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**VIA FEDERAL E-RULEMAKING PORTAL**  
**([WWW.REGULATIONS.GOV](http://WWW.REGULATIONS.GOV))**

Eileen Albanese, Director  
Office of National Security and Technology Transfer Controls  
Bureau of Industry and Security  
U.S. Department of Commerce  
1401 Constitution Avenue, NW  
Washington, DC 20230

**Re: Interim Final Rule Entitled “Implementation of Additional Export Controls: Certain Advanced Computing and Semiconductor Manufacturing Items; Supercomputer and Semiconductor End Use; Entity List Modification”**

**87 Fed. Reg. 62186, 62215, (Oct. 13, 2022); 87 Fed. Reg. 74966 (Dec. 7, 2022)**  
**BIS-2022-0025 (RIN 0694-AI94)**

Dear Ms. Albanese,

Momentive Performance Materials Quartz, Inc. (“Momentive Technologies”) is pleased to have the opportunity to provide comments on the U.S. Department of Commerce, Bureau of Industry and Security (“BIS”) October 7, 2022 Interim Final Rule implementing new export controls on China’s advanced computing and semiconductor manufacturing sectors.

The Interim Final Rule adopts new controls on exports of U.S. goods, technology and services that could support China’s development and production of advanced integrated circuit (“IC”) and supercomputing technologies, including for military applications. We have observed, however, that parts of the rule have had far broader impacts on purely commercial semiconductor supply chains that are far removed from the stated rationales for the rule.

Momentive Technologies produces high purity quartz rods, tubes, and other shapes used in early stages of semiconductor manufacturing. Our global business is directly impacted by the Interim Final Rule. In our view, certain aspects of the Interim Final Rule are not appropriately tailored to accomplish their stated objectives and impose undue harm to U.S. suppliers without advancing U.S. national security and foreign policy interests. Our comments address these potentially unintended effects of the Interim Final Rule and, in particular, the effects of the semiconductor manufacturing end use controls at EAR Section 744.23.

**I. SUMMARY COMMENT AND RECOMMENDATIONS**

EAR Section 744.23(a)(1)(v) and (a)(2)(v) establish a blanket prohibition on exports, reexports, and transfers (in-country) of “all items subject to the EAR” if there is knowledge that the items are destined for end use in the “development” or “production” in China of semiconductor test, inspection, or production equipment controlled in a Group 3B ECCN. License applications for transactions implicating this rule are subject to a presumption of denial.

This part of the Interim Final Rule goes far beyond targeting China's production of advanced integrated circuits and supercomputers. It broadly excludes U.S. producers from large parts of the global semiconductor production supply chains – an effect that is further exacerbated by the U.S. implementing the rule without usual multilateral support. Consequently, U.S. producers of even basic EAR99 raw materials are now losing long-held supply positions to non-U.S. and Chinese producers for those materials. As it is currently implemented, the rule:

- (a) is not tailored to achieve its stated policy objectives,
- (b) is internally inconsistent with other provisions of the EAR, and
- (c) inflicts unnecessary harm to U.S. industry and global semiconductor supply chains without countervailing or commensurate benefits to U.S. national security or foreign policy objectives.

For these reasons, as explained more fully below, we respectfully submit that BIS should revise EAR Section 744.23 in two ways:

- (1) Narrow the scope of EAR Section 744.23(a)(1)(v)/(2)(v) to apply not to “all items subject to the EAR,” but rather to specific controlled equipment (including their specially designed parts and components) and technology listed on the Commerce Control List; and
- (2) Replace the current one-size-fits-all presumption of denial for all license requests (under Section 744.23(d)) with a review policy that accounts for the specific items involved and their potential for direct use in sensitive or advanced semiconductor manufacturing.

## **II. EXPLANATION AND SUPPORTING COMMENTS**

1. *Section 744.23(a)(1)(v)/(2)(v) is overbroad and is not tailored to achieve its regulatory objectives.*

In the Interim Final Rule, BIS stated repeatedly that the rule was intended to address China's use of advanced semiconductor and supercomputing technologies in military, Weapons of Mass Destruction (“WMD”), intelligence, and surveillance applications. With respect to the controls targeting China's semiconductor manufacturing capabilities in particular BIS stated as follows:

The types of semiconductor manufacturing items controlled in this rule under new item-based and end-use-based controls produce advanced integrated circuits that can be used in the “development,” “production,” or “use” of such military items with WMD application. In particular, the ability to produce indigenously within China these types of advanced ICs (packaged or unpackaged) would be contrary to U.S. national security and foreign policy interests.<sup>1</sup>

The Interim Final Rule has impaired China's ability to develop and produce advanced ICs and semiconductor products. However, the end use controls in Section 744.23(a)(1)(v)/(2)(v) go far beyond this by prohibiting exports of even EAR99 items to China when used in basic semiconductor development and production applications. This rule treats equally transactions involving specially designed components of sensitive 3B001 MOCVD equipment and those involving EAR99 raw materials (e.g., stainless steel) that could be incorporated into semiconductor production equipment that itself would not require a license for export to China (under CCL-based controls).

