HEARING ON "RARE EARTH MINERALS AND 21ST CENTURY INDUSTRY"
U.S. HOUSE OF REPRESENTATIVES COMMITTEE ON SCIENCE AND TECHNOLOGY
SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT
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Mr. Chairman and members of the Subcommittee. Good afternoon. I am pleased to appear this afternoon as part of your hearing on rare earth minerals and 21st century industry to try to address three questions that I understand are of interest to the Subcommittee:

1. How do Chinese actions in the rare earths sector fit into China's policies on strategic industries and economic development?
2. Are there policies that the Federal Government can adopt, or strategies that the U.S. private sector can adopt, that can help assure a consistent and sustainable domestic supply of economically and militarily critical materials such as rare earths?
3. Are there policies that the Federal Government can adopt, or strategies that the U.S. private sector can adopt, that would support firms dependent on rare earth elements to retain their manufacturing capacity in the U.S.?

Let me start with some acknowledgments on my limitations as a witness on rare earth minerals. First, my background and expertise is on international trade law matters, including the World Trade Organization, and manufacturing competitiveness issues. Others on the panel today are the experts on minerals in general or rare earth minerals policies.

Our firm, over the years, has looked at many aspects of the U.S.-China relationship and has prepared for the U.S.-China Economic and Security Review Commission various studies looking at the trade and manufacturing impacts of China's practices. For example, on March 24, 2009 I testified at a hearing before the Commission on "China's Industrial Policy and its Impact on U.S. Companies, Workers and the American Economy."

Rare earths are not part of the current WTO challenges brought by the U.S., the EU and Mexico of China's export restraints on various materials. (see WT/DS394/1, China – Measures Related to the Exportation of Various Raw Materials, request for consultations by the United States) Purchasers of rare earths are concerned about similar types of restraints imposed by China on rare earth minerals and that there have been discussions by the U.S. with key allies about a possible future case. *Inside U.S.-China Trade*, October 21, 2009, "U.S. and Allies Discuss Rare Earth Metals Action at WTO."

Now let me turn to the questions of interest to the Subcommittee.

China's Actions on Rare Earth Minerals

What China is doing on rare earth minerals mirrors what it is doing on a large number of other raw materials: reducing availability of supply for global customers and/or making purchases more expensive through the imposition of export duties, export licenses, etc. The objective can be to encourage foreign investors to move investment to China to produce downstream products in the Middle Kingdom versus overseas, or to ensure low priced supplies for sectors in China targeted for rapid industrial growth.

China's most recent five-year plan (covering 2006-2010) continues to focus development in certain sectors and to ensure a leading role for state-owned enterprises ("SOEs") in certain sectors.

Specific guidance regarding SOEs was provided in December 2006 by the National Development and Reform Commission (NDRC) when it issued a guiding opinion on state-owned assets restructuring. The opinion states that SASAC's state-owned assets should concentrate on "important industries and key areas" (i.e., strategic industries). The opinion then explained that the "important industry and key areas" shall "mainly include industries that involve national security, large and important infrastructures, important mineral resources, important public utilities and public services, and key enterprises in the pillar industries and high-tech industries."

Seven important industries and key areas were identified: defense, electric power and grid, petroleum and petrochemical, telecommunications, coal, civil aviation, and shipping. Basic and pillar industries where the state would also maintain an important role included equipment manufacturing, auto, information technology, construction, iron and steel, non-ferrous metals, chemicals, and surveying and design.

The counterpart to rapid development of key industries is maintaining low prices and ready availability of key raw materials. Not surprisingly, the cases filed by the US, the EU and Mexico against Chinese export restraints on certain raw materials involve raw materials used in some of the key industries identified in China's industrial policies – steel, aluminum and chemicals. As the USTR press release of November 28, 2009, announcing the panel request against China indicated, "The materials at issue are: bauxite, coke, fluorspar, magnesium, manganese, silicon metal, silicon carbide, yellow phosphorus and zinc, key inputs for numerous downstream products in the steel, aluminum and chemical sectors across the globe."

A corollary to keeping prices at home low is the ability to force trading partners to shutter capacity in downstream industries. For example, a study came out in December 2009, published by the European Chamber, entitled "Overcapacity in China: Causes, Impacts and Recommendations." http://www.europeanchamber.com.cn/view/static/?sid=6388. The European Chamber in China reviewed the massive problems of overcapacity in a number of important industries including steel, aluminum, cement, chemicals, refining, wind power equipment, ship building, flat glass, and photovoltaics. While the causes of overcapacity in China are varied as reviewed in the study, when coupled with export restraints on key raw materials, China can apply pressure on trading partners to make the adjustments for excess capacity created in China by limiting access at affordable prices to key raw materials or preempting development of key new technologies in the U.S. and elsewhere.

And control of key raw materials can be used to attract foreign investment by limiting access to such materials to those with a local presence. As discussed on one website, China is apparently offering to give ample supplies of rare earth minerals to companies that invest in China, even as China moves to limit or eliminate availability of product for export.

> Chinese officials have made it very clear: If foreign manufacturing companies move their facilities to China, they will be guaranteed a steady supply of rare earths. Many technology companies are reluctant to do this because they want to protect their intellectual property, but will the temptation of an endless REE supply be too much? Companies continue to move operations to China, but the tension still exists.

Clint Cox, The Anchor House, Inc. (Research on Rare Earth Elements), December 17, 2009, http://theanchorhouse.com (page 5).

When one looks at China, one sees all of the effects and/or purposes behind the wide ranging export restraints applied to rare earths and other materials. A series of articles in the last four months of 2009 reflects a range of concerns and purposes behind the draft "2009-2015 Rare Earth Industry Development Plan" from the Ministry of Industry and Information Technology:

> [A]s early as 1998, China has started to limit the export quantities of rare earth products, and implemented the differentiating principle of "forbid, encourage, and restrict:" forbid the export of rare earth raw materials; restrict oxides and metals by using export quota; encourage downstream rare earth products, such as high value-added products like magnetic materials and fluorescent powder.

However, under the increasing global demand and China's increasingly reduced number of eligible export companies and export quotas, some companies with large quotas started to sell their quotas illegally. In addition, some developed countries' companies started to invest and establish factories in tungsten, antimony, and other rare earth reserves areas, bought large quantities of raw materials, processed them simply before shipping them overseas for further processing or storage, thereby effectively evaded China's export control. From 1990 to 2008, China's rare earth export grew almost 10 times, but the average export price has lowered to about 60% of the original price.

All these demonstrate that China's rare earth industry has three serious problems: overcapacity, disorderly competition, and cheap export on a large scale. It is of great urgency that we protect our rare earth resources and establish our reserve system.

MIIT's 2009-2015 Plan aims to macro-manage the rare earth industry, strengthen the control of strategic resources, and strictly control production capacity, by both administrative and market means. In the next 6 years, no new rare earth mining permit will be approved, separation of newly formed rare earth smelting companies will be strictly reviewed, and existing rare earth companies will be eliminated [by judging their performance] in the three areas of technology and equipment, environmental protection, and management.

At the same time, industry access standards will be higher, elimination of outdated capacity will be accelerated through "shut down, pause, merger, transfer." Promote merger and reorganization of companies, strengthen and enlarge rare earth industry, form leading rare earth companies, establish a "China Rare Earth OPEC," form companies with absolute dominating power in the market so that China can be the leader in controlling international market price.

Of course, to accomplish this, merely depending on controlling resources and export is not enough. More importantly, we must grasp rare earth core technology patents, rare earth application market, rare earth products standards. Therefore, we must start from the technology innovation, invest more in technology, and at the same time value intellectual property, implement IP strategies, and seize the commanding ground of technology. Break out of the technology restrictions of foreign-invested enterprises, and establish our own rare earth "high-way" industry chain.

"2009-2015 Rare Earth Industry Development Plan" Has Been Passed, Hardware Business website (an electronic business website formed by Wenzhou Shengqi Internet Technology, Co., Ltd.), November 6, 2009 (unofficial translation).

China is attempting to make significant cuts to both rare earth exports. China has implemented its program to limit foreign availability of rare earths through a combination of both export duties and export quotas. These actions will raise prices outside of China by curtailing supplies and by raising import prices (with all relevant taxes or duties).

> The quota for rare earth materials was 31,300 MTs in 2009, down 8.33% from 2008. This is the 5th year since China started decreasing its rare earth export.
>
> As a corresponding policy to the annual 35,000 MTs quota from 2009 to 2015 proposed by MIIT, China will restrict its mineral annual production to 130,000 to 170,000 MTs and its rare earth smelting products' production to 120,000 to 150,000 MTs from 2009 to 2015.

"2009-2015 Rare Earth Industry Development Plan," China Suppliers' website (under the guidance of State Council Information Office, Internet Promotion Division; MOFCOM Department of Market Operation Regulation; National Development and Reform Commission, International Cooperation Center), September 4, 2009 (unofficial translation).

For 2010, the Chinese export duty and quota programs are reviewed in a series of documents issued in late 2009.

