
UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM SD
SPECIALIZED DISCLOSURE REPORT
CONFLICT MINERALS

TTM TECHNOLOGIES, INC.

(Exact name of the registrant as specified in its charter)

Delaware
(State or other jurisdiction
of incorporation or organization)

0-31285
(Commission
File Number)

91-1033443
(IRS Employer
Identification No.)

200 East Sandpointe, Suite 400
Santa Ana, California
(Address of principal executive offices)

92707
(Zip code)

Daniel J. Weber
(314) 746-2087
(Name and telephone number, including area code, of
the person to contact in connection with this report.)

Check the appropriate box to indicate the rule pursuant to which this form is being filed, and provide the period to which the information in this form applies:

☒ Rule 13p-1 under the Securities Exchange Act (17 CFR 240.13p-1) for the reporting period from January 1, 2019 to December 31, 2019.

Section 1. Conflict Minerals Disclosure**Item 1.01 Conflict Minerals Disclosure and Report****(c) Conflict Minerals Report**

In accordance with Rule 13p-1 under the Securities Exchange Act of 1934, as amended, and the instructions to Form SD, TTM Technologies, Inc. (the “Company”) is filing with this Form SD a Conflict Minerals Report, which is attached hereto as Exhibit 1.01 and incorporated herein by reference.

The Company’s Statement on its Conflict Minerals Policy and this Form SD, including the Company’s Conflict Minerals Report, are available on the Company’s website at <https://investors.ttm.com/corporate-governance/highlights>. The content of our website as referred to in this Form SD and Conflict Minerals Report is included for general information only and is not incorporated by reference herein.

Item 1.02 Exhibit

The Conflict Minerals Report required by Item 1.01 is filed as Exhibit 1.01 to this Form SD.

Section 2. Exhibits**Item 2.01 Exhibits**

Exhibit 1.01 - [Conflict Minerals Report as required by Items 1.01 and 1.02 of this Form SD.](#)

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the duly authorized undersigned.

TTM TECHNOLOGIES, INC.

By: /s/ Daniel J. Weber

Name: Daniel J. Weber

Title: Senior Vice President, General Counsel and Secretary

May 29, 2020

For the Year Ended December 31, 2019

This is the Conflict Minerals Report of TTM Technologies, Inc. (the “Company” or “TTM”) for the calendar year 2019 (ended December 31, 2019) in accordance with Rule 13p-1 (“Rule 13p-1”) under the Securities Exchange Act of 1934 (the “1934 Act”), and the instructions to Form SD. Please refer to Rule 13p-1, Form SD and the 1934 Act Release No. 34-67716 for definitions to the terms used in this Report, unless otherwise defined herein.

Rule 13p-1 and Form SD require the disclosure of certain information if a company manufactures or contracts to manufacture products for which certain “Conflict Minerals” (as defined below) are present in the products and necessary to the functionality of such products. Form SD defines “Conflict Minerals” as: (i)(a) columbite-tantalite (or coltan, the metal ore from which tantalum is extracted), (b) cassiterite (the metal ore from which tin is extracted), (c) gold and (d) wolframite (the metal ore from which tungsten is extracted), or their derivatives, which are currently limited to tantalum, tin and tungsten; or (ii) any other mineral or its derivatives determined by the U.S. Secretary of State to be financing conflict in the Democratic Republic of the Congo (“DRC”) or an adjoining country (collectively, the “Covered Countries”).

(1) Product Description

TTM is a leading global printed circuit board (“PCB”) manufacturer, focusing on quick-turn and volume production of technologically complex PCBs, backplane assemblies and electro-mechanical solutions (“E-M Solutions”), as well as a global designer and manufacturer of radio-frequency (“RF”) and microwave components and assemblies. The Company provides time-to-market and volume production of advanced technology products and offers a one-stop design, engineering and manufacturing solution to customers. This one-stop design and manufacturing solution enables the Company to align technology developments with the diverse needs of the Company’s customers and to enable them to reduce the time required to develop new products and bring them to market. The Company serves a diversified customer base in various markets throughout the world, including aerospace and defense, automotive components, smart phones and other mobile devices, high-end computing, medical, industrial and instrumentation related products, as well as networking/communications infrastructure products. The Company’s customers include both original equipment manufacturers (“OEMs”) and electronic manufacturing services (“EMS”) providers.

As a company whose business is electronics manufacturing and assembly, TTM is several levels removed from the actual mining and refining of Conflict Minerals. TTM does not purchase raw ore or unrefined Conflict Minerals and makes no direct purchases in the Covered Countries.

Our customers, who may also have a responsibility to conduct due diligence as to the source of Conflict Minerals used in their products, frequently specify the exact materials and components we use, and in many cases specify the suppliers from which we source these minerals and components. As a result, we are limited in our ability to exercise discretion in sourcing certain materials and components. Similarly, our ability to influence the supply chain practices of suppliers selected by our customers is limited. Thus, our ability to change the sourcing of our Conflict Minerals depends on our customers’ selections of suppliers and designs.

(2) Due Diligence in Accordance with the Organization for Economic Cooperation and Development (the “OECD”) 5-Step Framework

TTM has processes in place for the purpose of exercising due diligence over its supply chain as it relates to minerals from conflict-affected and high risk areas. The design of the due diligence processes conforms substantially to the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas and the related supplements for gold, tin, tantalum and tungsten (the “OECD Guidance”) as it relates to “downstream” purchasers of products and components. The due diligence processes have been described below under sub-headings corresponding to the five-step framework of the OECD Guidance.

Step 1 – Establish and Maintain Strong Company Management Systems

- 1.1 TTM has adopted a Conflict Minerals Policy and Statement (the “Policy”). A copy of the Policy, together with a copy of this Form SD and Conflict Minerals Report, can be found on the Company’s website at <https://investors.ttm.com/corporate-governance/highlights>. The content of our website as referred to in this

Form SD and Report is included for general information only and is not incorporated by reference herein. In accordance with the Policy, TTM is continuing to review its suppliers' declarations and has sought their cooperation and assistance in ensuring that the Conflict Minerals used in TTM products are sourced reliably and responsibly. However, as noted in the Policy and above, TTM's purchasing decisions are limited by the level of cooperation it receives from suppliers in sourcing responsibly from non-conflict areas.

