

Supply chains

Japan warns over threat from China's chip material export controls

Officials and executives say gallium rules will upset supply chains for chips and vehicle batteries



Japanese companies are the world's largest consumers of gallium, germanium and graphite © STR/AFP/Getty Images

Harry Dempsey in Tokyo YESTERDAY

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Japanese officials and executives say China's escalation of export controls on semiconductor raw materials is threatening global electronics supply chains.

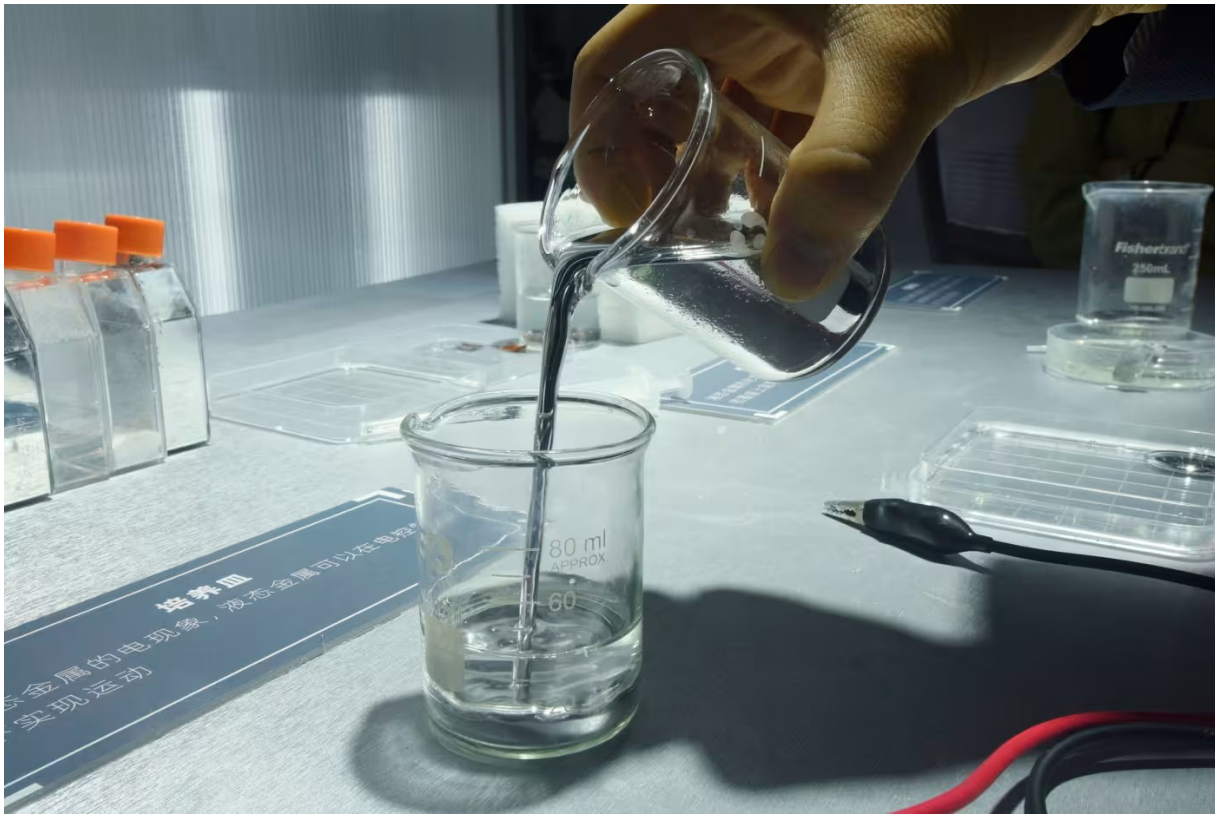
Beijing [tightened export controls](#) on gallium, germanium, antimony and so-called super-hard materials in December by banning their export to the US "in principle" because they have dual uses in civilian and military technology.

[China](#) had already been throttling supplies to Japan, a US ally, for 18 months.

Officials in Tokyo are concerned that the latest rules, combined with a new extraterritorial export control regime introduced by Beijing that bans exports of gallium-containing goods to specified military users, will require a vast number of Japanese companies' exports to the US to be reported to Chinese authorities.

For example, Japanese producers of motors for Tesla cars, gallium arsenide for Broadcom's optical communication lasers or semiconductors for Apple's iPhones may need to gain an export licence from Beijing.

Japanese companies are the world's largest consumer of the 3Gs — gallium, germanium and graphite — that are used in critical electronic and automobile parts such as motors, chips and batteries.



Executives said that compliance with Beijing's export rules would be almost impossible because gallium cannot be traced through the supply chain to know its ultimate user © FeatureChina/AP

Gallium is essential to high-frequency radar technologies, 5G communications and power electronics. Its importance is set to grow as advanced power semiconductors are on the cusp of shifting to using the material instead of silicon. China controls 98 per cent of global supply.