Included as Exhibit 1 to this testimony is an unofficial translation of the export duty rate chart for 2010, which is an attachment to a notice titled "State Council Customs Tariff Commission's Notice on the Implementation of the 2010 Tariff Schedule," Customs Tariff Commission Pub. [2009] No. 28, December 8, 2009. The exhibit shows export duties being assessed on 329 products in 2010 including many rare earth items (e.g., items 47, 89-92, 122-139 (export duties of 10 – 25%)).

Exhibit 2 to this testimony is an unofficial translation to the Ministry of Commerce of the People's Republic of China (MOFCOM) Trade Letter [2009] No. 147, December 29, 2009, "2010 1st Batch Export Quota Distribution for Rare-Earth Materials in General Trade." The total quota for the "1st batch" is 16,304 MT, with allocations given to twenty-two companies. A month and a half earlier, MOFCOM had published "Notice on Application Criteria and Procedures for 2010 Rare-Earth Materials Export Quota." MOFCOM Pub. [2009] No. 94, November 6, 2009. An unofficial translation is included as Exhibit 3.

The U.S.-China Economic and Security Review Commission (USCC) has done great work summarizing the general problem of export restrictions found in China as well as the USCC's understanding of how this problem plays out with rare earths. I have quoted the USCC at length because nobody has synthesized this data better. A complete excerpt of the USCC's views from its 2009 Report to Congress is available in Exhibit 4.

Regarding China's general export restrictions, the USCC states in its 2009 Report to Congress,

> Export restrictions or export quotas, especially on energy and raw materials, have two general effects: First, they suppress prices in the domestic market for these goods, which lowers production costs for industries that use the export-restricted materials; and second, these restrictions increase the world price for the raw materials that are affected by limiting the world supply, thereby raising production costs in competing countries.

U.S.-China Economic and Security Review Commission (USCC) 2009 Report to Congress, at 62. Available at http://www.uscc.gov/annual_report/2009/annual_report_full_09.pdf.

While specifically addressing China's restrictions on the export of rare earth minerals, the USCC notes,

> China appears to be tightening its control over the supply of rare earth elements, valuable minerals that are used prominently in the production of such high-technology goods as flat panel screens and cell phones, and crucial green technologies such as hybrid car batteries and the special magnets used in wind turbines. USCC 2009 Report to Congress, at 63.

This reduction in supply by China is problematic because, according to the USCC, "China accounts for the vast majority—93 percent—of the world's production of rare earth minerals, and for the last three years it has been reducing the amount that can be exported." 2009 Report to Congress, at 63. China admits that rare earth elements are "the most important resource for Inner Mongolia," which contains 75 percent of China's deposits. *Id.* Accordingly, the USCC cautions that by limiting exports and controlling production, the Chinese government is attempting to "consolidate its rare earths industry, with the aim of creating a consortium of miners and processors in Inner Mongolia." *Id.* And according to the USCC, these tighter limits on exports of rare earths will place foreign manufacturers at a disadvantage compared to the domestic producers, whose access will not be so restricted. *Id.*

Policies and Solutions for Government and Private Sector Consideration

First and foremost, the U.S. and its trading partners should be considering a second trade action against China on the range of export restraints being imposed on rare earths (and possibly other products). The U.S. and others were concerned about China's use of export restrictions during China's negotiations for accession to the World Trade Organization. China agreed to limit the use of export taxes to 84 product categories (none of which included rare earth items) at rates no higher than included in Annex 6 of the Protocol of Accession. The fact that in 2010 China has imposed export taxes on 329 product categories, including twenty-three rare earth categories, creates a strong case of violation by China on the export taxes alone. Other violations from the use of export quotas are likely as well. Hopefully, Congressional interest will help move the Administration towards a second case on an expedited basis.

On the domestic front, it is my understanding that both the government and the private sector are taking actions to understand the nature of the potential problems as well as looking for alternative sources of supply.

For example, it is my understanding that the National Defense Authorization Act for Fiscal Year 2010, Publ. Law 111-84, requires the Comptroller General to deliver a report to the House and Senate Committees on Armed Services by April 1st this year on "rare earth materials in the defense supply chain." Section 843, 50 USC app. 2093 note. The nature of the report suggests that it is likely to provide important options that should be considered by the Government to safeguard the military needs of the country moving forward in this area. Section 843(b) is reprinted below:

> (b) Matters Addressed.—The report required by subsection (a) shall address at a minimum, the following:
>
> (1) An analysis of the current and projected domestic and worldwide availability of rare earths for use in defense systems, including an analysis of projected availability of these materials in the export market.
>
> (2) An analysis of actions or events outside the control of the Government of the United States that could restrict the access of the Department of Defense to rare earth materials, such as past procurements and attempted procurements of rare earth mines and mineral rights.
>
> (3) A determination as to which defense systems are currently dependent on, or projected to become dependent on, rare earth materials, particularly neodymium iron boron magnets, whose supply could be restricted—

(A) by actions or events identified pursuant to paragraph (2); or

(B) by other actions or events outside the control of the Government of the United States.

(4) The risk to national security, if any, of the dependencies (current or projected) identified pursuant to paragraph (3).

(5) Any steps that the Department of Defense has taken or is planning to take to address any such risk to national security.

(6) Such recommendations for further action to address the matters covered by the report as the Comptroller General considers appropriate.

Historically, the U.S. maintained a strategic stockpile of critical materials for national defense. Presumably, one of the issues that will be addressed in the report is the extent to which stockpiling rare earth materials is appropriate or feasible.

The Chairman and Members of this Subcommittee might want to advocate creation of a similar report for the civilian sector. Such a report would obviously be helpful to Members of Congress in understanding the challenges facing the American economy from the current reliance on China as the source of supply and what legislative approaches might be pursued to safeguard our commercial and military interests.

Press accounts suggest that in recent years there has been renewed interest in developing rare earth mineral resources outside of China and that several mines are in the process of being reactivated or developed. See, e.g., "New USGS Rare Earth Report Includes Thorium Energy, Inc.," Earth Times, Oct. 8, 2009; http://www.earthtimes.org/articles/show/new-usgs-rare-earth-report-includes-thorium-energy-inc,991131.shtml; "Canadian firms set up search for rare-earth metals," New York Times, Sept. 9, 2009, http://www.nytimes.com/2009/09/10/business/global/10mineral.html?r=l&scp=10&sq=br

Possible American sources of rare-earths include a separation plant at Mount Pass, CA. Bastnasite concentrates and other rare-earth intermediates and refined products continue to be sold from mine stocks at Mountain Pass. Exploration for rare earths continued in 2009; however, global economic conditions were not as favorable as in early 2008. Economic assessments continued at Bear Lodge in Wyoming; Diamond Creek in Idaho; Elk Creek in Nebraska; and Lemhi Pass in Idaho-Montana.

Thus, government and the private sector may have additional sources of supply of rare earths beyond China, although the challenge may be overall cost of supply, particularly in countries like the U.S. or Canada where environmental needs are more likely to be addressed at present than in China.

Presumably, the government, under CFIUS, can help ensure that mines in the U.S. are not purchased by foreign interests whose governments have limited supply to U.S. users and that new mines receive priority attention in terms of various government licenses and reviews.

I note that the Senate Committee on Energy and Natural Resources held a hearing last summer on mining law reform. The hearing had a number of witnesses who talked about the ability to improve the U.S. ability to supply more of its rare earth mineral needs and what challenges they faced based on various pending bills. Mining Law Reform, S. Hrg. 111-116, 111th Cong., 1st Sess. (July 14, 2009)(S.796; S.140). Certainly, the Congress will want to be sure that any legislation balances our needs for access to critical raw materials with the other concerns prompting legislative modifications.

Finally, the USGS indicates that for most rare earth minerals there are substitute products available, although known substitutes are less effective than the rare earth minerals. The U.S. government can support research efforts into the development of alternative solutions to current rare earth needs both directly through basic and applied research and through tax policies and other actions to support private sector research.

Thank you for the opportunity to appear today. I would be pleased to respond to any questions.