- 1.2 TTM has a Conflict Minerals Steering Committee to review and enhance the cross-functional working group (the "Working Group") tasked with developing policies and procedures consistent with the OECD Guidance.
- 1.3 In accordance with the requirements of Rule 13p-1 and the instructions to Form SD, the Working Group annually reviews the Company's products, almost all of which are manufactured to customer specifications, to determine if they contain Conflict Minerals necessary to the products' generally expected functions, use, purpose or production.
- 1.4 The Working Group concluded that the bare PCBs may contain either gold or tin in surface finishes, and the E-M Solutions and RF/Microwave products manufactured in 2019 may contain any of the four Conflict Minerals in components.

Step 2 – Identify and Assess Risks in the Supply Chain

- 2.1 The Working Group has identified the suppliers of the materials and components that contain Conflict Minerals in TTM's products and conducted a supply-chain survey to obtain source smelter identification from its suppliers of Conflict Minerals using the standard conflict minerals reporting template ("CMRT") published by the Responsible Minerals Initiative ("RMI") (formerly the Conflict Free Sourcing Initiative).
- 2.2 The CMRT was distributed to all identified suppliers of components or materials containing Conflict Minerals to determine the country of origin of the Conflict Minerals contained therein, and whether such Conflict Minerals were sourced from recycled or scrap materials. The CMRT requested information on Conflict Minerals in components or materials supplied to TTM for products manufactured during calendar year 2019 and contained representations as to the source and origin of the necessary Conflict Minerals contained in the relevant products.
- 2.3 In addition to identifying suppliers of Conflict Minerals to the Company and collecting supply-chain smelter information, TTM's diligence measures included requesting suppliers to declare if any Conflict Minerals contained in their products originated in the Covered Countries.
- 2.4 The Company believes that complete information was received from all identified suppliers to its PCB products. However, many suppliers to TTM's much smaller E-M Solutions and RF/Microwave businesses reported that their supply chain information was incomplete. TTM continues to seek complete and accurate information from its Conflict Minerals supply chain sources from relevant suppliers.
- 2.5 The Company renewed its membership in the RMI to retain its timely access to global Conflict Minerals smelter information.
- 2.6 Smelters and refiners identified in the supply-chain survey were checked against RMI-provided smelter information to confirm the status of their Conflict Minerals related sourcing activities.

Step 3 – Design and Implement a Strategy to Respond to Identified Risks

- 3.1 Changes to the status of the identified TTM PCB supply chain smelters were monitored regularly. All identified PCB sourcing concerns were addressed through outreach to the relevant members of TTM's supply chain. There were cases during the reporting year where supply chain changes were related to Conflict Minerals sourcing. In such cases, TTM reached out to our direct supply chain and they reported modifying their sourcing in response.
- 3.2 Changes to the status of the identified TTM E-M Solutions supply chain smelters were only monitored for solder sourcing and there were no recorded cases where intervention occurred during the reporting year. All other raw materials used to manufacture customer parts are subject to strict controls from TTM's customers, were not subject to TTM discretionary change, and were therefore not included in any ongoing monitoring or outreach program.

- 3.3 The status of the identified RF/Microwave supply chain smelters was updated at the end of 2019. No cases of intervention occurred during the reporting year.
- 3.4 After reviewing supply chain and other identified publicly available information, the Company believes that some portion of the tantalum, tin, tungsten and gold in our supply chain may have been mined in Covered Countries. Grouped by metal, the following is our best estimate of the smelter, and smelter location, that may have contributed Conflict Minerals from Covered Countries to our supply chain for products manufactured during the 2019 calendar year:

Metal	Smelter Name		Country
Gold	Emirates Gold DMCC	—	United Arab Emirates
Gold	L'Orfebre S.A.	—	Andorra
Gold	Metalurgica Met-Mex Penoles S.A. De C.V.	—	Mexico
Gold	Royal Canadian Mint	—	Canada
Gold	Shandong Zhaojin Gold & Silver Refinery Co., Ltd.	—	China
Gold	The Refinery of Shandong Gold Mining Co., Ltd.	—	China
Gold	Umicore Brasil Ltda.	—	Brazil
Tantalum	Changsha South Tantalum Niobium Co., Ltd.	—	China
Tantalum	D Block Metals, LLC	—	United States of America
Tantalum	Exotech Inc.	—	United States of America
Tantalum	F&X Electro-Materials Ltd.	—	China
Tantalum	FIR Metals & Resource Ltd.	—	China
Tantalum	Global Advanced Metals Aizu	—	Japan
Tantalum	Global Advanced Metals Boyertown	—	United States of America
Tantalum	Guangdong Rising Rare Metals-EO Materials Ltd.	—	China
Tantalum	Guangdong Zhiyuan New Material Co., Ltd.	—	China
Tantalum	H.C. Starck Co., Ltd.	—	Thailand
Tantalum	H.C. Starck Inc.	—	United States of America
Tantalum	H.C. Starck Ltd.	—	Japan
Tantalum	H.C. Starck Smelting GmbH & Co. KG	—	Germany
Tantalum	H.C. Starck Tantalum and Niobium GmbH	—	Germany
Tantalum	Hengyang King Xing Lifeng New Materials Co., Ltd.	—	China
Tantalum	Jiangxi Dinghai Tantalum & Niobium Co., Ltd.	—	China
Tantalum	Jiangxi Tuohong New Raw Material	—	China
Tantalum	JiuJiang JinXin Nonferrous Metals Co., Ltd.	—	China
Tantalum	Jiujiang Janny New Material Co., Ltd.	—	China
Tantalum	Jiujiang Tanbre Co., Ltd.	—	China
Tantalum	KEMET Blue Metals	—	Mexico
Tantalum	KEMET Blue Powder	—	United States of America

