

## 2017 Top Markets Report **Semiconductors and Semiconductor Manufacturing Equipment** Sector Snapshot

### Information Technology Agreement Expansion

Over 50 World Trade Organization (WTO) members in December 2015 signed onto an expansion of the WTO Information Technology Agreement (ITA Expansion). The signatories agreed to phase out their tariffs to zero on 201 ICT products beginning in July 2016. The ITA expansion increased the scope of products covered by the original 1997 Agreement and included semiconductors, semiconductor manufacturing equipment, and other semiconductor related products.

The signatories listed in **Table 1** represent approximately 90 percent of world trade in the products covered by the expanded Agreement.

Table 1: WTO Information Technology Agreement Expansion Signatories As of June 2017					
Albania	Australia	Canada	<b>China</b>	Columbia	Costa Rica
<b>European Union (28 Members)</b>	Guatemala	Hong Kong, China	Iceland	Israel	<b>Japan</b>
<b>Korea, South</b>	Malaysia	Mauritius	Montenegro	New Zealand	Norway
Philippines	Singapore	Switzerland/ Liechtenstein	<b>Chinese Taipei (Taiwan)</b>	Thailand	United States

**Bold = 2016 Top Markets for Semiconductors and Related Equipment**

Source: 20 Years of the Information Technology Agreement, WTO

The ITA Expansion increased the coverage of the original 1997 Information Technology Agreement to include new technology products, including multi-component integrated circuits (MCOs). The ITA Expansion also clarifies product coverage issues from the original Agreement due to updates to the Harmonized System (HS) Tariff codes since 1997, including the introduction of HS 8486 for semiconductor (and flat panel display) manufacturing equipment, and the addition of Multi-Chip Package (MCP) integrated circuits to the HS code for integrated circuit semiconductors (HS 8542) in 2007.

#### Semiconductor-Related Products in the ITA Expansion

A link to the Ministerial Declaration for the Expansion of the WTO Information Technology Agreement, which includes the list of 201 covered product categories, can be found [here](#). However, for many semiconductor related products, the official HS description does not provide clarity as to the scope of the covered items. **Table 2** and **Table 3** list semiconductor-related products covered by the ITA Expansion to aid in identifying products eligible for tariff elimination.

Table 2: Semiconductor Related Products in Attachment A of the WTO ITA Expansion				
*Partially covered HS sub headings identified by the symbol "ex."				
"Item number" is from the full WTO ITA expansion list.				
Item	HS 2007	Ex*	Description	Semiconductor-Related Product (For Illustrative Purposes Only)
002	370130		Other plates and film, with any side exceeding 255 mm	Photoblanks

<b>003</b>	370199	Other	Photoblanks
<b>004</b>	370590	Other	Photomasks and Reticles
<b>005</b>	370790	Other	Photoresist
<b>007</b>	841459	ex Fans of a kind used solely or principally for cooling microprocessors, telecommunication apparatus, automatic data processing machines or units of automatic data processing machines	Fans of a kind used solely or principally for cooling microprocessors
<b>008</b>	841950	ex Heat exchange units made of fluoropolymers and with inlet and outlet tube bores with inside diameters measuring 3 cm or less	Heat exchange units for semiconductor manufacturing
<b>010</b>	842129	ex Liquid filtering or purifying machinery and apparatus made of fluoropolymers and with filter or purifier membrane thickness not exceeding 140 microns	Liquid filtering or purifying machinery for semiconductor manufacturing
<b>011</b>	842139	ex Filtering or purifying machinery and apparatus for gases, with stainless steel housing, and with inlet and outlet tube bores with inside diameters not exceeding 1.3 cm	Filtering or purifying machinery and apparatus for gases, for semiconductor manufacturing
<b>012</b>	842199	ex Parts of filtering or purifying machinery and apparatus for liquids, made of fluoropolymers and with filter or purifier membrane thickness not exceeding 140 microns; parts of filtering or purifying machinery and apparatus for gases, with stainless steel housing, and with inlet and outlet tube bores with inside diameters not exceeding 1.3 cm	Parts of filtering or purifying machinery and apparatus for liquids and gases, for semiconductor manufacturing
<b>041</b>	848610	Machines and apparatus for the manufacture of boules or wafers	As per description
<b>042</b>	848620	Machines and apparatus for the manufacture of semiconductor devices or electronic integrated circuits	As per description
<b>044</b>	848640	Machines and apparatus specified in Note 9(C) to this Chapter	Machines for the manufacture and repair of masks and reticles; assembling (packaging) semiconductors; lifting, handling, loading and unloading of semiconductor boules, wafers, or semiconductors
<b>045</b>	848690	Parts and accessories	Parts and accessories for products under HS 8486
<b>074</b>	852351	Solid-state non-volatile storage devices	Non-volatile solid-state storage: memory flash drives, memory cards, solid state drives, etc.
<b>075</b>	852352	"Smart cards"	As per description
<b>076</b>	852359	Other	Solid-state storage, other than non-volatile memory
<b>103</b>	854231	Processors and controllers, whether or not combined with memories, converters, logic circuits, amplifiers, clock and timing circuits, or other circuits	As per description, includes MCPs, Includes MCOs from 2017