Exhibit 1

出口商品税率表
Export Duty Rate Chart (2010)

序号 No.	EX ①	税则号列 Tariff No.	商品名称（简称） Product Name	出口税率 (%) Export Duty Rate (%)	2010年暂定税率(%) 2010 Interim Export Duty Rate (%)	2010年特别出口税率 (%) 2010 Special Export Duty Rate (%)
1		03019210	鳗鱼苗 Eels fry	20	10	
2		05061000	经酸处理的骨胶原及骨 Ossein and bones treated with acid	40		
3		05069011	含牛羊成分的骨粉及骨废料 Powder and waste of bones of bovine and sheep	40		
4		05069019	其他骨粉及骨废料 Other powder and waste of bones	40		
5	ex	05069090	其他骨及角柱(已脱胶骨、角柱除外) Other bones and horn-cores (other than degelatinized bones and horn-cores)	40		
6	ex	05069090	已脱胶骨、角柱 Degelatinized bones and horn-cores	40	0	
7		25041010	鳞片状天然石墨 Natural graphite in flakes		20	
8		25041099	其它粉末状天然石墨 Other natural graphite in power		20	
9		25049000	其他天然石墨 Other natural graphite		20	
10		25085000	红柱石,蓝晶石及硅线石，不论是否煅烧 Andalusite,kyanite, and sillimanite, whether calcined or not		10	
11		25086000	富铝红柱石 Mullite		10	
12		25101010	未碾磨磷灰石 Ungrounded apatite		35	
13		25101090	未碾磨天然磷酸钙、天然磷酸铝钙及磷酸盐白垩，磷灰石除外 Ungrounded natural calcium phosphates, natural aluminum calcium phosphates, and phosphatic chalk other than apatite		35	
14		25102010	已碾磨磷灰石 Ground apatite		35	
15		25102090	已碾磨天然磷酸钙、天然磷酸铝钙及磷酸盐白垩，磷灰石除外 Ground natural calcium phosphates, natural aluminum calcium phosphates, and phosphatic chalk other than apatite		35	
16		25111000	天然硫酸钡(重晶石) Natural barium sulphate		10	

			(barites)			
17		25112000	天然碳酸钡(毒重石)，不论是否煅烧 Natural barium carbonate(witherite), whether calcined or not		10	
18		25191000	天然碳酸镁（菱镁矿） Natural magnesium carbonate (magnesite)		5	
19		25199010	熔凝镁氧矿 Fused magnesia		10	
20		25199020	烧结镁氧矿（重烧镁） Dead-burned (sintered) magnesia		10	
21		25199030	碱烧镁（轻烧镁） Light-burned magnesia		5	
22		25199099	非纯氧化镁 Other magnesium oxide, other than chemically pure magnesium oxide		5	
23		25261020	未破碎及未研粉的滑石,不论是否粗加修整或切割成矩形板块 Talc, not crushed, not powdered, whether or not roughly trimmed or merely cut into blocks or slabs or a rectangular shape		10	
24	ex	25262020	已破碎或已研粉的天然滑石（体积百分比90%及以上的产品粒度小于等于1 8微米的滑石粉除外） Crushed or powdered talc (other than that containing talc 90% or more by volume and of a granularity of 18mm or less)		10	
25	ex	25262020	体积百分比90%及以上的产品粒度小于等于18微米的滑石粉 Crushed or powdered talc, containing talc 90% ore more by volume and of a granularity of 18mm or less		5	
26		25292100	按重量计氟化钙含量≤97%的萤石 Fluorspar, containing by weight 97% or less of calcium fluoride		15	
27		25292200	按重量计氟化钙含量＞97%的萤石 Fluorspar, containing by weight more than 97% of calcium fluoride		15	
28		25309020	稀土金属矿 Ores of rare earth metals		15	
29	ex	25309099	其他氧化镁含量在70％(含70%)以上的矿产品 Other mineral products with 70% or more of magnesia		5	
30		25301010	未膨胀的绿泥石 Chlorites, unexpanded		10	
31		26011110	平均粒径小于0.8毫米的未煅烧铁矿砂及其精矿；但焙烧黄铁矿除外 Iron ores and concentrates, other than roasted iron pyrites, non-agglomerated, of a granularity of less than 0.8mm		10	
32		26011120	平均粒径不小于0.8毫米，但不大于6.3毫米的未煅烧铁矿砂及其精矿；但焙烧黄铁矿除外 Iron ores and concentrates, other than roasted iron pyrites, non-agglomerated, of a		10	

			granularity of 0.8mm or more, but not exceeding 6.3mm			
33		26011190	平均粒径大于6.3毫米的未烧结铁矿砂及其精矿，但焙烧黄铁矿除外 Iron ores and concentrates, other than roasted iron pyrites, non-agglomerated, of a granularity of more than 6.3mm		10	
34		26011200	已烧结铁矿砂及其精矿 Agglomerated iron ores and concentrates		10	
35		26012000	焙烧黄铁矿 Roasted iron pyrites		10	
36		26020000	锰矿砂及其精矿,包括以干重计含锰量在20%及以上的锰铁砂及其精矿 Manganese ores and concentrates, including ferruginous manganese ores and concentrates with a manganese content of 20% or more, calculated on the dry weight		15	
37		26030000	铜矿砂及其精矿 Copper ores and concentrates		10	
38		26040000	镍矿砂及其精矿 Nickel ores and concentrates		15	
39		26050000	钴矿砂及其精矿 Cobalt ores and concentrates		15	
40		26070000	铅矿砂及其精矿 Lead ores and concentrates	30		
41	ex	26080000	锌矿砂及其精矿（氧化锌含量大于80%的灰色饲料氧化锌除外） Zinc ores and concentrates (other than grey feed grade zinc oxide, containing more than 80% of zinc oxide by weight)	30		
42	ex	26080000	灰色饲料氧化锌（氧化锌ZnO含量大于80%）Grey feed grade zinc oxide, containing more than 80% of zinc oxide by weight	30	0	
43		26090000	锡矿砂及其精矿 Tin ores and concentrates	50	20	
44		26100000	铬矿砂及其精矿 Chromium ores and concentrates		15	
45		26110000	钨矿砂及其精矿 Tungsten ores and concentrates	20		
46		26121000	铀矿砂及其精矿 Uranium ores and concentrates		10	
47		26122000	钍矿砂及其精矿 Thorium ores and concentrates		10	
48		26131000	已焙烧钼矿砂及其精矿 Molybdenum ores and concentrates, roasted		15	
49		26139000	其他钼矿砂及其精矿 Molybdenum ores and concentrates, other		15	
50		26140000	钛矿砂及其精矿 Titanium ores and concentrates		10	
51		26151000	锆矿砂及其精矿 Zirconium ores and concentrates		10	

52		26159010	水合钽铌原料（钽铌富集物） Hydrated tantalum/niobium materials or enriched materials from tantalum/niobium ore	30		
53		26159090	其他铌钽矿砂及其精矿 tantalum/niobium ores and concentrates, other	30		
54		26161000	银矿砂及其精矿 Silver ores and concentrates		10	
55		26169000	其他贵金属矿砂及其精矿 Precious metal ores and concentrates, other		10	
56		26171010	生锑（锑精矿，选矿产品） Crude antimony (antimony concentrates which are mineral products)	20		
57		26171090	其他锑矿砂及其精矿 Antimony ores and concentrates, other		10	
58		26179010	朱砂(辰砂) Cinnabar		10	
59		26179090	其他矿砂及其精矿 Other ores and concentrates, other		10	
60		26180010	冶炼钢铁产生的锰渣 Granulated slag (slag sand) from the manufacture of iron or steel, containing mainly manganese		10	
61		26180090	冶炼钢铁产生的其他粒状熔渣(熔渣砂) Granulated slag (slag sand) from the manufacture of iron or steel, other		10	
62		26190000	冶炼钢铁产生的熔渣、浮渣、氧化皮及其他废料 Slag, dross (other than granulated slag), scalings and other waste from the manufacture of iron or steel		10	
63		26201100	含硬锌的矿灰及残渣 Slag, ash, and residues, containing mainly hard zinc spelter		10	
64		26201900	含其他锌的矿灰及残渣 slag, ash, and residues, containing mainly other zinc		10	
65		26202100	含铅汽油的淤渣及含铅抗震化合物的淤渣 Leaded gasoline sludges and leaded anti-knock compound sludges		10	
66		26202900	其他主要含铅的矿灰及残渣 Other zinc-containing ore slag, ore ash and residues, containing mainly lead, other		10	
67		26203000	主要含铜的矿灰及残渣 Other zinc-containing ore slag, ore ash and residues, containing mainly copper		10	
68		26206000	含砷、汞、铊及其混合物，用于提取或生产砷、汞、铊及其化合物的矿灰及残渣 Other zinc-containing ore slag, ore ash and residues, containing arsenic, mercury, thallium or their mixtures, of a kind used for the extraction of arsenic, mercury, thallium,		10	

			or for the manufacture of their chemical compounds			
69		26209100	含锑、铍、镉、铬及其混合物的矿灰及残渣 Other zinc-containing ore slag, ore ash and residues, containing antimony, beryllium, cadmium, chromium, or their mixtures		10	
70		26209910	主要含钨的矿灰及残渣 Other zinc-containing ore slag, ore ash and residues, containing mainly tungsten		10	
71		26209990	含其他金属及化合物的矿灰及残渣 Other zinc-containing ore slag, ore ash and residues, other		10	
72		27011100	未制成型的无烟煤,不论是否粉化 Coal, whether or not pulverized, but not agglomerated, anthracite		10	
73		27011210	未制成型的炼焦烟煤，不论是否粉化 Coal, whether or not pulverized, but not agglomerated, bituminous coal, coking coal		10	
74		27011290	未制成型的其他烟煤，不论是否粉化 Coal, whether or not pulverized, but not agglomerated, bituminous coal, other		10	
75		27011900	未制成型的其他煤,不论是否粉化 Coal, whether or not pulverized, but not agglomerated, other coal		10	
76		27012000	煤砖、煤球及类似用煤制固体燃料 Briquettes, ovoids, and similar solid fuels manufactured from coal		10	
77		27021000	褐煤 Lignite		10	
78		27022000	制成型的褐煤 Agglomerated lignite		10	
79		27030000	泥煤(包括肥料用泥煤)不论是否成型 Peat (including peat litter), whether or not agglomerated		10	
80		27040010	煤制焦炭及半焦炭不论是否成型 Coke and semi-coke of coal, whether or not agglomerated		40	
81	ex	27060000	从煤、褐煤、或泥煤蒸馏所得的焦油及矿物焦油，不论是否脱水或部分蒸馏，包括再造焦油（含蒽油≥50%及沥青≥40%的“炭黑油”除外） Tar distilled from coal, from lignite or from peat, and other mineral tars, whether or not dehydrated or partially distilled, including reconstituted tars (other than anthracene, containing oil ≥ 50% and asphalt ≥ 40% “black oil”)		15	
82		27071000	粗苯 Benzole		10	