Tantalum	Ningxia Orient Tantalum Industry Co., Ltd.	—	China
Tantalum	Power Resources Ltd.	—	North Macedonia, Republic of
Tantalum	Taki Chemical Co., Ltd.	—	Japan
Tantalum	Telex Metals	—	United States of America
Tantalum	Ulba Metallurgical Plant JSC	—	Kazakhstan
Tantalum	XinXing Haorong Electronic Material Co., Ltd.	—	China
Tantalum	Yanling Jincheng Tantalum & Niobium Co., Ltd.	—	China
Tin	Alpha	—	United States of America
Tin	Jiangxi New Nanshan Technology Ltd.	—	China
Tin	Malaysia Smelting Corporation (MSC)	—	Malaysia
Tin	Metallo Belgium N.V.	—	Belgium
Tin	Metallo Spain S.L.U.	—	Spain
Tin	Thaisarco	—	Thailand
Tin	Tin Technology & Refining	—	United States of America
Tin	Yunnan Tin Company Limited	—	China
Tungsten	A.L.M.T. TUNGSTEN Corp.	—	Japan
Tungsten	Asia Tungsten Products Vietnam Ltd.	—	Viet Nam
Tungsten	Global Tungsten & Powders Corp.	—	United States of America
Tungsten	H.C. Starck Smelting GmbH & Co. KG	—	Germany
Tungsten	Japan New Metals Co., Ltd.	—	Japan
Tungsten	Kennametal Fallon	—	United States of America
Tungsten	Masan Tungsten Chemical LLC (MTC)	—	Viet Nam
Tungsten	Niagara Refining LLC	—	United States of America
Tungsten	Wolfram Bergbau und Hutten AG	—	Austria
Tungsten	Xiamen Tungsten (H.C.) Co., Ltd.	—	China

Although we do not have complete source-smelter information from a number of our customer-specified suppliers, we obtained no affirmative information indicating that any of the Conflict Minerals from the smelters listed above were financed by or benefited armed groups that operate in the Covered Countries of the DRC region.

- 3.5 As noted above, the Company's supply chain survey did not yield complete source-smelter information from a number of customer-specified suppliers of Conflict Minerals for TTM's E-M Solutions and RF/Microwave products. The Company is continuing its efforts to work with such suppliers to ensure complete information is provided to the Company, including the country of origin of the relevant Conflict Minerals and the identity of the source smelters used to process the minerals. As additional information is obtained, the Company will undertake to determine whether such smelters have been listed by RMI as compliant with the "Responsible Minerals Assurance Process (RMAP)" or otherwise. In connection with such continuing diligence, the Company intends to continue education of and outreach to its suppliers as needed.

Step 4 – Carry Out Independent Third-Party Audit (“IPSA”) of Smelter/Refiner’s Due Diligence Practices

- 4.1 TTM supports the RMI conflict free smelter program as well as the development and implementation of due diligence practices and tools such as the CMRT. TTM analyzed the data received on smelters and refiners and compared such information against the list of facilities that were designated as Conformant by the RMI. However, due to the structure of the Company’s supply chain as noted in the Policy and above, there are generally multiple tiers of suppliers between TTM and the smelters and refiners in the supply chain, and TTM does not purchase raw ore or unrefined Conflict Minerals or make any direct purchases in the Covered Countries. Therefore, as contemplated by the OECD Guidance for “downstream” companies, TTM has not performed its own audits of smelters or refiners. TTM will obtain an IPSA as and when required by Form SD.

Step 5 – Report Annually on Supply Chain Due Diligence

- 5.1 TTM submitted its Form SD with Exhibit 1.01 to SEC and posted the same to TTM’s external website for each prior reporting period. The most recent prior reporting period ended December 31, 2018 and the relevant Form SD was submitted to SEC and posted on TTM’s external web site on May 24, 2019.

(3) Products

The Company has identified the following products that may contain Conflict Minerals necessary to the functionality or production of products manufactured, or contracted to manufacture:

As noted in section (1) above, TTM products are the following:

1. Bare PCBs fabricated to customer specifications, including procurement of heat sinks and their attachments, where applicable;
2. E-M Solutions including printed circuit assemblies assembled to customer specified bills of materials using customer controlled components from customer approved vendor lists and any other products assembled to customer design and using customer specified suppliers; and
3. Products manufactured at RF/Microwave manufacturing facilities that were fabricated to customer design and material specifications and RF/Microwave products manufactured in accordance with TTM designs.

Appendix I contains a listing of smelters provided by TTM’s PCB supply chain for products manufactured during the 2019 calendar year. With the exception of the smelters so indicated that were subsequently removed from TTM’s PCB supply chain, all are currently recognized as RMI conformant or DRC Conflict Free.

Appendix II is a listing of smelters reported by the Company’s E-M Solutions and RF/Microwave supply chain for products manufactured during the 2019 calendar year. The supply chain data quality associated with these parts appears to be significantly less robust. Some smelters names provided may not be actual smelters and some names provided are recognized as not currently participating in any internationally recognized RMAP. TTM will continue to encourage customers to choose known Conflict Free sources as opportunities allow.

(4) Summary

TTM’s reasonable country of origin inquiry is based on third party audit information and, to the extent that audited information is not available, it draws on additional information that TTM and others have collected. To the extent reasonably possible, TTM has documented the country of origin of identified smelters and refiners based on information from the RMI, surveys of smelters and refiners, and/or third party reviews of publicly available information. However, some country of origin information has not been audited by a third party because, among other reasons, applicable smelters and refiners have gone out of operation before completing a third party audit, smelters and refiners have not gone through a third party audit, or the third party audit does not yet include reporting of country of origin information. Based on the information provided by TTM’s suppliers, smelters, and refiners, as well as from the RMI and other sources, TTM believes that the Conflict Minerals contained in its products were processed in the countries listed in the Appendices below and has indicated where the smelters have previously been audited by RMI and found to be sourcing conflict free, or are working with RMI to be audited in the future.

TTM's customers, who may also have a responsibility to conduct due diligence as to the source of Conflict Minerals used in their products, frequently specify the exact materials, components and suppliers we use, which limits our ability to exercise discretion in sourcing certain materials and components, and our ability to influence the supply chain practices of suppliers. Accordingly, the Company's success in making determinations about the potential presence of Conflict Minerals in its products depends upon various factors including, but not limited to, (i) the respective due diligence efforts of its suppliers and their supply chain; (ii) such suppliers' respective willingness, whether public or private entities, to disclose such information to the Company; and (iii) the ability of the involved entities to make their determinations in accordance with nationally or internationally recognized standards, including the Guidance provided by the OECD. The failure to obtain reliable information from any level of TTM's supply chain could have a material impact on the Company's future ability to report on the presence of Conflict Minerals with any degree of certainty. There can be no assurance that the Company's suppliers will continue to cooperate with diligence inquiries and requests for certifications or provide documentation or other evidence that TTM considers reliable or in a time frame sufficient to allow the Company to make its own assessment following appropriate further diligence measures, if any.