104	854232	Memories	As per description, includes MCPs; Includes MCOs from 2017
105	854233	Amplifiers	As per description, includes MCPs; Includes MCOs from 2017
106	854239	Other	Other integrated circuits, not elsewhere classified, includes MCPs; includes MCOs from 2017
107	854290	Parts	Parts of integrated circuits
121	900120	Sheets and plates of polarizing material	Sheets and plates of polarizing material – possible parts of semiconductor manufacturing equipment
122	900190	Other	Lenses, prisms, mirrors, other optical elements, unmounted, optically worked – possible parts for semiconductor manufacturing equipment
123	900219	Other	Objective lenses, mounted, optically worked – possible parts for semiconductor manufacturing equipment
124	900220	Filters	Optical filters – possible parts for semiconductor manufacturing equipment
125	900290	Other	Mirrors, other optical elements, mounted, optically worked – possible parts for semiconductor manufacturing equipment
132	901210	Microscopes other than optical microscopes; diffraction apparatus	Re: electron microscopes for semiconductor inspection
133	901290	Parts and accessories	Re: parts of electron microscopes for semiconductor inspection

MCP: Multi-Chip Package; MCO: Multi-Component Integrated Circuits (see item 192 in Table 3).

Source: WTO Ministerial Declaration on the Expansion of Trade in Information Technology Products, December 2015; Department of Commerce / International Trade Administration

Table 3: Semiconductor Related Products in Attachment B of the WTO ITA Expansion		
Attachment B products <b>are covered</b> no matter where they are classified “Item number” is from the full WTO ITA expansion list.		
Item	Description	Note
192	Multi-component integrated circuits (MCOs): a combination of one or more monolithic, hybrid, or multi-chip integrated circuits with at least one of the following components: silicon-based sensors, actuators, oscillators, resonators or combinations thereof, or components performing the functions of articles classifiable under heading 8532,	All MCOs moved to HS 854231, 854232, 854233, and 854239 in 2017

	8533, 8541, or inductors classifiable under heading 8504, formed to all intents and purposes indivisibly into a single body like an integrated circuit, as a component of a kind used for assembly onto a printed circuit board (PCB) or other carrier, through the connecting of pins, leads, balls, lands, bumps, or pads.	
197	Self-adhesive circular polishing pads of a kind used for the manufacture of semiconductor wafers	CMP (Chemical-mechanical planarization) pads
198	Boxes, cases, crates and similar articles, of plastic, specially shaped or fitted for the conveyance or packing of semiconductor wafers, masks, or reticles, of subheading 392310 or 848690	i.e., FOSB, FOUPS; Semiconductor Wafer, Reticle and Mask shipping containers
199	Vacuum pumps of a kind used solely or principally for the manufacture of semiconductors or flat panel displays	
200	Plasma cleaner machines that remove organic contaminants from electron microscopy specimens and specimen holders	