83		27090000	石油原油及从沥青矿物提取的原油 Petroleum oils and oils obtained from bituminous minerals, crude		5	
84		28046900	按重量计硅含量小于99.99%的硅 Silicon, containing by weight less than 99.99% of silicon		15	
85		28047010	黄磷(白磷) Yellow phosphorus (white phosphorus)	20		
86		28047090	其他磷 Other phosphorus	20	10	
87		28053011	钕 Neodymium		15	
88		28053012	镝 Dysprosium		25	
89		28053013	铽 Terbium		25	
90		28053019	其他未相互混合或熔合的稀土金属、钪及钇 Rare-earth materials, scandium and yttrium, not intermixed or interalloyed, other		25	
91		28053021	已相互混合或熔合的稀土金属、钪及钇，电池级 Rare-earth materials, scandium and yttrium, intermixed or interalloyed, battery grade		25	
92		28053029	其他已相互混合或熔合的稀土金属、钪及钇 Rare-earth materials, scandium and yttrium, intermixed or interalloyed, other		25	
93		28092019	磷酸 Phosphoric acid		7	
94		28111100	氢氟酸（氟化氢） Hydrofluoric acid (hydrogen fluoride)		15	
95		28141000	氨 Anhydrous ammonia		7	
96		28142000	氨水 Ammonia in aqueous solution		7	
97		28220090	其他钴的氧化物及氢氧化物；商品氧化钴 Cobalt oxides and hydroxides; commercial cobalt oxides, other		10	
98		28253010	五氧化二钒 Divanadium pentaoxide		5	
99	ex	28256000	锗的氧化物 Germanium oxides		5	
100		28257000	钼的氧化物及氢氧化物 Molybdenum oxides and hydroxides		5	
101		28259011	钨酸 Tungstic acid		5	
102		28259012	三氧化钨 Tungstic oxide		5	
103		28259019	其他钨的氧化物和氢氧化物 Tungstic oxides and hydroxides, other		5	
104		28261290	其他氟化铝 Aluminum fluoride, other		5	
105		28261910	铵的氟化物 Fluorides, of ammonium		5	

106		28261920	钠的氟化物 Fluorides, of sodium		5	
107		28261990	其他氟化物 Fluorides, other		5	
108	ex	28269090	氟钽酸钾 Potassium tantalifluoride	30		
109		28331100	硫酸钠 Disodium sulphate		5	
110		28342110	肥料用硝酸钾 Potassium nitrate, for use as fertilizer		7	
111		28417010	钼酸铵 Ammonium molybdates		5	
112		28417090	其他钼酸盐 Molybdates, other		5	
113		28418010	仲钨酸铵 Ammonium paratungstate		5	
114		28418020	钨酸钠 Sodium tungstate		5	
115		28418030	钨酸钙 Calcium wolframate		5	
116		28418040	偏钨酸铵 Ammonium metatungstate		5	
117		28418090	其他钨酸盐 Tungstates (wolframates), other		5	
118		28461010	氧化铈 Cerium oxide		15	
119		28461020	氢氧化铈 Cerium hydroxide		15	
120		28461030	碳酸铈 Cerium carbonate		15	
121		28461090	铈的其他化合物 Ceric compounds, other		15	
122		28469011	氧化钇 Yttrium oxide		25	
123		28469012	氧化镧 Lanthanum oxide		15	
124		28469013	氧化钕 Neodymium oxide		15	
125		28469014	氧化铕 Europium oxide		25	
126		28469015	氧化镝 Dysprosium oxide		25	
127		28469016	氧化铽 terbium oxide		25	
128	ex	28469019	其他氧化稀土(灯用红粉除外) Other rare-earth oxide (other than red powder for lumination)		15	
129		28469021	氯化铽 Terbium chlorinates		25	
130		28469022	氯化镝 Dysprosium chlorinates		25	
131		28469028	混合氯化稀土 Mixture of rare-earth chlorides		15	
132		28469029	未混合氯化稀土 Unmixed rare-earth chlorides		15	
133		28469030	氟化稀土 Rare-earth fluorides		15	
134		28469041	碳酸镧 Lanthanum carbonates		15	
135		28469042	碳酸铽 Terbium carbonates		25	

136		28469043	碳酸镝 Dysprosium carbonates		25	
137		28469048	混合碳酸稀土 Mixture of rare-earth carbonates		15	
138		28469049	未混合碳酸稀土 Unmixed rare-earth carbonates		15	
139		28469090	稀土金属、钇、钪的其他化合物 Compounds of rare-earth metals, of yttrium or of scandium, other		25	
140		28499020	碳化钨 Tungsten carbide		5	
141		29022000	苯 Benzene	40	0	
142		31021000	尿素② Urea		旺季(2-6月,9月16日-10月15日)：35%；淡季(1月,7月1日-9月 15日,10月16日-12月31日)：当出口价格不高于基准价格时，7 %；当出口价格高于基准价格时，税率=(1.07-基准价格/出口价格)*100%(基准价格按2.3元/公斤计算) During peak season (February to June, September 16 to October 15): 35%. During off season (January, July 1 to September 15, October 16 to December 31): when export price does not exceed base price, 7%; when export price exceeds base price, duty rate = (1.07-base price/export price)*100% (base price is RMB2.30/kg)	旺季：7 5% During peak season: 75%
143		31024000	硝酸铵与碳酸钙或其他无肥效无机物的混合物 Mixtures of ammonium nitrate with calcium carbonate or other inorganic nonfertilizing substances		7	
144		31025000	硝酸钠 Sodium nitrate		7	
145		31026000	硝酸钙和硝酸铵的复盐及混合物 Double salts and mixtures of calcium nitrate and ammonium nitrate		7	

146		31028000	尿素及硝酸铵混合物的水溶液或氨水溶液 Mixtures of urea and ammonium nitrate in aqueous or ammoniacal solution		7	
147		31029010	氰氨化钙 Calcium cyanamide		7	
148		31029090	其他矿物氮肥及化学氮肥，包括上述子目未列名的混合物 Mineral or chemical fertilizers, nitrogenous, other, including mixtures not specified in the foregoing subheadings		7	
149		31031010	重过磷酸钙 Triple superphosphates		7	
150		31031090	其他过磷酸钙 Other superphosphates		7	
151		31039000	其他矿物磷肥或化学磷肥 Mineral or chemical fertilizers, phosphatic, other		7	
152		31042090	其他氯化钾 Mineral or chemical fertilizers, potassic, other		30	75
153		31043000	硫酸钾 Potassium sulphate		30	75
154		31049010	光卤石、钾盐及其他天然粗钾盐 Carnallite, sylvite, and other crude natural potassium salts		30	75
155		31049090	其他矿物钾肥及化学钾肥 Mineral or chemical fertilizers, potassic, other		30	75
156		31051000	制成片状及类似形状或每包毛重不超过10公斤的31章各货品 Goods of Chapter 31 (Fertilizers) in tablets or similar forms or in packages of a gross weight not exceeding 10kg		7	
157		31052000	三元复合肥 Mineral or chemical fertilizers containing the three fertilizing elements nitrogen, phosphorus, and potassium		1-9月：35%；10-12月：20% January to September: 35%. October to December: 20%	75
158		31053000	磷酸氢二铵② Diammonium hydrogenorthophosphate (diammonium phosphate)		旺季(2-5月,9月1日-10月15日)：35%；淡季(1月,6-8月,10月16日-12月31日)：当出口价格不高于基准价格时，7 %；当出口价格高于基准价格时，税率=(1.07-基准价格/出口价格)*100%(基准价格按4.0元/公斤计算) During peak season (February to May, September 1 to October 15): 35%.	旺季：7 5% During peak season: 75%.