Appendix I

Conflict Minerals Sources to PCB Global Operations 2019

Appendix II

Conflict Minerals Sources to E-M Solutions and RF/Microwave Global Operations 2019

Conflict Minerals Sources to PCB Global Operations 2019

Metal	Metal Total	Smelter Name	Country	RMAP Conformant?
Gold		Advanced Chemical Company	United States of America	Y
Gold		Aida Chemical Industries Co., Ltd.	Japan	Y
Gold		Allgemeine Gold-und Silberscheideanstalt A.G.	Germany	Y
Gold		AngloGold Ashanti Corrego do Sitio Mineracao	Brazil	Y
Gold		Argor-Heraeus S.A.	Switzerland	Y
Gold		Asahi Pretec Corp.	Japan	Y
Gold		Asahi Refining Canada Ltd.	Canada	Y
Gold		Asahi Refining USA Inc.	United States of America	Y
Gold		Aurubis AG	Germany	Y
Gold		Boliden AB	Sweden	Y
Gold		C. Hafner GmbH + Co. KG	Germany	Y
Gold		Chimet S.p.A.	Italy	Y
Gold		Dowa	Japan	Y
Gold		Geib Refining Corporation	United States of America	Y
Gold		Heimerle + Meule GmbH	Germany	Y
Gold		Heraeus Metals Hong Kong Ltd.	China	Y
Gold		Heraeus Precious Metals GmbH & Co. KG	Germany	Y
Gold		Ishifuku Metal Industry Co., Ltd.	Japan	Y
Gold		Istanbul Gold Refinery	Turkey	Y
Gold		JX Nippon Mining & Metals Co., Ltd.	Japan	Y
Gold		Kennecott Utah Copper LLC	United States of America	Y
Gold		Kojima Chemicals Co., Ltd.	Japan	Y
Gold		Matsuda Sangyo Co., Ltd.	Japan	Y
Gold		Metalor Technologies (Hong Kong) Ltd.	China	Y
Gold		Metalor Technologies (Singapore) Pte., Ltd.	Singapore	Y
Gold		Metalor Technologies (Suzhou) Ltd.	China	Y
Gold		Metalor Technologies S.A.	Switzerland	Y
Gold		Metalor USA Refining Corporation	United States of America	Y
Gold		Metalurgica Met-Mex Penoles S.A. De C.V.	Mexico	Y
Gold		Mitsubishi Materials Corporation	Japan	Y
Gold		Mitsui Mining and Smelting Co., Ltd.	Japan	Y
Gold		Nihon Material Co., Ltd.	Japan	Y
Gold		PAMP S.A.	Switzerland	Y
Gold		Rand Refinery (Pty) Ltd.	South Africa	Y
Gold		Royal Canadian Mint	Canada	Y
Gold		SAXONIA Edelmetalle GmbH	Germany	Y
Gold		Shandong Zhaojin Gold & Silver Refinery Co., Ltd.	China	Y

Gold	Sumitomo Metal Mining Co., Ltd.	Japan	Y
Gold	Tanaka Kikinzoku Kogyo K.K.	Japan	Y
Gold	Tokuriki Honten Co., Ltd.	Japan	Y
Gold	Umicore Brasil Ltda.	Brazil	Y
Gold	Umicore S.A. Business Unit Precious Metals Refining	Belgium	Y
Gold	United Precious Metal Refining, Inc.	United States of America	Y
Gold	Valcambi S.A.	Switzerland	Y
Gold	WIELAND Edelmetalle GmbH	Germany	Y
Gold	Western Australian Mint (T/a The Perth Mint)	Australia	Y
Gold	Zhongyuan Gold Smelter of Zhongjin Gold Corporation	China	Y
Gold	47 PCB Gold Source Smelters		
Tin	Alpha	United States of America	Y
Tin	CV Ayi Jaya	Indonesia	Y
Tin	CV United Smelting	Indonesia	Y
Tin	CV Venus Inti Perkasa	Indonesia	Y
Tin	Chenzhou Yunxiang Mining and Metallurgy Co., Ltd.	China	Y
Tin	China Tin Group Co., Ltd.	China	Y
Tin	Dowa	Japan	Y
Tin	EM Vinto	Bolivia	Y
Tin	Fenix Metals	Poland	Y
Tin	Gejiu Jinye Mineral Company	China	1
Tin	Gejiu Kai Meng Industry and Trade LLC	China	Y
Tin	Gejiu Non-Ferrous Metal Processing Co., Ltd.	China	Y
Tin	Gejiu Yunxin Nonferrous Electrolysis Co., Ltd.	China	Y
Tin	Guangdong Hanhe Non-Ferrous Metal Co., Ltd.	China	Y
Tin	Huichang Jinshunda Tin Co., Ltd.	China	Y
Tin	Jiangxi New Nanshan Technology Ltd.	China	Y
Tin	Malaysia Smelting Corporation (MSC)	Malaysia	Y
Tin	Metallic Resources, Inc.	United States of America	Y
Tin	Metallo Belgium N.V.	Belgium	Y
Tin	Mineracao Taboca S.A.	Brazil	Y
Tin	Minsur	Peru	Y
Tin	Mitsubishi Materials Corporation	Japan	Y
Tin	Operaciones Metalurgicas S.A.	Bolivia	Y
Tin	PT ATD Makmur Mandiri Jaya	Indonesia	Y
Tin	PT Aries Kencana Sejahtera	Indonesia	Y
Tin	PT Artha Cipta Langgeng	Indonesia	Y
Tin	PT Babel Inti Perkasa	Indonesia	Y
Tin	PT Bangka Prima Tin	Indonesia	Y
Tin	PT Bangka Serumpun	Indonesia	Y
Tin	PT Bangka Tin Industry	Indonesia	Y
Tin	PT Belitung Industri Sejahtera	Indonesia	Y
Tin	PT Bukit Timah	Indonesia	Y

Tin		PT DS Jaya Abadi	Indonesia	Y
Tin		PT Inti Stania Prima	Indonesia	Y
Tin		PT Menara Cipta Mulia	Indonesia	Y
Tin		PT Mitra Stania Prima	Indonesia	Y
Tin		PT Prima Timah Utama	Indonesia	Y
Tin		PT Rajehan Ariq	Indonesia	Y
Tin		PT Refined Bangka Tin	Indonesia	Y
Tin		PT Sariwiguna Binasentosa	Indonesia	Y
Tin		PT Stanindo Inti Perkasa	Indonesia	Y
Tin		PT Sukses Inti Makmur	Indonesia	Y
Tin		PT Timah Tbk Kundur	Indonesia	Y
Tin		PT Timah Tbk Mentok	Indonesia	Y
Tin		PT Tinindo Inter Nusa	Indonesia	Y
Tin		PT Tommy Utama	Indonesia	Y
Tin		Rui Da Hung	Taiwan, Province of China	Y
Tin		Thai Nguyen Mining and Metallurgy Co., Ltd.	Viet Nam	Y
Tin		Thaisarco	Thailand	Y
Tin		Tin Technology & Refining	United States of America	Y
Tin		White Solder Metalurgia e Mineracao Ltda.	Brazil	Y
Tin		Yunnan Chengfeng Non-ferrous Metals Co., Ltd.	China	Y
Tin		Yunnan Tin Company Limited	China	Y
Tin	53	PCB Tin Source Smelters		
	100	Total PCB Source Smelters		

¹ RMAP Conformant prior to ceasing operations.