Source: WTO Ministerial Declaration on the Expansion of Trade in Information Technology Products, December 2015; Department of Commerce / International Trade Administration

#### Semiconductor-Related Products ITA Expansion Tariff Elimination Schedules for Key Markets

The first round of tariff cuts under the ITA Expansion began on July 1, 2016. Each signatory negotiated its line-by-line tariff elimination schedule with the other participants. The WTO estimates that 65 percent of the tariff lines, representing 88 percent of the participants' imports of the covered products, will be duty-free on day one of the agreement, rising to 95 percent by 2019. One hundred percent of the ITA expansion product imports by all participating countries will be duty free by 2024. Tariffs are applied on a most favored nation (MFN) basis, so all WTO members can take advantage of the tariff cuts when exporting covered products to parties to the agreement.

Table 4: Key Markets Tariff Elimination for Products in Tables 2 and 3			
<i>Note: All 201 ITA Expansion products are already tariff free in Hong Kong, Japan, Norway, Singapore, and Switzerland/Liechtenstein.</i>			
Market	Tariff Elimination by Product (Item Number) by Year		
	July 1, 2019	July 1, 2021	July 1, 2023
<b>China</b>	002, 004, 045 <sup>1</sup>	007, 008, 010, 011, 012, 044 <sup>3</sup> , 121, 192 <sup>2,3</sup> , 197, 198, 199	003, 005, 122, 123, 124, 125
<b>European Union</b>	002, 003, 005 <sup>1</sup> , 121, 123, 124, 132 <sup>1</sup> , 197 <sup>1</sup> , 200	122	125
<b>Korea, South</b>	002, 004, 005, 008, 010 <sup>1</sup> , 011 <sup>1</sup> , 012 <sup>1</sup> , 122, 123, 124, 125, 132, 133, 192 <sup>1,2</sup> , 197, 198, 199, 200	121	007
<b>Taiwan</b>	005 <sup>1</sup> , 007, 008, 010, 011, 012, 121, 122, 123, 124, 125, 132, 133, 197 <sup>1</sup> , 198 <sup>1</sup> , 199, 200		
United States	003, 005, 124, 125 <sup>1</sup> , 198 <sup>1</sup> , 200		

<sup>1</sup>Partial zero, partial 2019; <sup>2</sup>MCOS—now under items 103, 104, 105, 106; <sup>3</sup>Partial zero, partial 2021  
Data = item numbers in Tables 2 and 3. Unlisted Table 2 and 3 items are duty-free

**Bold = 2016 Top Markets for Semiconductors and Related Equipment**

Source: ITA Expansion Signatory Tariff Reduction Schedules

The link to the complete ITA Expansion signatory tariff reduction schedules is [here](#). The signatories' schedules show how they will implement their tariff reduction commitment item by item.

### **The 1997 WTO Information Technology Agreement**

2017 is the 20<sup>th</sup> Anniversary of the WTO Information Technology Agreement. The original 1997 WTO Information Technology Agreement, including the covered product list, can be found [here](#) (Note the HS codes are for 1997, and many of the ICT product HS codes were updated in 2007). The 1997 Agreement currently has over 80 members, including 30 who are not members of the ITA expansion agreement (**See Table 5**). Most members of the 1997 Agreement, including the signatories of the Expansion, have already eliminated their tariffs to zero on the products covered by the 1997 Agreement. Recent signatories may be in the process of completing their tariff eliminations.