					During off season (January, June to August, October 16 to December 31): when export price does not exceed base price, 7%; when export price exceeds base price, duty rate = (1.07-base price/export price)*100% (base price is RMB4.00/kg)	
159		31054000	磷酸二氢铵及磷酸二氢铵与磷酸氢二铵的混合物 ② Ammonium dihydrogenorthophosphate (monoammonium phosphate) and mixtures thereof with diammonium hydrogenorthophosphate (diammonium phosphate)		旺季(2-5月,9月1日-10月15日)：35%；淡季(1月,6-8月,10月16日-12月31日)：当出口价格不高于基准价格时，7 %；当出口价格高于基准价格时，税率=(1.07-基准价格/出口价格)*100%(基准价格按3.7元/公斤计算) During peak season (February to May, September 1 to October 15): 35%. During off season (January, June to August, October 16 to December 31): when export price does not exceed base price, 7%; when export price exceeds base price, duty rate = (1.07-base price/export price)*100% (base price is RMB3.70/kg)	旺季：7 5% During peak season: 75%.
160		31055100	含有硝酸盐及磷酸盐的肥料 Other mineral or chemical fertilizers containing nitrates and phosphates		7	
161		31055900	其他含氮磷两种肥效元素的矿物肥料或化学肥料 Other mineral or chemical fertilizers containing the two fertilizing elements nitrogen and phosphorus		7	
162		31056000	含磷钾两种元素的肥料 Mineral or chemical		7	

			fertilizers containing the two fertilizing elements phosphorus and potassium			
163		31059000	其他肥料 Other fertilizers		7	
164		38249091	含滑石5 0%以上的混合物 Compounds containing more than 50% of talc by weight		10	
165		41039011	经退鞣处理的山羊板皮 Dried hides and skins of goats, have undergoing a reversible tanning process	20		
166		41039019	山羊板皮，经退鞣处理的除外 Dried hides and skins of goats, other	20		
167		44012100	针叶木木片或木粒 Wood in chips or particles, coniferous		15	
168		44012200	非针叶木木片或木粒 Wood in chips or particles, non-coniferous		15	
169		44091010	针叶木地板条（块） Coniferous floor board strips		10	
170		44092910	其他非针叶木地板条 Other non-coniferous floor board strips		10	
171		44190031	木制一次性筷子 One-time chopsticks of wood		10	
172		44219021	木制圆签、圆棒、冰果棒、压舌片及类似一次性制品 Round toothpick, round stick, ice fruit stick, tongue-pressing plate, and similar one-time products, of wood		10	
173		47010000	机械木浆 Mechanical wood pulp		10	
174		47020000	化学木浆，溶解级 chemical wood pulp, dissolving grades		10	
175		47031100	未漂白针叶木碱木浆或硫酸盐木浆 Chemical wood pulp, soda or sulphate, other than dissolving grades, unbleached, coniferous		10	
176		47031900	未漂白非针叶木碱木浆或硫酸盐木浆 Chemical wood pulp, soda or sulphate, other than dissolving grades, unbleached, non-coniferous		10	
177		47032100	漂白针叶木碱木浆或硫酸盐木浆 Chemical wood pulp, soda or sulphate, other than dissolving grades, bleached, coniferous		10	
178		47032900	漂白非针叶木碱木浆或硫酸盐木浆 Chemical wood pulp, soda or sulphate, other than dissolving grades, bleached, non-coniferous		10	
179		47041100	未漂白的针叶木亚硫酸盐木浆 Chemical wood pulp, sulphite, other than dissolving grades, unbleached, coniferous		10	
180		47041900	未漂白的非针叶木亚硫酸盐木浆 Chemical wood pulp, sulphite, other than dissolving grades,		10	

			unbleached, non-coniferous			
181		47042100	漂白的针叶木亚硫酸盐木浆 Chemical wood pulp, sulphite, other than dissolving grades, bleached, coniferous		10	
182		47042900	漂白的非针叶木亚硫酸盐木浆 Chemical wood pulp, sulphite, other than dissolving grades, bleached, non-coniferous		10	
183		47050000	半化学木浆 Wood pulp obtained by a combination of mechanical and chemical pulping process (semi-chemical wood pulp)		10	
184		47062000	从回收纸或纸板提取的纤维浆 Pulps of fibers derived from recovered (waste and scrap) paper or paperboard		10	
185		47063000	竹浆 Pulps of bamboo		10	
186		47069100	其他纤维状纤维素机械浆 Other mechanical pulp derived from fibrous cellulosic material		10	
187		47069200	其他纤维状纤维素化学浆 Other chemical pulp derived from fibrous cellulosic material		10	
188		47069300	其他纤维状纤维素半化学浆 Other semi-chemical pulp derived from fibrous cellulosic material		10	
189		72011000	非合金生铁，含磷量小于或等于 0.5% Non-alloy pig iron containing by weight 0.5% or less of phosphorus	20	25	
190		72012000	非合金生铁，含磷量大于 0.5% Non-alloy pig iron containing by weight more than 0.5% of phosphorus	20	25	
191		72015000	合金生铁 Alloy pig iron	20	25	
192		72021100	锰铁,含碳量> 2% Ferro-manganese, containing by weight more than 2% of carbon	20		
193		72021900	锰铁,含碳量≤2 % Ferro-manganese, containing by weight 2% or less of carbon	20		
194		72022100	硅铁,含硅量>55% Ferro-silicon, containing by weight more than 55% of silicon	25		
195		72022900	硅铁,含硅量≤55% Ferro-silicon, containing by weight 55% or less of silicon	25		
196		72023000	硅锰铁 Ferro-silico-manganese	20		
197		72024100	铬铁,含碳量> 4% Ferro-chromium, containing by weight more than 4% of carbon	40	20	

198		72024900	铬铁,含碳量≤4 % Ferro-chromium, containing by weight 4% or less of carbon	40	20	
199		72025000	硅铬铁 Ferro-silico-chromium		20	
200		72026000	镍铁 Ferro-nickel		20	
201		72027000	钼铁 Ferro-molybdenum		20	
202		72028010	钨铁 Ferro-tungsten		20	
203		72028020	硅钨铁 Ferro-silico-tungsten		20	
204		72029100	钛铁及硅钛铁 Ferro-titanium and ferro-silico-titanium		20	
205		72029290	其他钒铁 Other ferro-vanadium		20	
206		72029300	铌铁 Ferro-niobium		20	
207		72029919	其他钕铁硼合金 Other ferro-neodymium-boron alloy		20	
208		72029990	其他铁合金 Other ferro-alloys		20	
209		72031000	直接从铁矿还原的铁产品 Ferrous products obtained by direct reduction of iron ore		25	
210		72039000	其他铁，海绵铁,产品纯度＞99.94% Other ferrous products, spongy ferrous products, iron having a purity of more than 99.94% by weight		25	
211		72041000	铸铁废碎料 Waste and scrap of cast iron	40		
212		72042100	不锈钢废碎料 Waste and scrap of stainless steel	40		
213		72042900	其他合金钢废碎料 Other waste and scrap of alloy steel	40		
214		72043000	镀锡钢铁废碎料 Waste and scrap of tinned iron or steel	40		
215		72044100	机械加工中产生的废料 Waste and scrap of iron and steel produced in mechanical processing	40		
216		72044900	其他钢铁废碎料 Other waste and scrap of iron and steel	40		
217		72045000	供再熔的碎料钢铁锭 Remelting scrap ingots	40		
218	ex	72051000	生铁、镜铁及钢铁颗粒(不带球弧面的棱角形颗粒数量大于80%的棱角钢砂除外) Granules of pig iron, spiegeleisen, iron or steel (other than angular steel grit containing more than 80% of angular granules without spherical arc)		25	
219		72052900	生铁、镜铁及其他钢铁粉末 Powders of pig iron, spiegeleisen, iron or steel		25	
220		72061000	铁及非合金钢锭 Iron and non-alloy steel in		25	

			ingots			
221		72069000	其他初级形状的铁及非合金钢 Iron and non-alloy steel in other primary forms		25	
222		72071100	宽度＜厚度两倍的矩形截面钢坯 ,C<0.25% Steel billet of rectangular cross-section, the width measuring less than twice the thickness, containing by weight less than 0.25% of carbon		25	
223		72071200	其他矩形截面钢坯 ,C,0.25% Other steel billet of rectangular cross-section, containing by weight less than 0.25% of carbon		25	
224		72071900	其他含碳量＜0.25%的钢坯 Other steel billet, containing by weight 0.25% or more of carbon		25	
225		72072000	含碳量≥0.25%的钢坯 Other steel billet, containing by weight less than 0.25% of carbon		25	
226		72131000	带有轧制花纹的热轧盘条 Bars, rods, and coils, hot-rolled, containing rolling patterns		15	
227		72132000	其他易切削钢制热轧盘条 Bars, rods, and coils, hot-rolled, other, of free-cutting steel		15	
228		72139100	直径＜14mm圆截面的其他热轧盘条 Bars, rods, and coils, hot-rolled, other, of circular cross-section measuring less than 14mm in diameter		15	
229		72139900	其他热轧盘条 Bars, rods, and coils, hot-rolled, other		15	
230		72142000	热加工带有轧制花纹的条、杆 Bars and rods, thermal processed, containing rolling patterns		15	
231		72143000	热加工易切削钢的条、杆 Bars and rods, thermal processed, of free-cutting steel		15	
232		72149100	热加工其他矩形截面的条杆 Bars and rods, thermal processed, other, of rectangular cross-section		15	
233		72149900	热加工其他条、杆 Bars and rods, thermal processed, other		15	
234		72151000	冷加工其他易切削钢制条、杆 Bars and rods, cold processed, of free-cutting steel		15	
235		72155000	冷加工或冷成形的其他条、杆 Bars and rods, other, cold-formed or cold-finished		15	
236		72159000	铁及非合金钢的其他条、杆 Other bars and rods of iron or non-alloy steel		15	
237		72181000	不锈钢锭及其他初级形状产品 Stainless steel		15	