Conflict Minerals Sources to E-M Solutions and RF/Microwave Global Operations 2019

Metal	Metal Total	Smelter Name	Country	RMAP Conformant?
Gold		8853 S.p.A.	Italy	Y
Gold		ARY Aurum Plus	United Arab Emirates	
Gold		AU Traders and Refiners	South Africa	Y
Gold		Abington Reldan Metals, LLC	United States of America	
Gold		Advanced Chemical Company	United States of America	Y
Gold		African Gold Refinery	Uganda	
Gold		Aida Chemical Industries Co., Ltd.	Japan	Y
Gold		Al Etihad Gold Refinery DMCC	United Arab Emirates	Y
Gold		Al Ghaith Gold	United Arab Emirates	
Gold		Allgemeine Gold-und Silberscheideanstalt A.G.	Germany	Y
Gold		Almalyk Mining and Metallurgical Complex (AMMC)	Uzbekistan	Y
Gold		AngloGold Ashanti Corrego do Sitio Mineracao	Brazil	Y
Gold		Argor-Heraeus S.A.	Switzerland	Y
Gold		Asahi Pretec Corp.	Japan	Y
Gold		Asahi Refining Canada Ltd.	Canada	Y
Gold		Asahi Refining USA Inc.	United States of America	Y
Gold		Asaka Riken Co., Ltd.	Japan	Y
Gold		Atasay Kuyumculuk Sanayi Ve Ticaret A.S.	Turkey	
Gold		Aurubis AG	Germany	Y
Gold		Bangalore Refinery	India	Y
Gold		Bangko Sentral ng Pilipinas (Central Bank of the Philippines)	Philippines	Y
Gold		Boliden AB	Sweden	Y
Gold		C. Hafner GmbH + Co. KG	Germany	Y
Gold		C.I Metales Procesados Industriales SAS	Colombia	
Gold		CCR Refinery - Glencore Canada Corporation	Canada	Y
Gold		CGR Metalloys Pvt Ltd.	India	
Gold		Caridad	Mexico	
Gold		Cendres + Metaux S.A.	Switzerland	Y
Gold		Chimet S.p.A.	Italy	Y
Gold		Chugai Mining	Japan	Y
Gold		Colt Refining	United States of America	
Gold		DODUCO Contacts and Refining GmbH	Germany	Y
Gold		DS PRETECH Co., Ltd.	Korea, Republic of	Y
Gold		DSC (Do Sung Corporation)	Korea, Republic of	Y
Gold		Daejin Indus Co., Ltd.	Korea, Republic of	
Gold		DaeryongENC	Korea, Republic of	
Gold		Daye Non-Ferrous Metals Mining Ltd.	China	
Gold		Degussa Sonne / Mond Goldhandel GmbH	Germany	
Gold		Dijllah Gold Refinery FZC	United Arab Emirates	

Gold	Dowa	Japan	Y
Gold	Eco-System Recycling Co., Ltd. East Plant	Japan	Y
Gold	Eco-System Recycling Co., Ltd. North Plant	Japan	Y
Gold	Eco-System Recycling Co., Ltd. West Plant	Japan	Y
Gold	Elemetal Refining, LLC	United States of America	
Gold	Emirates Gold DMCC	United Arab Emirates	Y
Gold	Fidelity Printers and Refiners Ltd.	Zimbabwe	
Gold	Fujairah Gold FZC	United Arab Emirates	
Gold	GCC Gujrat Gold Centre Pvt. Ltd.	India	
Gold	GUANGDONG JINXIAN GAOXIN CAI LIAO GONG SI	China	
Gold	Geib Refining Corporation	United States of America	Y
Gold	Gold Coast Refinery	Ghana	
Gold	Gold Refinery of Zijin Mining Group Co., Ltd.	China	Y
Gold	Great Wall Precious Metals Co., Ltd. of CBPM	China	
Gold	Guangdong Hua Jian Trade Co., Ltd.	China	
Gold	Guangdong Jinding Gold Limited	China	
Gold	Guoda Safina High-Tech Environmental Refinery Co., Ltd.	China	
Gold	Hang Seng Technology	China	
Gold	Hangzhou Fuchunjiang Smelting Co., Ltd.	China	
Gold	Heimerle + Meule GmbH	Germany	Y
Gold	Henan Yuguang Gold & Lead Co., Ltd.	China	
Gold	Heraeus Metals Hong Kong Ltd.	China	Y
Gold	Heraeus Precious Metals GmbH & Co. KG	Germany	Y
Gold	Hetai Gold Mineral Guangdong Co., Ltd.	China	
Gold	Hop Hing electroplating factory Zhejiang	Unknown	
Gold	Hunan Chenzhou Mining Co., Ltd.	China	
Gold	Hunan Guiyang yinxing Nonferrous Smelting Co., Ltd.	China	
Gold	Hung Cheong Metal Manufacturing Limited	China	
Gold	HwaSeong CJ CO., LTD.	Korea, Republic of	
Gold	Inner Mongolia Qiankun Gold and Silver Refinery Share Co., Ltd.	China	Y
Gold	International Precious Metal Refiners	United Arab Emirates	
Gold	Ishifuku Metal Industry Co., Ltd.	Japan	Y
Gold	Istanbul Gold Refinery	Turkey	Y
Gold	Italpreziosi	Italy	Y
Gold	JALAN & Company	India	
Gold	JSC Ekaterinburg Non-Ferrous Metal Processing Plant	Russian Federation	
Gold	JSC Uralelectromed	Russian Federation	Y
Gold	JX Nippon Mining & Metals Co., Ltd.	Japan	Y
Gold	Japan Mint	Japan	Y
Gold	Jiangxi Copper Co., Ltd.	China	Y
Gold	Jin Jinyin Refining Co., Ltd.	China	
Gold	Jinlong Copper Co., Ltd.	China	
Gold	KGHM Polska Miedz Spolka Akcyjna	Poland	Y
Gold	Kaloti Precious Metals	United Arab Emirates	
Gold	Kazakhmys Smelting LLC	Kazakhstan	