<b>Table 5: 1997 WTO Information Technology Agreement Signatories Not in the WTO ITA Expansion As of June 2017</b>					
Afghanistan	Bahrain	Croatia	Dominican Rep.	Egypt	El Salvador
Georgia	Honduras	India	Indonesia	Jordan	Kazakhstan
Kuwait	Kyrgyz Republic	Macao, China	Moldova	Morocco	Nicaragua
Oman	Panama	Peru	Qatar	Russia	Saudi Arabia
Seychelles	Tajikistan	Turkey	UAE	Ukraine	Vietnam

*Source: 20 Years of the Information Technology Agreement, WTO June 2017*

### **Semiconductor-Related Products in the 1997 Information Technology Agreement (1997 HS codes):**

Attachment A, Section 1:

- **Doped Bare Semiconductor Wafers** (HS 3818)
- **Discrete Semiconductors and parts** (HS 8541)
- **Integrated Circuit Semiconductors and parts** (HS 8542). Sub-Categories have changed, the new categories are in the ITA expansion to ensure inclusion
- **Smart Cards**: Moved in 2007 from HS 8542 to HS 852352. HS 852352 is included in the ITA expansion for clarity

Attachment A, Section 2 Semiconductor manufacturing and test equipment and parts thereof:  
(covered no matter where they are classified in the HS code)

- **Quartz Reactor Tubes and Holders for diffusion and oxidation furnaces for semiconductor manufacturing**
- **List of normative types of Semiconductor Manufacturing Equipment and Parts and Accessories**: The intention was to include all identifiable types. Semiconductor manufacturing equipment and parts and accessories are now classified under HS 848610, 848620, 848640 and 848690 (all introduced in 2007), and are included in the expansion of the Information Technology Agreement for clarity.
- **Injection and Compression moulds for the manufacture of semiconductor devices**
- **Wafer Probers**
- **Instruments and apparatus for measuring or checking semiconductor wafers or devices** (HS 903082) and **Parts and accessories thereof** (ex HS 903090)
- **Optical Instruments for Inspecting semiconductor wafers, devices, masks, photomasks, reticles** (HS 903141), and **parts thereof** (ex HS 903190)
- **Optical instruments and appliances for measuring surface particulate contamination on semiconductor wafers** (ex HS 903149) and **parts thereof** (ex 903190)

## **Resources for Exporters**

### **WTO Information Technology Agreement Webpage:**

[https://www.wto.org/english/tratop\\_e/inftec\\_e/inftec\\_e.htm](https://www.wto.org/english/tratop_e/inftec_e/inftec_e.htm)

- 20 Years of the Information Technology Agreement, World Trade Organization, June 2017. Available for order at the WTO Information Technology Agreement web page (see above), history and detailed information on the 1997 Agreement and the Information Technology Agreement expansion
- Symposium on the 20th Anniversary of the Information Technology Agreement, June 27-28, 2017  
[https://www.wto.org/english/tratop\\_e/inftec\\_e/ita20th\\_e/ita20th\\_e.htm](https://www.wto.org/english/tratop_e/inftec_e/ita20th_e/ita20th_e.htm)

### **Information Technology Agreement Expansion**

- ITA Expansion Declaration and Product List  
[https://docs.wto.org/dol2fe/Pages/FE\\_Search/DDFDocuments/225713/q/WT/MIN15/25.pdf](https://docs.wto.org/dol2fe/Pages/FE_Search/DDFDocuments/225713/q/WT/MIN15/25.pdf)
- Briefing note: Expansion of the Information Technology Agreement  
[https://www.wto.org/english/tratop\\_e/inftec\\_e/briefingnoteita\\_e.htm](https://www.wto.org/english/tratop_e/inftec_e/briefingnoteita_e.htm)
- ITA expansion press conference: Remarks by WTO Director-General Roberto Azevêdo  
[https://www.wto.org/english/news\\_e/spra\\_e/spra104\\_e.htm](https://www.wto.org/english/news_e/spra_e/spra104_e.htm)

### **1997 Information Technology Agreement**

- 1997 Information Technology Agreement (including HS 1997 product list):  
[https://www.wto.org/english/docs\\_e/legal\\_e/itadec\\_e.htm](https://www.wto.org/english/docs_e/legal_e/itadec_e.htm)