			in ingots or other primary forms			
238		72189100	矩形截面的不锈钢半制成品 Semi-finished products of stainless steel, of rectangular cross-section		15	
239		72189900	其他不锈钢半制成品 Semi-finished products of stainless steel, other		15	
240		72191312	厚度在3毫米及以上，但小于4.75毫米的未经酸洗的按重量计含锰量在5.5%以上的铬锰系不锈钢卷板 Ferro-chromium-manganese steel in coils, of a thickness of 3mm or more but less than 4.75mm, not acid pickled, containing by weight no less than 5.5% of manganese		10	
241		72191322	厚度在3毫米及以上，但小于4.75毫米的经酸洗的按重量计含锰量在5.5%以上的铬锰系不锈钢卷板 Ferro-chromium-manganese steel in coils, of a thickness of 3mm or more but less than 4.75mm, acid pickled, containing by weight no less than 5.5% of manganese		10	
242		72191412	厚度小于3毫米的未经酸洗的按重量计含锰量在5.5%以上的铬锰系不锈钢卷板 Ferro-chromium-manganese steel in coils, of a thickness of less than 3mm, not acid pickled, containing by weight no less than 5.5% of manganese		10	
243		72191422	厚度小于3毫米的经酸洗的按重量计含锰量在5.5%以上的铬锰系不锈钢卷板 Ferro-chromium-manganese steel in coils, of a thickness of less than 3mm, acid pickled, containing by weight no less than 5.5% of manganese		10	
244		72241000	合金钢锭及其他初级形状合金钢 Other alloy steel in ingots or other primary forms		15	
245		72249010	单重≥1 0吨的粗铸锻件坯 Raw casting forging stocks, individual piece of a weight of 10t or more		15	
246		72249090	其他合金钢坯 Other alloy steel billets		15	
247		74010000	铜锍、沉积铜（泥铜） Copper mattes, cement copper (precipitated copper)		15	
248		74020000	未精炼铜，电解精炼用的铜阳极 Unrefined copper, copper anodes for electrolytic refining	30	15	
249		74031111	高纯阴极铜（铜含量高于99.9935%） High-purity copper cathodes (containing by weight more than 99.9935% of copper)	30	5	
250		74031119	其他阴极精炼铜 Other refined copper cathodes	30	10	

251		74031190	其他精炼铜的阴极型材 Other refined copper sections of cathodes	30	10	
252		74031200	精炼铜的线锭 Refined copper, wire-bars	30	10	
253		74031300	精炼铜的坯段 refined copper, billets	30	10	
254		74031900	其他未锻轧的精炼铜 Other refined copper, unwrought	30	10	
255		74032100	未锻轧的铜锌合金(黄铜) Copper-zinc base alloys (brass), unwrought	30	5	
256		74032200	未锻轧的铜锡合金(青铜) Copper-tin base alloys (bronze), unwrought	30	5	
257		74032900	未锻轧的其他铜合金 Other copper alloys, unwrought	30	5	
258		74040000	铜废碎料 Copper waste and scrap	30	15	
259		74050000	铜母合金 Master alloys of copper		10	
260		74071000	精炼铜条、杆及型材及异型材 Copper bars, rods, and profiles, of refined copper	30	0	
261		74072100	铜锌合金条、杆及型材及异型材 Copper bars, rods, and profiles, of copper-zinc base alloys	30	0	
262		74072900	其他铜合金条杆、型材及异型材 Copper bars, rods, and profiles, of other copper alloys	30	0	
263		74081100	最大截面尺寸＞6mm的精炼铜丝 Copper wire, of refined copper, of which the maximum cross-sectional dimension exceeds 6mm	30	0	
264		74081900	其它精炼铜丝 Copper wire, of refined copper, other	30	0	
265		74082100	铜锌合金丝 Copper wire, of copper-zinc base alloys	30	0	
266		74082200	铜镍合金丝或铜镍锌合金丝 Copper wire, of copper-nickel base alloys or copper-nickel-zinc base alloys	30	0	
267		74082900	其他铜合金丝 Copper wire, of copper alloys, other	30	0	
268		74091110	含氧量不超过 10PPM的成卷的精炼铜板、片、带 Copper plates, sheets, and strips, of refined copper, in coils, containing oxygen of not more than 10PPM	30	0	
269		74091190	其他成卷的精炼铜板、片、带 Copper plates, sheets, and strips, of refined copper, in coils, other	30	0	
270		74091900	其他精炼铜板、片、带 Copper plates, sheets, and strips, of refined copper, other	30	0	
271		74092100	成卷的铜锌合金板、片、带 Copper plates, sheets, and strips, of copper-zinc base	30	0	

			alloys, in coils			
272		74092900	其他铜锌合金板、片、带 Copper plates, sheets, and strips, of copper-zinc base alloys, other	30	0	
273		74093100	成卷的铜锡合金板、片、带 Copper plates, sheets, and strips, of copper-tin base alloys, in coils	30	0	
274		74093900	其他铜锡合金板、片、带 Copper plates, sheets, and strips, of copper-tin base alloys, other	30	0	
275		74094000	铜镍合金或铜镍锌合金板、片、带 Copper plates, sheets, and strips, of copper-nickel base alloys or copper-nickel-zinc base alloys	30	0	
276		74099000	其他铜合金板、片、带 Copper plates, sheets, and strips, of other copper alloys	30	0	
277		75021010	高纯镍（镍含量大于 99.99%，钴含量不大于 0.005%) High-purity nickel (containing 99.99% or more of nickel by weight, but less than 0.005% of cobalt by weight)	40	5	
278		75021090	未锻轧的非合金镍 Unwrought nickel, not alloyed, other	40	15	
279		75022000	未锻轧镍合金 Unwrought nickel, alloys	40	15	
280		75030000	镍废碎料 Nickel waste and scrap		10	
281		75089010	电镀用镍阳极 Electroplating nickel anodes	40	15	
282		76011010	按重量计含铝量在 99.95%及以上的非合金铝 Aluminum, not alloyed, containing 99.95% or more of aluminum by weight	30	0	
283		76011090	按重量计含铝量在 99.95%以下的非合金铝 Aluminum, not alloyed, containing less than 99.95% of aluminum by weight	30	15	
284		76012000	未锻轧铝合金 Aluminum alloys, unwrought	30	15	
285		76020000	铝废碎料 Aluminum waste and scrap	30	15	
286		76041010	非合金铝条、杆 Aluminum bars and rods, not alloyed	20	15	
287		76041090	非合金铝型材及异型材 Aluminum profiles, not alloyed	20	0	
288		76042100	铝合金制空心异型材 Aluminum alloys hollow profiles	20	0	
289	ex	76042910	截面周长大于等于210毫米的铝合金制条、杆 Aluminum bars and rods , of aluminum alloys, with a cross-sectional perimeter of 210mm or more	20	15	
290	ex	76042910	截面周长小于210毫米的铝合金条杆 Aluminum bars and rods , of aluminum alloys, with a cross-sectional perimeter of less than 210mm	20	5	