Gold	Kazzinc	Kazakhstan	Y
Gold	Kennecott Utah Copper LLC	United States of America	Y
Gold	Kojima Chemicals Co., Ltd.	Japan	Y
Gold	Korea Zinc Co., Ltd.	Korea, Republic of	Y
Gold	Kosak Seiren	Japan	
Gold	Kundan Care Products Ltd.	India	
Gold	Kyrgyzaltyn JSC	Kyrgyzstan	Y
Gold	Kyshtym Copper-Electrolytic Plant ZAO	Russian Federation	
Gold	L'Orfebre S.A.	Andorra	Y
Gold	L'azurde Company For Jewelry	Saudi Arabia	
Gold	LS-NIKKO Copper Inc.	Korea, Republic of	Y
Gold	LT Metal Ltd.	Korea, Republic of	Y
Gold	Lingbao Gold Co., Ltd.	China	
Gold	Lingbao Jinyuan Tonghui Refinery Co., Ltd.	China	
Gold	Luoyang Zijin Yinhui Gold Refinery Co., Ltd.	China	
Gold	MMTC-PAMP India Pvt., Ltd.	India	Y
Gold	Marsam Metals	Brazil	Y
Gold	Materion	United States of America	Y
Gold	Matsuda Sangyo Co., Ltd.	Japan	Y
Gold	Metalor Technologies (Hong Kong) Ltd.	China	Y
Gold	Metalor Technologies (Singapore) Pte., Ltd.	Singapore	Y
Gold	Metalor Technologies (Suzhou) Ltd.	China	Y
Gold	Metalor Technologies S.A.	Switzerland	Y
Gold	Metalor USA Refining Corporation	United States of America	Y
Gold	Metalurgica Met-Mex Penoles S.A. De C.V.	Mexico	Y
Gold	Mitsubishi Materials Corporation	Japan	Y
Gold	Mitsui Mining and Smelting Co., Ltd.	Japan	Y
Gold	Modeltech Sdn Bhd	Malaysia	
Gold	Morris and Watson	New Zealand	
Gold	Morris and Watson Gold Coast	Australia	
Gold	Moscow Special Alloys Processing Plant	Russian Federation	Y
Gold	NH Recytech Company	Korea, Republic of	
Gold	Nadir Metal Rafineri San. Ve Tic. A.S.	Turkey	Y
Gold	Navoi Mining and Metallurgical Combinat	Uzbekistan	
Gold	Nihon Material Co., Ltd.	Japan	Y
Gold	Nihon Superior Co., Ltd.	Japan	
Gold	Nohon Material Corporation	Unknown	
Gold	Nyrstar Metals	United States of America	
Gold	OJSC "The Gulidov Krasnoyarsk Non-Ferrous Metals Plant"	Russian Federation	Y
	(OJSC Krastsvetmet)		
Gold	OJSC Novosibirsk Refinery	Russian Federation	Y
Gold	Ogussa Osterreichische Gold- und Silber-Scheideanstalt GmbH	Austria	Y
Gold	Ohura Precious Metal Industry Co., Ltd.	Japan	Y
Gold	PAMP S.A.	Switzerland	Y
Gold	PT Aneka Tambang (Persero) Tbk	Indonesia	Y
Gold	PX Precinox S.A.	Switzerland	Y

Gold	Pease & Curren	United States of America	
Gold	Penglai Penggang Gold Industry Co., Ltd.	China	
Gold	Planta Recuperadora de Metales SpA	Chile	Y
Gold	Precious Metals Sales Corp.	United States of America	
Gold	Prioksky Plant of Non-Ferrous Metals	Russian Federation	Y
Gold	QG Refining, LLC	United States of America	
Gold	REMONDIS PMR B.V.	Netherlands	Y
Gold	Rand Refinery (Pty) Ltd.	South Africa	Y
Gold	Realized the Enterprise Co., Ltd.	Unknown	
Gold	Refinery of Seemine Gold Co., Ltd.	China	
Gold	Republic Metals Corporation	United States of America	
Gold	Rio Tinto Group	Unknown	
Gold	Royal Canadian Mint	Canada	Y
Gold	SAAMP	France	Y
Gold	SAFINA A.S.	Czechia	Active
Gold	SAXONIA Edelmetalle GmbH	Germany	Y
Gold	SEMPSA Joyeria Plateria S.A.	Spain	Y
Gold	SOE Shyolkovsky Factory of Secondary Precious Metals	Russian Federation	Y
Gold	Sabin Metal Corp.	United States of America	
Gold	Safimet S.p.A	Italy	Y
Gold	Sai Refinery	India	
Gold	Samduck Precious Metals	Korea, Republic of	Y
Gold	Samwon Metals Corp.	Korea, Republic of	
Gold	Schone Edelmetaal B.V.	Netherlands	
Gold	Shan Dong Huangjin	China	
Gold	Shan Tou Shi Yong Yuan Jin Shu Zai Sheng Co., Ltd.	China	
Gold	Shandon Jin Jinyin Refining Limited	Unknown	
Gold	Shandong Hengbang Smelter Co., Ltd.	China	
Gold	Shandong Humon Smelting Co., Ltd.	China	
Gold	Shandong Tiancheng Biological Gold Industrial Co., Ltd.	China	
Gold	Shandong Yanggu Xiangguang Co., Ltd.	China	
Gold	Shandong Zhaojin Gold & Silver Refinery Co., Ltd.	China	Y
Gold	Shandong penglai gold smelter	Unknown	
Gold	Shenzhen Heng Zhong Industry Co., Ltd.	China	
Gold	Shenzhen Zhonghenglong Real Industry Co., Ltd.	China	
Gold	Shirpur Gold Refinery Ltd.	India	
Gold	Sichuan Tianze Precious Metals Co., Ltd.	China	Y
Gold	Singway Technology Co., Ltd.	Taiwan, Province of China	Y
Gold	Sino-Platinum Metals Co., Ltd.	China	
Gold	So Accurate Group, Inc.	United States of America	
Gold	Solar Applied Materials Technology Corp.	Taiwan, Province of China	Y
Gold	Sovereign Metals	India	
Gold	State Research Institute Center for Physical Sciences and Technology	Lithuania	
Gold	SuZhou ShenChuang recycling Ltd.	Unknown	
Gold	Sudan Gold Refinery	Sudan	