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<sup>1</sup> 87 Fed. Reg. 62187.

Momentive Technologies and other U.S. suppliers of raw materials used in semiconductor manufacturing are adversely affected by these controls. Their broad application is unbalanced and inequitable to companies like Momentive Technologies that supply raw materials used in early stages of semiconductor manufacturing, at the beginning of the semiconductor supply chain.

We produce high-purity fused quartz rods, tubes, ingots, and boules, which are basic raw materials used in a variety of applications requiring high temperature and chemical resistivity. Momentive Technologies' customers may fabricate quartz rods and tubes for use in diffusion ovens for semiconductor wafer production, or shape quartz ingot to make trays and vessels for chemical cleaning baths for silicon wafers. These applications can involve Group 3B ECCN equipment and are thus potentially subject to the semiconductor manufacturing end use restriction in Section 744.23(a)(1)(v)/(2)(v). This rule takes no account of the fact that quartz is an EAR99 raw material, if the ultimate end use is in Group 3B ECCN equipment in China. Moreover, a plain reading of the rule provides that it covers even shipments to quartz fabricators located in third countries if some of their products are exported to China.

Section 744.23(a)(1)(v)/(2)(v) is thus overbroad because it imposes the same licensing requirement – and presumption of denial on license applications – for advanced, controlled semiconductor production items as it does to basic EAR99 raw materials. Clearly, the objectives of the Interim Final Rule are achieved through restrictions on items that more directly and proximately contribute to China's ability to produce advanced ICs, supercomputers, and associated equipment. EAR99 raw materials are too far removed from these applications to have any real impact on China's advancement in those critical areas.

2. *Controlling EAR99 materials for use in China's semiconductor industry unnecessarily harms early stages of semiconductor supply chains that feed a wide range of commercial applications.*

Section 744.23(a)(1)(v)/(2)(v) does not distinguish between suppliers at different stages of the semiconductor and IC supply chains. It treats basic material suppliers equally to advanced IC suppliers, subjecting all to an effective ban on exports to China when for use in Group 3B ECCN equipment. This approach not only fails to address the specific objectives of the regulations, as described above, but also harms semiconductor supply chains at early stages, long before products are committed to sensitive applications. Effectively, all China semiconductor industry participants are treated as presenting the same level of national security or foreign policy risk, which does not reflect the reality of these supply chains.

Momentive Technologies echoes concerns raised in Applied Materials' October 9, 2022 comment on the Interim Final Rule that Section 744.23 damages global supply chains that rely in part on producers in China, including for parts and components of semiconductor production equipment for use outside of China.

Momentive Technologies' quartz materials are fabricated for use in a variety of equipment the preponderance of which is employed in early stages of processing raw silicon wafers. This precedes dicing, packaging and mounting stages that commit the wafers to specific end uses. Moreover, initial processing steps for basic silicon wafers can involve semiconductor production equipment and processes employed for solely commercial applications, such as photovoltaic cells and battery technologies.

The Interim Final Rule's restriction on exports and reexports of all items "subject to the EAR" to China excludes U.S. producers and products from early stages of semiconductor supply chains that feed a wide variety of commercial and civilian products. Our proposed revisions to Section 744.23(a)(1)(v)/(2)(v) and the license review policy at Section 744.23(d) would better tailor these

controls to semiconductor products and capabilities that present actual national security concerns, while reducing disruption to global semiconductor supply chains.

3. *The Interim Final Rule and the semiconductor manufacturing end use controls at Section 744.23(a)(1)(v)/(2)(v) disproportionately harm U.S. producers.*

The Interim Final Rule and the semiconductor manufacturing end use controls at Section 744.23(a)(1)(v)/(2)(v) have resulted in the exclusion of U.S.-produced goods from global semiconductor supply chains that involve China. There are a number of reasons for this, each impacting U.S. suppliers' critical access to these markets.

First, the Interim Final Rule is extraordinarily complex. When applied to already complex global semiconductor supply chains, the burdens on U.S. companies to comply are overwhelming. They are even more so for non-U.S. companies sourcing from U.S. suppliers, who must now contend with the possibility of being subject to the rules under the *de minimis* rules, multiple new foreign direct product rules, and semiconductor manufacturing end use, among others. Momentive Technologies has witnessed firsthand the impact the Interim Final Rule has had on U.S. participation in these markets, having received warnings from non-U.S. customers that they can no longer purchase U.S.-produced goods due to the Interim Final Rule and its perceived compliance burdens.