291		76042990	铝合金制其他型材及异型材 Aluminum profiles, of aluminum alloys, other	20	0	
292		76051100	最大截面尺寸超过7mm的非合金铝丝 Aluminum wire, of aluminum, not	20	0	
293		76051900	其他非合金铝丝 Aluminum wire, of aluminum, not alloyed, other	20	0	
294		76052100	最大截面尺寸超过7mm的铝合金丝 Aluminum wire, of aluminum alloys, of which the maximum cross-sectional dimension exceeding 7mm	20	0	
295		76052900	其他铝合金丝 Aluminum wire, other	20	0	
296		76061120	厚度在0.3mm及以上，但不超过0.36mm的非合金铝制矩形铝板片带 Aluminum plates, sheets, and strips, rectangular, of aluminum, not alloyed, of a thickness of 0.30mm or more but not exceeding 0.36mm	20	0	
297		76061190	非合金铝制矩形的其他板、片及带 Aluminum plates, sheets, and strips, rectangular, of aluminum, not alloyed, other	20	0	
298		76061220	厚度 <0.28mm的铝合金制矩形铝板片带 Aluminum plates, sheets, and strips, rectangular, of aluminum alloys, of a thickness of less than 0.28mm	20	0	
299		76061230	厚度在0.28mm及以上，但不超过0.35mm的铝合金制矩形铝板片带 Aluminum plates, sheets, and strips, rectangular, of aluminum alloys, of a thickness of 0.28mm or more but not exceeding 0.35mm	20	0	
300		76061250	0.35mm<厚度≤0.4mm的铝合金制矩形铝板片带 Aluminum plates, sheets, and strips, rectangular, of aluminum alloys, of a thickness of more than 0.35mm but not exceeding 0.4mm	20	0	
301		76061290	厚度 >0.4mm的铝合金制矩形铝板片带 Aluminum plates, sheets, and strips, rectangular, of aluminum alloys, of a thickness of more than 0.4mm	20	0	
302		76069100	非合金铝制非矩形的板、片及带 Aluminum plates, sheets, and strips, not rectangular, of aluminum, not alloyed	20	0	
303		76069200	铝合金制非矩形的板、片及带 Aluminum plates, sheets, and strips, not rectangular, of aluminum alloys	20	0	
304		78011000	未锻轧精炼铅 Unwrought refined lead		10	
305		78020000	铅废碎料 Lead waste and scrap		10	

306		79011110	按重量计含锌量在 99.995%及以上的未锻轧锌 Unwrought zinc, containing by weight 99.995% or more of zinc	20	0	
307		79011190	99.99≤含锌量 <99.995%的未锻轧锌 Unwrought zinc, containing by weight 99.99% or more, but less than 99.995% of zinc	20	5	
308		79011200	含锌量＜99.99%的未锻轧锌 Unwrought zinc, containing by weight less than 99.99% of zinc	20	15	
309		79012000	未锻轧锌合金 Unwrought zinc alloys	20	0	
310		79020000	锌废碎料 Zinc waste and scrap		10	
311		80011000	非合金锡 Tin, not alloyed		10	
312		80020000	锡废碎料 Tin waste and scrap		10	
313		81011000	钨粉 Tungsten powders		5	
314		81019400	未锻轧钨 Unwrought tungsten		5	
315		81019700	钨废碎料 Tungsten waste and scrap		15	
316		81021000	钼粉 Molybdenum powders		5	
317		81029400	未锻轧钼 Unwrought molybdenum		5	
318		81029700	钼废碎料 Molybdenum waste and scrap		15	
319		81033000	钽废碎料 Tantalum waste and scrap		10	
320		81041100	按重量计含镁量≥99.8%的未锻轧镁 Unwrought magnesium, containing 99.8% or more of magnesium by weight		10	
321		81041900	其他未锻轧镁 Other unwrought magnesium		10	
322		81042000	镁废碎料 Magnesium waste and scrap		10	
323		81101010	未锻轧锑 Unwrought antimony	20	5	
324		81101020	锑粉末 Antimony powders	20		
325		81102000	锑废碎料 Antimony waste and scrap	20		
326		81110010	未锻轧锰;锰废碎料;粉末 Unwrought manganese, manganese waste and scrap, powders		20	
327		81122100	未锻轧铬、铬粉末 Unwrought chromium, chromium powders		15	
328		81122200	铬废碎料 Chromium waste and scrap		15	
329		81129230	未锻轧铟；铟废碎料；铟粉末 Unwrought indium, indium waste and scrap, indium powders		5	

注①："ex"表示应税商品范围以"商品名称"描述为准,其余以税号为准。

②：出口价格包括海关认可的货物货价、货物运至中华人民共和国境内输出地点装载前的运输及其相关费用、保险费。淡季

当出口价格高于基准价格时，税率计算结果四舍五入保留3位小数。

Note:
① “Ex” means the scope of the product covered by the tariff number is governed by the description in the column of “product name.” Others are governed by the tariff number.
② Export price includes product price, transportation and related expenses and insurance incurred prior to arrival and loading at the export location within the PRC, recognized by the Customs. If export price exceeds base price during off season, the duty rate calculation result should be rounded to three decimal places.

Exhibit 2

Ministry of Commerce of the People's Republic of China

MOFCOM Trade Letter [2009] No. 147

December 29, 2009

2010 年第一批一般贸易稀土出口配额安排表

2010 1st Batch Export Quota Distribution for Rare-Earth Materials in General Trade*

Translator's note: China seems to distinguish between general trade, processing trade, border trade, and aid trade.

序号 No.	公司名称 Company Name	配额数量（吨） Quota (MT)
	合计 **Total**	**16304**
1	中国中钢集团公司 China Sinosteel Corporation	784
2	中国五矿集团公司 China Minmetals Corporation	1182
3	中国有色金属进出口江苏公司 China National Nonferrous Metals Import & Export Jiangsu Corp.	726
4	广东广晟有色金属进出口有限公司 China National Nonferrous Metals Import & Export Guangdong Co., Ltd.	518
5	常熟盛昌稀土冶炼厂 Changshu Shengchang Rare Earth Smeltery	337
6	江苏卓群纳米稀土股份有限公司 Jiangsu GeoQuin Nano Rare Earth Co., Ltd.	248
7	江西金世纪新材料股份有限公司 Jiangxi Golden Century Advanced Materials Co., Ltd.	374
8	内蒙古包钢和发稀土有限公司 Inner Mongolia Hefa Rare Earth Science & Technology Development Co., Ltd.	1504
9	江西南方稀土高技术股份有限公司 Jiangxi South Rare Earth Hi-Tech Co., Ltd.	629
10	赣州晨光稀土新材料有限公司	601

	Ganzhou Chenguang Rare Earth Advanced Material Co., Ltd.	
11	赣州虔东稀土集团股份有限公司 Ganzhou Qiandong Rare Earth Group Co., Ltd.	536
12	有研稀土新材料股份有限公司 Grirem Advanced Materials Co., Ltd.	469
13	益阳鸿源稀土有限责任公司 Yiyang Hongyuan Rare Earth Co., Ltd.	837
14	包头华美稀土高科有限公司 Baotou Huamei Rare-Earth Hi-Tech Co., Ltd.	1659
15	内蒙古包钢稀土(集团)高科技股份有限公司 Inner Mongolia Baotou Steel Rare-Earth (Group) Hi-Tech Co., Ltd.	1350
16	甘肃稀土新材料股份有限公司 Gansu Rare Earch New Materials LLC	1069
17	乐山盛和稀土科技有限公司 Leshan Shenghe Rare Earth Technology Co., Ltd.	1102
18	阜宁稀土实业有限公司 Funing Rare Earth Industrial Co., Ltd.	477
19	山东鹏宇实业股份有限公司 Shandong Pengyu Industrial Co., Ltd.	986
20	赣县红金稀土有限公司 Ganxian Hongjin Rare Earth Co., Ltd.	239
21	徐州金石彭源稀土材料厂 Xuzhou Jinshi Pengyuan Rare Earth Materials Factory	374
22	广东珠江稀土有限公司 Guangdong Zhujiang Rare Earth Co., Ltd.	304

某企业应得配额＝此次下达配额量×〔0.78×（A1+A2）＋0.22×A3〕
A1＝（各企业近三年出口数量÷全国出口总量）×0.9 权重
A2＝（各企业近三年出口金额÷全国出口金额）×0.1 权重
A3＝生产企业 2008 年出口供货量÷各生产企业出口供货总量

A company's quota = total quota x [0.78 x (A1 + A2) + 0.22 x A3]

A1 = (the company's export quantity in the most recent 3 years ÷ entire country's export quantity) x 0.9 weighted average

A2 = (the company's export revenue in the most recent 3 years ÷ entire country's export revenue) x 0.1 weighted average

A3 = the manufacturing company's 2008 export quantity ÷ all manufacturing companies' export quantity

Exhibit 3
Ministry of Commerce of the People's Republic of China

Notice on Application Criteria and Procedures for 2010 Rare-Earth Materials Export Quota

MOFCOM Pub. [2009] No. 94
November 6, 2009

Summary of Key Points

1. This does not apply to foreign-invested enterprises.

2. A manufacturing enterprise must:
   (1) Register with Industrial and Commercial Administrative Department, obtain import and export operational qualification or register as a foreign trading enterprise, and have independent legal personality. Enterprises registered after 2005 must be approved by national supervising department.
   (2) Comply with rare earth industry planning, policy, and management, and have exported either 2,000 MT or more products or have export revenue of RMB 70,000,000 or more in 2008.
   (3) If the conditions set in the subparagraph immediately above are not met, the manufacturing enterprise must have, in the most recent 3 years (2006-2008), an average annual export quantity of 1,500 MT or more, or average annual export revenue of USD 15,000,000 or more (the numbers will be based on Custom's statistics).
   (4) Product quality must meet current national standards, and obtain ISO9000 quality system certification.
   (5) The manufacturing enterprise's rare earth materials must come from rare earth mining enterprises that have mining qualifications as proclaimed by the Ministry of Land and Resources.
   (6) Have environmental protection facilities (including online monitoring facilities) that are compatible with the scale of production, pollutants emission is in compliance with national or local standards, have timely paid emission fees in full in 2008 and 2009 as verified by the environmental protection department at the provincial level or above, have not violated environmental laws, have formulated environmental emergency plan, and have complete and sound supporting facilities.
   (7) Comply with national land management policies and regulations.
   (8) Comply with national laws and regulations and relevant local regulations, lawfully participate in pension, unemployment, medical care, work injury, maternity, and other social insurance, timely pay social insurance premiums in full, and provide proof of the same from local labor and social insurance departments.

