	7,468,396	9,373,919	4,648,863	1,172,921	625,389
Australia	5,090,183	4,689,194	3,901,308	1,068,841	581,078
Russia	1,218,266	6,094,819	2,666,900	-	-
South Africa	6,172,559	6,531,223	2,136,167	1,106,304	316,197
Germany	4,931,695	3,606,246	4,243,611	148,050	592,763
Belgium	4,436,454	2,531,404	994,511	163,946	278,256
China	2,555,986	504,915	503,977	181,590	91,551
France	1,157,505	1,087,743	1,082,928	182,409	136,600
Italy	34,866	7,812	65,934	-	-
Ireland	255,500	68,445	136,402	32,666	12,164
Netherlands	-	-	79,200	-	-
Austria	-	-	256,523	-	-
Japan	1,617,935	1,839,296	164,539	12,718	10,511
<i>All Others</i>	825,567	1,891,715	315,394	241,687	-
<b>Total</b>	<b>139,494,451</b>	<b>128,537,788</b>	<b>83,016,821</b>	<b>16,127,344</b>	<b>15,379,455</b>

AUV (\$/kg)					
	2018	2019	2020	YTD 2020	YTD 2021
Canada	21.34	22.76	22.84	22.42	24.30
United Kingdom	22.04	19.43	23.61	21.10	28.88
Finland	14.11	13.79	15.05	15.23	27.43
Australia	13.47	13.71	13.45	14.85	16.14
Russia	23.16	14.08	13.85	-	-
South Africa	13.57	13.66	13.52	13.83	15.81
Germany	59.20	55.46	44.20	49.60	47.64
Belgium	19.65	23.71	27.86	28.71	28.16
China	20.51	20.47	28.99	31.21	28.97
France	87.67	87.20	91.67	107.30	72.28
Italy	26.97	35.67	14.03	-	-
Ireland	42.89	32.80	31.74	29.83	35.99
Netherlands	-	-	23.60	-	-
Austria	-	-	105.96	-	-
Japan	24.58	24.35	80.07	90.84	169.53
<i>All Others</i>	35.18	26.95	188.75	191.21	-
<b>Total</b>	<b>20.53</b>	<b>20.18</b>	<b>21.71</b>	<b>20.67</b>	<b>24.64</b>

Source: U.S. Department of Commerce and USITC

**U.S. Imports of Nickel Flakes**  
**HTS # 7504.00.0050**  
**Annual 2018 - 2020, January - February 2020 & 2021**

Quantity (kilograms)					
	2018	2019	2020	YTD 2020	YTD 2021
Germany	829	2,389	10,338	-	-
United Kingdom	812	308	1,057	1,057	-
Ireland	601	3,114	748	-	-
France	-	-	273	-	-
Canada	942	104	163	-	189
Austria	-	152	-	-	-
Belgium	115	-	-	-	-
<i>All Others</i>	-	-	-	-	-
<b>Total</b>	<b>3,299</b>	<b>6,067</b>	<b>12,579</b>	<b>1,057</b>	<b>189</b>

Value (Customs, USD)					
	2018	2019	2020	YTD 2020	YTD 2021
Germany	30,007	61,716	318,864	-	-
United Kingdom	21,939	9,662	27,852	27,852	-
Ireland	22,450	138,773	35,546	-	-
France	-	-	15,180	-	-
Canada	495,588	20,245	14,470	-	9,816
Austria	-	15,592	-	-	-
Belgium	2,600	-	-	-	-
<i>All Others</i>	-	-	-	-	-
<b>Total</b>	<b>572,584</b>	<b>245,988</b>	<b>411,912</b>	<b>27,852</b>	<b>9,816</b>

AUV (\$/kg)					
	2018	2019	2020	YTD 2020	YTD 2021
Germany	36.20	25.83	30.84	-	-
United Kingdom	27.02	31.37	26.35	26.35	-
Ireland	37.35	44.56	47.52	-	-
France	-	-	55.60	-	-
Canada	526.10	194.66	88.77	-	51.94
Austria	-	102.58	-	-	-
Belgium	22.61	-	-	-	-
<i>All Others</i>	-	-	-	-	-
<b>Total</b>	<b>173.56</b>	<b>40.55</b>	<b>32.75</b>	<b>26.35</b>	<b>51.94</b>