Second, the lack of multilateral engagement and roll-out of the Interim Final Rule has resulted in an unlevel playing field for U.S. suppliers to the worldwide semiconductor industry. We echo concerns raised in comments submitted to BIS by the Semiconductor Industry Association about the need for multilateral implementation of the Interim Final Rule. Excluding U.S.-produced quartz and other EAR99 materials from global semiconductor supply chains when the same rules have not been implemented by even our closest allies unfairly prejudices U.S. producers and has left gaping opportunities for non-U.S. companies to backfill those supplies.

Third, non-U.S. suppliers are actively replacing U.S. suppliers in semiconductor supply chains. Quartz, like many other basic EAR99 materials, is readily available from non-U.S. producers. As a result, semiconductor manufacturing supply chains at all levels, both in and outside of China, are seeking out non-U.S. goods to avoid U.S. export control laws. Perhaps more importantly, the Interim Final Rule has given a significant boost to China's own materials suppliers, including Pacific Quartz, which was already a mature and growing domestic supplier to the country's semiconductor industry.

The practical effect of the semiconductor manufacturing end use controls at Section 744.23(a)(1)(v)/(2)(v) is that our non-U.S. and China-based competitors that supply raw materials to the semiconductor industry are now filling the void left by U.S. producers that are no longer able to supply these markets or are being intentionally designed out of semiconductor products. This has strengthened non-U.S. and China-based industry at the expense of U.S.-based companies that would otherwise supply these markets.

4. *Section 744.23(a)(1)(v)/(2)(v) is inconsistent with the controls that apply to certain Group 3B ECCN equipment.*

Momentive technologies has been informed by BIS that, consistent with the EAR's definition of "production," Section 744.23(a)(1)(v)/(2)(v) applies to exports, reexports, and transfers to or within China of goods for *incorporation into* Group 3B ECCN equipment. This means that the rule broadly restricts such transactions that involve consumable and replacement parts and components for incorporation into Group 3B ECCN equipment located in China. The "incorporation into" end use is expressly listed in other provisions of Section 744.23, but not in Section 744.23(a)(1)(v)/(2)(v). We recommend BIS to address this specifically in its revision to Section 744.23 (e.g., as a note) or in published guidance (e.g., FAQs).

This interpretation of the semiconductor end use control underscores an apparent inconsistency in the EAR created by the rule. Under the current regulations, 3B991 and 3B992 equipment are controlled only for antiterrorism reasons and therefore do not require a license for export to China under CCL-based controls. However, Section 744.23(a)(1)(v)/(2)(v) requires a license (reviewed under a presumption of denial) for exports, reexports, and transfers (in-country) to or within China of EAR99 items and items controlled for Anti-Terrorism reasons only for *incorporation into* 3B991 and 3B992 equipment. So, in some circumstances, there is no license required to export certain semiconductor production equipment to China, but exports of a replacement part for that equipment is effectively prohibited.

5. *Section 744.23(a)(1)(v)/(2)(v) could impose unintended licensing requirements on transactions that are early in the semiconductor supply chain and involve products not subject to the EAR.*

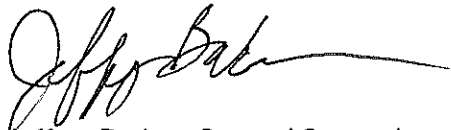
As written, the semiconductor end use controls at Section 744.23(a)(1)(v)/(2)(v) could potentially apply to shipment of EAR99 raw materials that are subject to EAR to non-U.S. fabricators of parts for Group 3B ECCN equipment, if the non-U.S. fabricator intends to export at least one of its products – which are not subject to the EAR – to China. In this case, the supplier of the U.S. origin EAR99 material could have knowledge that the material is ultimately intended for end use in China for incorporation into Group 3B ECCN equipment, even though its supply of raw material is far removed from the export to China. The rule does not expressly exclude this scenario from its scope, and therefore may impose unintended licensing requirements. We recommend BIS to address these circumstances in its revision to the rule or in its published guidance.

### **III. CONCLUSIONS**

The semiconductor manufacturing end use controls at EAR Section 744.23(a)(1)(v)/(2)(v) extend what are otherwise a precise set of rules targeting sensitive semiconductor items destined to China, to broadly prohibit exports of basic EAR99 materials with wide ranging applications in semiconductor manufacturing. As explained above, this rule and its associated licensing policy go far beyond the national security and policy objectives underpinning the broader Interim Final Rule, and unnecessarily exclude U.S. companies and products from important supply chains for products with no sensitive application. We therefore strongly support limiting the scope of this rule (as proposed above) to only those equipment, technology, and software that have direct and proximate effects on China's ability to develop and produce critical and advanced semiconductor products.

Momentive Technologies appreciates the opportunity to provide comments on the Interim Final Rule and its related impact to global semiconductor supply chains. We would be pleased to discuss any aspect of these comments with BIS and to provide any further information to help adapt the current regulations to better serve the regulatory objectives and mitigate harm to U.S. suppliers.

Sincerely,



Jeffrey Barlow, General Counsel  
Momentive Performance Materials Quartz, Inc.