(9) Have not violated national laws and regulations.

3. A trading enterprise [note: literal translation would be “circulation enterprise”] must:
   (1) Register with Industrial and Commercial Administrative Department, obtain import and export operational qualification or register as a foreign trading enterprise, and have independent legal personality.
   (2) Have registered capital of RMB 50,000,000 or more, and have, in the most recent 3 years (2006-2008), an average annual export quantity of 1,500 MT or more, or average annual export revenue of USD 15,000,000 or more (the numbers will be based on Custom’s statistics).
   (3) Its export products must come from manufacturing enterprises in compliance with Paragraph 2, Subparagraphs (1), (4)-(9), and it must provide relevant documents on its supply manufacturing enterprises’ such compliance, the related value added tax invoices, and proof of its supply enterprises.
   (4) Comply with national laws and regulations and relevant local regulations, lawfully participate in pension, unemployment, medical care, work injury, maternity, and other social insurance, timely pay social insurance premiums in full, and provide proof of the same from local labor and social insurance departments.
   (5) Obtain ISO9000 quality system certification.
   (6) Have not violated national laws and regulations.

4. In order to concentrate production and decrease the number of export enterprises, the export performance of parents, subsidiaries, and affiliates of companies that are registered after January 1, 2007 will not be recognized.

5. If an enterprise violates laws and regulations or environmental protection policies after receiving the quota, its quota will be withdrawn, suspended, or cancelled once its violation is confirmed.

6. Application and Approval Procedures:
   (1) Local rare earth export enterprises shall submit their applications to provincial level commercial supervising department. The provincial level commercial supervising department will conduct an initial verification under the application criteria set forth above, submit its decision and selected list of qualified enterprises to the Ministry of Commerce (MOFCOM), and copy the same to China Chamber of Commerce of Metals Minerals & Chemicals Importers & Exporters (CCMMC) by November 20, 2009.
   (2) Rare earth export enterprises managed by central government shall submit their application directly to the MOFCOM, and copy the same to CCMMC.
   (3) MOFCOM commissions CCMMC to conduct a review of the provincial level verification. CCMMC shall submit its decision to MOFCOM by November 27, 2009.

(4) MOFCOM will decide and publish the final list of companies based on CCMMC's review decision.

7. Basically, both manufacturing and trading enterprises have to submit supporting documents on every item listed in the criteria.

EXHIBIT 4
Excerpt from the U.S.-China Economic and Security Review Commission (USCC) 2009 Report to Congress, pp. 62-63
available at http://www.uscc.gov/annual_report/2009/annual_report_full_09.pdf

Export Restrictions

Export restrictions or export quotas, especially on energy and raw materials, have two general effects: First, they suppress prices in the domestic market for these goods, which lowers production costs for industries that use the export-restricted materials; and second, these restrictions increase the world price for the raw materials that are affected by limiting the world supply, thereby raising production costs in competing countries.250/

According to the USTR, ''despite China's commitment since its accession to the WTO to eliminate all taxes and charges on exports, including export duties . . . China has continued to impose restrictions on exports of certain raw materials,251/ including quotas, related licensing requirements, and duties, as China's state planners have continued to guide the development of downstream industries.''252/ The USTR's 2009 report on foreign trade barriers concludes that ''China's export restrictions affect U.S. and other foreign producers on a wide range of downstream products such as steel, chemicals, ceramics, semiconductor chips, refrigerants, medical imagery, aircraft, refined petroleum products, fiber optic cables, and catalytic converters, among many others.''253/

In June 2009, the Obama Administration initiated a WTO case against China over export restraints on numerous important raw materials. U.S. officials have been concerned for years about export restraints on raw materials from China and, in cooperation with European and Japanese officials, have held regular bilateral and multilateral discussions with Chinese officials since China joined the WTO, before the WTO's Import Licensing Committee.254/ The USTR reports that these efforts had no effect and that China in fact increased export restraints on raw materials over time.255/ According to the USTR, ''China's measures appear to be part of a troubling industrial policy aimed at providing a substantial competitive advantage for the Chinese industries using these inputs.''256/ Others have reported concerns that China's export restrictions are part of a larger effort to stockpile resources in order to insulate China from sudden fluctuations in global commodities markets and to increase China's ability to influence those markets.257/

China's Restrictions on Exports of Rare Earth Minerals

China appears to be tightening its control over the supply of rare earth elements, valuable minerals that are used prominently in the production of such high-technology goods as flat panel screens and cell phones, and crucial green technologies such as hybrid car batteries and the special magnets used in wind turbines.258/ Rare earth minerals are also critical for many military technologies, including the magnets used in the guidance systems of U.S. military smart bombs like Joint Direct Attack Munitions, and super-alloys (used to make parts for jet aircraft engines).

China accounts for the vast majority—93 percent—of the world's production of rare earth minerals, and for the last three years it has been reducing the amount that can be exported.259/ After a draft policy outlining the tightening of exports for rare earth minerals was

issued in August 2009 by the Ministry of Industry and Information Technology, Zhao Shuanglian, deputy chief of the Inner Mongolia autonomous region, spoke out to quell global concerns. According to Mr. Zhao, rare earth elements are ''the most important resource for Inner Mongolia,'' which contains 75 percent of China's deposits, and by cutting exports and Controlling production, the government wants to ''attract users of rare earths to set up in Inner Mongolia'' to develop manufacturing.260/ China also is taking steps to consolidate its rare earths industry, with the aim of creating a consortium of miners and processors in Inner Mongolia.261/

China's Ministry of Industry and Information Technology says it is limiting production in some mines and closing others completely because some of the rare earths are extracted under dire environmental conditions, but tighter limits on exports of rare earths place foreign manufacturers at a disadvantage compared to the domestic producers, whose access will not be so restricted. There has been no official U.S. government response so far, but a spokeswoman for the U.S. embassy in Beijing questioned the WTO-legality of such restrictions, noting that ''[w]e would be concerned by any WTO member's policies that appear to be inconsistent with its WTO obligations.''262/

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250. Peter Navarro, ''Benchmarking the Advantages Foreign Nations Provide their Manufacturers,'' in Richard McCormack, ed., *Manufacturing a Better Future for America* (Washington, DC: The Alliance for American Manufacturing, 2009), p. 113.
251. China maintains export quotas and, at times, export duties on antimony, bauxite, coke, fluorspar, indium, magnesium carbonate, molybdenum, rare earths, silicon, talc, tin, tungsten, and zinc.
252. U.S. Trade Representative, *2009 National Trade Estimate Report on Foreign Trade Barriers* (Washington, DC: March 29, 2009), p. 97.
253. U.S. Trade Representative, *2009 National Trade Estimate Report on Foreign Trade Barriers* (Washington, DC: March 29, 2009), p. 97.
254. U.S. Trade Representative, *2008 Report to Congress on China's WTO Compliance*(Washington, DC: December 2008), pp. 29–30.
255. U.S. Trade Representative, *2008 Report to Congress on China's WTO Compliance* (Washington, DC: December 2008), pp. 5–6.
256. *USTR News*, ''United States Files WTO Case Against China Over Export Restraints on Raw Materials'' (Washington, DC: U.S. Trade Representative, June 23, 2009).
257. STRATFOR, ''China: Alleged WTO Violations and Commodity Prices'' (Austin, TX: June 24, 2009).
258. The rare earth elements group is comprised of 17 minerals—scandium, yttrium, and the 15 lanthanoids—and they play a crucial role in many advanced technological devices. For more information, see, for example, Gordon B. Haxel, James B. Hedrick, and Greta J. Orris, ''Rare Earth Elements—Critical Resources for High Technology,'' U.S. Geological Survey Fact Sheet 087–02 (Reston, VA: 2002). *http://pubs.usgs.gov/fs/2002/fs087–02/fs087–02.pdf*.
259. Keith Bradsher, ''China Tightens Grip on Rare Minerals,'' *New York Times*, September 1, 2009.
260. Xiao Yu and Eugene Tang, ''China Considers Rare-Earth Reserve in Inner Mongolia,'' Bloomberg, September 2, 2009.

261. Chuin-Wei Yap, ‘‘China Plays Down Rare Earth Fears,’’ *Wall Street Journal*, September 2, 2009.
262. Keith Bradsher, ‘‘Backpedaling, China Eases Proposal to Ban Exports of Some Vital Minerals,’’ *New York Times*, September 3, 2009. *http://www.nytimes.com/2009/09/04/business/global/04minerals.html*.