Source: U.S. Department of Commerce and USITC

**U.S. Imports of Nickel Oxide Sinters and Other Intermediate Products of Nickel Metallurgy**  
**HTS # 7501.20.0000**  
**Annual 2018 - 2020, January - February 2020 & 2021**

<b>Quantity (kilograms)</b>					
	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>YTD 2020</b>	<b>YTD 2021</b>
China	326,974	261,158	493,705	69,786	-
United Kingdom	3,550	35,168	23,541	3,910	3,698
Indonesia	-	-	10,482	-	-
South Korea	12,310	10,950	6,906	-	1,956
India	-	-	17	-	-
Mexico	22,828	-	-	-	-
Norway	20,382	-	-	-	-
Russia	-	36	-	-	-
Canada	-	2	-	-	-
Switzerland	-	522	-	-	-
Australia	24,493	-	-	-	-
Italy	-	-	-	-	18
Japan	-	5	-	-	-
<i>All Others</i>	-	-	-	-	-
<b>Total</b>	<b>410,537</b>	<b>307,841</b>	<b>534,651</b>	<b>73,696</b>	<b>5,672</b>

<b>Value (Customs, USD)</b>					
	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>YTD 2020</b>	<b>YTD 2021</b>
China	6,418,469	3,567,278	6,784,120	1,422,580	-
United Kingdom	72,366	716,850	483,760	79,703	75,380
Indonesia	-	-	134,606	-	-
South Korea	250,953	223,204	140,796	-	39,859
India	-	-	6,720	-	-
Mexico	465,340	-	-	-	-
Norway	301,800	-	-	-	-
Russia	-	9,720	-	-	-
Canada	-	2,207	-	-	-
Switzerland	-	10,645	-	-	-
Australia	499,296	-	-	-	-
Italy	-	-	-	-	4,956
Japan	-	4,483	-	-	-
<i>All Others</i>	-	-	-	-	-
<b>Total</b>	<b>8,008,224</b>	<b>4,534,387</b>	<b>7,550,002</b>	<b>1,502,283</b>	<b>120,195</b>

<b>AUV (\$/kg)</b>					
	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>YTD 2020</b>	<b>YTD 2021</b>
China	19.63	13.66	13.74	20.38	-
United Kingdom	20.38	20.38	20.55	20.38	20.38
Indonesia	-	-	12.84	-	-
South Korea	20.39	20.38	20.39	-	20.38
India	-	-	395.29	-	-
Mexico	20.38	-	-	-	-
Norway	14.81	-	-	-	-
Russia	-	270.00	-	-	-
Canada	-	1,103.50	-	-	-
Switzerland	-	20.39	-	-	-
Australia	20.39	-	-	-	-
Italy	-	-	-	-	275.33
Japan	-	896.60	-	-	-
<i>All Others</i>	-	-	-	-	-
<b>Total</b>	<b>19.51</b>	<b>14.73</b>	<b>14.12</b>	<b>20.38</b>	<b>21.19</b>

Source: U.S. Department of Commerce and USITC



**U.S. Imports of Nickel Mattes**  
**HTS # 7501.10.0000**  
**Annual 2018 - 2020, January - February 2020 & 2021**

	Quantity (kilograms)				
	2018	2019	2020	YTD 2020	YTD 2021
Sweden	-	500	-	-	-
<i>All Others</i>	-	-	-	-	-
<b>Total</b>	-	<b>500</b>	-	-	-

	Value (Customs, USD)				
	2018	2019	2020	YTD 2020	YTD 2021
Sweden	-	34,160	-	-	-
<i>All Others</i>	-	-	-	-	-
<b>Total</b>	-	<b>34,160</b>	-	-	-

	AUV (\$/kg)				
	2018	2019	2020	YTD 2020	YTD 2021
Sweden	-	68.32	-	-	-
<i>All Others</i>	-	-	-	-	-
<b>Total</b>	-	<b>68.32</b>	-	-	-

Source: U.S. Department of Commerce and USITC