Gold		Sumitomo Metal Mining Co., Ltd.	Japan	Y
Gold		SungEel HiMetal Co., Ltd.	Korea, Republic of	Y
Gold		Suntain Co., Ltd.	Unknown	
Gold		Super Dragon Technology Co., Ltd.	China	
Gold		T.C.A S.p.A	Italy	Y
Gold		TOO Tau-Ken-Altyn	Kazakhstan	Y
Gold		Tanaka Kikinzoku Kogyo K.K.	Japan	Y
Gold		The Refinery of Shandong Gold Mining Co., Ltd.	China	Y
Gold		Tokuriki Honten Co., Ltd.	Japan	Y
Gold		Tongling Nonferrous Metals Group Co., Ltd.	China	
Gold		Tony Goetz NV	Belgium	
Gold		Torecom	Korea, Republic of	Y
Gold		Tsai Brother industries	Unknown	
Gold		Umicore Brasil Ltda.	Brazil	Y
Gold		Umicore Precious Metals Thailand	Thailand	Y
Gold		Umicore S.A. Business Unit Precious Metals Refining	Belgium	Y
Gold		United Precious Metal Refining, Inc.	United States of America	Y
Gold		Universal Precious Metals Refining Zambia	Zambia	
Gold		Valcambi S.A.	Switzerland	Y
Gold		Viagra Di precious metals (Zhaoyuan) Co., Ltd.	China	
Gold		WANG TING	Unknown	
Gold		WIELAND Edelmetalle GmbH	Germany	Y
Gold		Western Australian Mint (T/a The Perth Mint)	Australia	Y
Gold		Wuzhong Group	China	
Gold		Xiamen Jinbo Metal Co., Ltd.	Unknown	
Gold		Yamakin Co., Ltd.	Japan	Y
Gold		Yamato Denki Ind. Co., Ltd.	Unknown	
Gold		Yokohama Metal Co., Ltd.	Japan	Y
Gold		Yunnan Copper Industry Co., Ltd.	China	
Gold		Zhaojun Maifu	Unknown	
Gold		Zhe Jiang Guang Yuan Noble Metal Smelting Factory	China	
Gold		Zhongkuang Gold Industry Co., Ltd.	China	
Gold		Zhongshan Hyper-Toxic Substance Monopolized Co., Ltd.	China	
Gold		Zhongshan Poison Material Proprietary Co., Ltd.	China	
Gold		Zhongyuan Gold Smelter of Zhongjin Gold Corporation	China	Y
Gold		Zhuhai toxic materials Monopoly Ltd.	China	
Gold		Zhuzhou Smelting Group Co., Ltd	China	
Gold	211	E-M Solutions and RF/Microwave Gold Source Smelters		
Tantalum		ANHUI HERRMAN IMPEX CO.	China	
Tantalum		Asaka Riken Co., Ltd.	Japan	Y
Tantalum		CP Metals Inc.	United States of America	Y
Tantalum		Changsha South Tantalum Niobium Co., Ltd.	China	Y
Tantalum		D Block Metals, LLC	United States of America	Y
Tantalum		Duoluoshan	China	
Tantalum		Exotech Inc.	United States of America	Y

Tantalum	F&X Electro-Materials Ltd.	China	Y
Tantalum	FIR Metals & Resource Ltd.	China	Y
Tantalum	Global Advanced Metals Aizu	Japan	Y
Tantalum	Global Advanced Metals Boyertown	United States of America	Y
Tantalum	Guangdong Rising Rare Metals-EO Materials Ltd.	China	Y
Tantalum	Guangdong Zhiyuan New Material Co., Ltd.	China	Y
Tantalum	H.C. Starck Co., Ltd.	Thailand	Y
Tantalum	H.C. Starck Hermsdorf GmbH	Germany	Y
Tantalum	H.C. Starck Inc.	United States of America	Y
Tantalum	H.C. Starck Ltd.	Japan	Y
Tantalum	H.C. Starck Smelting GmbH & Co. KG	Germany	Y
Tantalum	H.C. Starck Tantalum and Niobium GmbH	Germany	Y
Tantalum	Hengyang King Xing Lifeng New Materials Co., Ltd.	China	Y
Tantalum	Jiangxi Dinghai Tantalum & Niobium Co., Ltd.	China	Y
Tantalum	Jiangxi Tuohong New Raw Material	China	Y
Tantalum	JiuJiang JinXin Nonferrous Metals Co., Ltd.	China	Y
Tantalum	Jiujiang Janny New Material Co., Ltd.	China	
Tantalum	Jiujiang Tanbre Co., Ltd.	China	Y
Tantalum	Jiujiang Zhongao Tantalum & Niobium Co., Ltd.	China	Y
Tantalum	KEMET Blue Metals	Mexico	Y
Tantalum	KEMET Blue Powder	United States of America	Y
Tantalum	King-Tan Tantalum Industry Ltd.	China	
Tantalum	LSM Brasil S.A.	Brazil	Y
Tantalum	Metallurgical Products India Pvt., Ltd.	India	Y
Tantalum	Mineracao Taboca S.A.	Brazil	Y
Tantalum	Mitsui Mining and Smelting Co., Ltd.	Japan	Y
Tantalum	NPM Silmet AS	Estonia	Y
Tantalum	Nantong Tongjie Electrical Co., Ltd.	Unknown	
Tantalum	Ningxia Orient Tantalum Industry Co., Ltd.	China	Y
Tantalum	PM Kalco Inc	Unknown	
Tantalum	PRG Dooel	North Macedonia, Republic of	Y
Tantalum	Plansee SE	Austria	
Tantalum	QuantumClean	United States of America	Y
Tantalum	Resind Industria e Comercio Ltda.	Brazil	Y
Tantalum	Shanghai Jiangxi Metals Co., Ltd.	China	
Tantalum	Solikamsk Magnesium Works OAO	Russian Federation	Y
Tantalum	Taki Chemical Co., Ltd.	Japan	Y
Tantalum	Telex Metals	United States of America	Y
Tantalum	Ulba Metallurgical Plant JSC	Kazakhstan	Y
Tantalum	XinXing HaoRong Electronic Material Co., Ltd.	China	Y
Tantalum	Yanling Jincheng Tantalum & Niobium Co., Ltd.	China	Y
Tantalum	Yichun Jin Yang Rare Metal Co., Ltd.	China	
Tantalum	Zhuzhou Cemented Carbide Group Co., Ltd.	China	
Tantalum	50	E-M Solutions and RF/Microwave Tantalum Source Smelters	
Tin	Alpha	United States of America	Y

