

Submission of the  
**Semiconductor Industry Association**  
on  
Significant New Use Rules on Certain Chemical Substances

83 Fed. Reg. 52,179 (October 16, 2018)  
EPA Docket # EPA-HQ-OPPT-2017-0575;

Submitted November 15, 2018

The Semiconductor Industry Association (SIA) appreciates the opportunity to comment on the proposal by the U.S. Environmental Protection Agency (EPA) on “Significant New Use Rules on Certain Chemical Substances.” 83 Fed. Reg. 52,179 (October 16, 2018).

SIA is the trade association representing leading U.S. companies engaged in the design and manufacture of semiconductors. Semiconductors are the fundamental enabling technology of modern electronics that has transformed virtually all aspects of our economy, ranging from information technology, telecommunications, health care, transportation, energy, and national defense. The U.S. is the global leader in the semiconductor industry, and continued U.S. leadership in semiconductor technology is essential to America’s continued global economic leadership. More information about SIA and the semiconductor industry is available at [www.semiconductors.org](http://www.semiconductors.org).

SIA has a strong interest in the balanced regulation of chemical substances because the highly complex process of manufacturing advanced semiconductors requires the use of specialized chemicals that possess unique chemical and physical attributes. The semiconductor industry uses chemicals in highly controlled manufacturing tools that are designed to minimize exposure to workers and control releases to the environment, and the continued ability to use new chemicals in this manner is essential to the pursuit of innovation that is required in the competitive environment of the semiconductor industry.

SIA’s comments on this proposal focus on the following two points:

- EPA’s approach to requiring SNURs for new uses of chemicals subject to PMNs – SIA supports EPA’s approach to requiring the use of SNURs for chemicals that are subject to premanufacture notices (PMNs) where EPA has determined that these substances are “not likely to present an unreasonable risk” under the conditions of use described in the PMNs. SIA believes this is an appropriate approach and should be applied to other chemical substances beyond those addressed in this proposed rule when changes in the conditions of use could increase exposures or releases of a substance that might present concerns.
- SNURs without chemical CAS Numbers – SIA is concerned about EPA proposing significant new use rules (SNURs) without utilizing CAS Numbers. In the absence of CAS Numbers, SIA member companies and others in the regulated community are unable to ensure compliance with the regulations.

1. Requiring SNURs for Chemicals Subject to PMNs

SIA supports EPA’s approach in this proposal to requiring the use of SNURs for new uses of chemicals that are subject to premanufacture notices (PMNs) where EPA has determined that these substances are “not likely to present an unreasonable risk” under the conditions of use

described in the PMNs. As discussed below, we believe that the conditions of use of chemicals in a semiconductor fab will regularly result in a finding that the chemicals are “not likely to present an unreasonable risk” and EPA should issue SNURs to address other uses in which the conditions of use would increase the opportunities for human exposures and/or environmental releases that could present potential risks which should be evaluated by EPA.

Advanced semiconductors may contain billions of transistors on a layer of silicon the size of a square centimeter, so manufacturing must be rigorously controlled and conducted with great precision to achieve features at the nanoscale. The production of semiconductors is reliant on the use of chemical formulations in specialized manufacturing tools that clean, dope, deposit, pattern, and etch integrated circuits with line widths that may be only 10 nanometers or less in width. (As a point of reference, a water molecule is roughly 0.5 nanometers in diameter.) Thus, semiconductor manufacturing requires a highly precise and exacting technology that is entirely dependent on the use of very precise chemical formulations in highly specialized fully or partially enclosed manufacturing tools, which by their very design ensure that opportunities for human exposures are minimized.

The fabrication of semiconductors is conducted in specialized buildings known as “fabs” that involve the use of highly controlled “cleanrooms” that involve a hierarchy of design features that isolate workers and wafers from chemicals. The fab cleanroom design approach protects manufacturing personnel, and is also critical to semiconductor wafer product quality. Semiconductor fabrication involves a sequence of hundreds of additive, subtractive, photolithography, and cleaning steps that is accomplished by shuttling wafers between specialized manufacturing tools within which the individual unit operations are conducted on the wafer. Regardless of the level of sophistication of the factory, equipment systems operate with intrinsic controls that minimize or eliminate chemical liquid or vapor exposure potential during normal equipment operations. Processes and equipment are designed to minimize human exposure and control releases of chemicals to the environment.

Given the manner in which manufacturing processes are designed and conducted in a semiconductor fab, we believe that the conditions of use of new chemical substances undergoing TSCA Section 5 review for uses in this context will likely result in a determination of “not likely to present an unreasonable risk.” SIA believes this approach to reaching “not likely to present unreasonable risk” determinations under the amendments to Section 5 of TSCA should be considered for future new chemical substance notices (PMNs) and significant new use notices (SNUNs) submitted for uses in the semiconductor industry. Specifically, no further requirements or restrictions on the notification submitter for substance should be necessary, and SNURs should be used in such instances to ensure EPA receives notice prior to the commencement of any new uses that would modify the conditions of use described in the PMNs and which could result in “changes in the type or form of exposure to the chemical substances and/or increased exposures to the chemical substances and/or changes in the reasonably anticipated manner and methods of manufacturing, processing, distribution in commerce, and disposal of the chemical substances.”

To the extent that EPA declines to designate chemicals used in production of semiconductors as “not likely to present an unreasonable risk” following premanufacture review, SIA encourages the Agency before issuing the follow-up SNUR to consider carefully whether the substance itself has exhibited toxicity to human health or environmental species sufficient to justify the burden imposed on regulated entities by a SNUR (particularly given the recent increase in fees for significant new use notices).

## 2. Issuance of SNURs without CAS Numbers

SIA is concerned about EPA proposing these SNURs without using CAS Numbers and specific chemical identities to identify the regulated substances. The absence of CAS Numbers makes it significantly more challenging for SIA member companies and others in the regulated community to ensure compliance with the regulations.

SIA member companies use chemical substances in their manufacturing processes, and they also import or purchase domestically semiconductor manufacturing equipment (“tools”), parts, fab infrastructure equipment, and ancillary equipment that may contain regulated substances. It is a complicated endeavor under the best of circumstances to track the presence of regulated chemicals in both manufacturing processes and fab equipment and related articles, but this task is made significantly more complex by the absence of CAS Numbers. Suppliers to our industry do not typically disclose all chemicals contained in their products, and the ability of SIA member companies to work with their suppliers in identifying regulated chemical substances is hindered when EPA does not identify regulated chemicals by specific CAS Numbers. The risk of non-compliance to processors and downstream users of substances is increased considerably by the use of only generic names to identify the substances in SNURs.

SIA requests that EPA identify regulated chemicals by specific CAS Numbers as a means of facilitating compliance by regulated entities. In addition, SIA requests that EPA issue letters to PMN submitters prior to finalizing review of the PMN substance notifying the PMN submitters of the Agency’s intent to issue a SNUR for uses not covered by the PMN that may increase exposure to the PMN substance. These letters should also request that the PMN submitters send copies of the letter to entities that purchase the PMN substance from the PMN submitter. This will ensure that downstream users and processors are aware that the Agency intends to issue a SNUR to address uses not covered by the PMN.

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SIA appreciates the opportunity to comment on this proposal. For more information, please contact David Isaacs at 202-446-1709 or [disaacs@semiconductors.org](mailto:disaacs@semiconductors.org).