Japan's imports of gallium from China have already been hit by the earlier curbs, falling 85 per cent in the year after Beijing introduced export [restrictions in August 2023](#), according to Japanese official statistics.

China tightened export curbs this month [on a further five critical minerals](#), including tungsten and indium, after US President Donald Trump imposed additional 10 per cent tariffs on Chinese goods. Officials say the tungsten restrictions are already causing issues for Japanese companies.

A Japanese government official said the December round of Chinese measures amounted to “some sort of declaration of economic war against the rest of the world”.

The re-export controls meant China was “not only aiming at the US”, the official said, describing Beijing's measures as “completely outside the previous global norms of

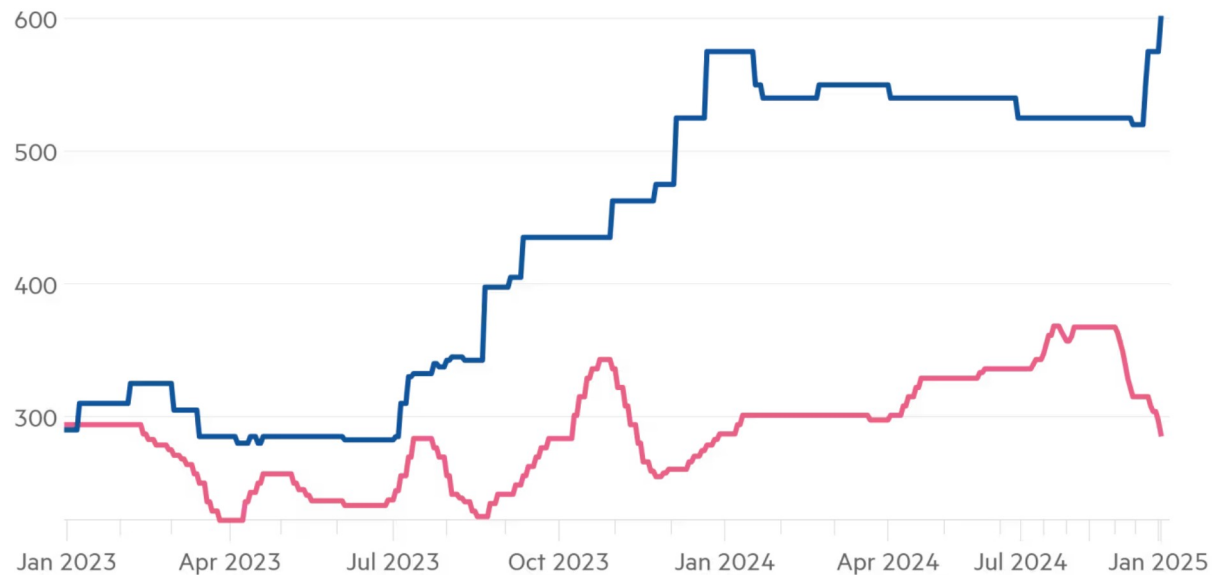
implementing national security-based export controls”.

Japanese officials and company executives were concerned by China's lack of clarity over how much gallium a product would be allowed to contain without falling under the scope of the new rules.

Gallium prices get cheaper in China but soar elsewhere

\$ per kg

— Europe — China



Source: Argus

Executives argued that compliance with Beijing's rules would be almost impossible because gallium cannot be traced through the supply chain to know its ultimate user.

“Global [supply chains](#) are so meshed that the gallium will have to go into the US at some point. This is the big problem,” said one gallium user based outside of Japan.

Some makers of products containing gallium said they intended to avoid providing information to secure export licences from Beijing because the end use was either too difficult to grasp or confidential.

They planned to rely on intermediate traders to source material and secure licences, as well as stockpiles lasting months, they said.

China's Ministry of Commerce said in January that it would “fully refer to international practices” on export controls and the country was “willing to strengthen dialogue and co-operation . . . to maintain the stability of global industrial and supply chains”.

Yang Jie, a trade lawyer at Shanghai-based Hui Ye Law Firm, said that how strictly Beijing would enforce compliance with its export controls “remains uncertain” but would probably depend on diplomatic relations with the US.

China's tougher export controls were introduced a day after Washington imposed a ban on selling 24 types of chipmaking tools to China, aimed at preventing it from developing advanced semiconductors.

Tokyo introduced its own version late last month, requiring permission for exports of 21 items related to advanced semiconductors and quantum computing.

Gallium prices outside China have surged 23 per cent to \$640 per kilogramme since the start of December and have more than doubled since July 2023, according to Argus, a pricing reporting agency.

Additional reporting by Leslie Hook in London

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