Critical Minerals Export Ban is China Tit-for-Tat with the United States

written by Jack Lifton | July 7, 2023

“**The issue here is one of understanding.** The Chinese didn’t stop exporting the materials. What the Chinese said, and what they are going to do is to restrict the exports, not prohibit them. This means that they have adopted a policy of tit-for-tat with the United States. We recently have restricted the export to China of very high-tech machinery to make the latest and greatest chips. Simultaneously, we have prohibited our own companies from buying Chinese-manufactured chips for use in their products without permission from our State or Commerce Department in the form of a ruling that such importation and/or use does not impact “national security.”

The Chinese are saying, OK, so if those are the rules of the game then, now, we’re playing also by those rules. We’re going to start playing by picking two materials that you don’t have available domestically in end-user form, the metalloid germanium, and the metal gallium. These two materials, are in fact, critical to the manufacturing of the chips, access to which you wish to prohibit China from getting.

Now the interesting thing is here the journalists have got this all wrong – they all call these metals, “rare earths”, and they couldn’t be more wrong, It’s frightening to think that they don’t understand what rare earths are, considering how important rare earths are to us in a different industrial context of use.

Germanium is a member of the silicon family. Gallium is chemically related to aluminum. Neither one of these are rare

earths, and if I were teaching a course in general chemistry, I would fail anyone who said something like that. Alright, here's the point. The United States Department of Defense actually has stockpiled germanium. That should tell you something. It's really critical. It's what I call a critical-critical mineral. OK, but not, for some reason that I don't understand, gallium. Both of those, as I recall from my misspent youth, were produced in the United States and we were self-sufficient.

We have domestic American sources of both of these materials that come actually as byproducts of more common materials. Germanium is a byproduct of zinc and silver mining, and can also be obtained from coal. Gallium is a byproduct of aluminum production. Both of those were once produced and in abundance in the United States. I've talked about germanium and gallium, because we used to produce so much of the metals of which they're a byproduct, that we supplied our gallium needs and our germanium needs out of processing those materials. America stopped producing end-user forms of both germanium and gallium, because the Chinese got into the processing of these materials in a big way and pretty soon it became obvious that it was much cheaper to buy them from China.

Now keep in mind that when the Chinese were setting up to produce both of these metals, they actually had little or no use for them. They were strictly a service operation 25 years ago. I doubt that the Chinese had ever produced a computer chip 25 years ago. There is one other use they might have had back then for gallium. It, gallium, is used in making atomic bombs, so perhaps they were doing it for that, but we simply stopped producing fine gallium chemical forms here, because, we didn't have to. You could get cheaper from China.

Now, "all of a sudden," The Chinese, who are very aware of critical materials and have been organizing themselves to be

self-sufficient and secure in their supplies of all of these materials that underlie our modern technological society, are supposed to be “weaponizing” them for use against us. This is saying that we’re so stupid and lazy that we didn’t notice the dependence of our technological society on certain critical materials and take action to secure sufficient supplies of them for our domestic industries. Of course, this is exactly what happened.

I’m sure, once we started with the arguments about computer chips, that the Chinese could be using them to spy on us, and when we started saying this publicly and embarrassing the Chinese and insulting them, they decided that they had no recourse but to take aggressive action in the marketplace. They may, in fact, be doing these things. I’m not saying that they’re innocent. I’m just saying that somehow or other. Our government doesn’t seem to understand that cultures outside of the American ethos may be different from those on the American ethos. For example, you keep telling the second largest economy in the world and, perhaps, the proudest people in the world of their multi 1000 year old heritage of “civilization” that you’re liars and you’re cheats. You’re trying to screw us, blah blah, blah. Pretty soon they get annoyed.

Fast forward to today. The U.S. Secretary of the Treasury, Mrs. Yellen, is in Beijing today. OK. And all the reporters, the same ones who think germanium and gallium are rare earths, they’re saying, well, she’s going to straighten things out with the Chinese. Do you know what I think? I’ll bet that when she landed and went to see the first Chinese officials, they started telling her, Hey, what the hell does your country think they’re doing now? You want to discuss economics with us while you’re insulting us. You call us pariahs, you call our great leader a dictator.

OK. This problem with germanium and gallium is not going to go away anytime soon until American diplomats get diplomatic and so-called American experts in Washington figure out that we should have never gotten out of the germanium and gallium "processing" business in the United States. We can go back to secure self-sufficiency.

I have been asked frequently in the last few days how long it would take for the USA to regain self-sufficiency in the production of ultra-high-purity end-user forms of germanium and gallium. Would it take decades, the youthful reporters ask breathlessly? I'll make you a bet we could be back into producing gallium and germanium in the United States in a useful form for electronics in six months to a year. I mean, this is not, excuse the expression, rocket science. We developed these technologies. This is among the very first things I ever did in my working life, the ultra-purification of metals for electronics. I knew how to process gallium and germanium 60 years ago(!), and there's been a lot of work to improve and commercialize processes since then. We have to stop saying "Oh my God. The sky is falling," and just start doing what we should have been doing all this time. That is my commentary on this subject…" — *Excerpt from an interview with the Critical Minerals Institute's Co-Chairman, Jack Lifton*