Tin	An Vinh Joint Stock Mineral Processing Company	Viet Nam	
Tin	Arco Alloys	Unknown	
Tin	CNMC (Guangxi) PGMA Co., Ltd.	China	
Tin	CV Ayi Jaya	Indonesia	Y
Tin	CV Dua Sekawan	Indonesia	Y
Tin	CV Gita Pesona	Indonesia	Y
Tin	CV United Smelting	Indonesia	Y
Tin	CV Venus Inti Perkasa	Indonesia	Y
Tin	Chenzhou Yunxiang Mining and Metallurgy Co., Ltd.	China	Y
Tin	Chifeng Dajingzi Tin Industry Co., Ltd.	China	Y
Tin	China Tin Group Co., Ltd.	China	Y
Tin	Chofu Works	Unknown	
Tin	Cooperativa Metalurgica de Rondonia Ltda.	Brazil	
Tin	Dongguan CIEPO Environmental Engineering Co., Ltd.	China	
Tin	Dongguan City Xida Soldering Tin Products Co.	China	
Tin	Dowa	Japan	Y
Tin	EM Vinto	Bolivia	Y
Tin	Electro-Mechanical Facility of the Cao Bang Minerals & Metallurgy Joint Stock Company	Viet Nam	
Tin	Estanho de Rondonia S.A.	Brazil	
Tin	Fenix Metals	Poland	Y
Tin	Fuji Metal Mining Corp.	Japan	
Tin	Gejiu City Fuxiang Industry and Trade Co., Ltd.	China	
Tin	Gejiu Fengming Metallurgy Chemical Plant	China	Y
Tin	Gejiu Jinye Mineral Company	China	
Tin	Gejiu Kai Meng Industry and Trade LLC	China	Y
Tin	Gejiu Non-Ferrous Metal Processing Co., Ltd.	China	Y
Tin	Gejiu Yunxi Group Corp.	China	
Tin	Gejiu Yunxin Nonferrous Electrolysis Co., Ltd.	China	Y
Tin	Gejiu Zili Mining And Metallurgy Co., Ltd.	China	Y
Tin	Guangdong Hanhe Non-Ferrous Metal Co., Ltd.	China	Y
Tin	Guangxi Nonferrous Metals Group	China	
Tin	Guangxi Zhongshan Jin Yi Smelting Co., Ltd.	China	
Tin	Guanyang Guida Nonferrous Metal Smelting Plant	China	Y
Tin	Hezhou Jinwei Tin Co., Ltd.	China	
Tin	Hongqiao Metals (Kunshan) Co., Ltd.	China	
Tin	HuiChang Hill Tin Industry Co., Ltd.	China	Y
Tin	Huichang Jinshunda Tin Co., Ltd.	China	Y
Tin	Hulterworth Smelter	Unknown	
Tin	Jiang Jia Wang Technology Co.	Unknown	
Tin	Jiangxi Ketai Advanced Material Co., Ltd.	China	
Tin	Jiangxi New Nanshan Technology Ltd.	China	Y
Tin	Jiangxi Yaosheng Tungsten Co., Ltd.	China	
Tin	Ju Tai Industrial Co., Ltd.	China	
Tin	LIAN JING	China	
Tin	Luna Smelter, Ltd.	Rwanda	Y

Tin	M/s ECO Tropical Resources	Singapore	
Tin	Ma An Shan Shu Guang Smelter Corp.	China	
Tin	Ma'anshan Weitai Tin Co., Ltd.	China	Y
Tin	Magnu's Minerais Metais e Ligas Ltda.	Brazil	Y
Tin	Malaysia Smelting Corporation (MSC)	Malaysia	Y
Tin	Materials Eco-Refining Co., Ltd.	Japan	
Tin	Melt Metais e Ligas S.A.	Brazil	Y
Tin	Metahub Industries Sdn. Bhd.	Malaysia	
Tin	Metallic Resources, Inc.	United States of America	Y
Tin	Metallo Belgium N.V.	Belgium	Y
Tin	Metallo Spain S.L.U.	Spain	Y
Tin	Metallum Group Holding NV	Belgium	
Tin	Minchali Metal Industry Co., Ltd.	Taiwan, Province of China	
Tin	Mineracao Taboca S.A.	Brazil	Y
Tin	Ming Li Jia smelt Metal Factory	China	
Tin	Minmetals Ganzhou Tin Co. Ltd.	China	
Tin	Minsur	Peru	Y
Tin	Mitsubishi Materials Corporation	Japan	Y
Tin	Modeltech Sdn Bhd	Malaysia	
Tin	Ney Metals and Alloys	Unknown	
Tin	Nghe Tinh Non-Ferrous Metals Joint Stock Company	Viet Nam	
Tin	O.M. Manufacturing (Thailand) Co., Ltd.	Thailand	Y
Tin	O.M. Manufacturing Philippines, Inc.	Philippines	Y
Tin	Old City Metals Processing Co., Ltd.	Unknown	
Tin	Operaciones Metalurgicas S.A.	Bolivia	Y
Tin	PT ATD Makmur Mandiri Jaya	Indonesia	Y
Tin	PT Aries Kencana Sejahtera	Indonesia	Y
Tin	PT Artha Cipta Langgeng	Indonesia	Y
Tin	PT Babel Inti Perkasa	Indonesia	Y
Tin	PT Babel Surya Alam Lestari	Indonesia	Y
Tin	PT Bangka Prima Tin	Indonesia	Y
Tin	PT Bangka Serumpun	Indonesia	Y
Tin	PT Bangka Tin Industry	Indonesia	Y
Tin	PT Belitung Industri Sejahtera	Indonesia	Y
Tin	PT Bukit Timah	Indonesia	Y
Tin	PT DS Jaya Abadi	Indonesia	Y
Tin	PT Eunindo Usaha Mandiri	Indonesia	
Tin	PT Inti Stania Prima	Indonesia	Y
Tin	PT Justindo	Indonesia	
Tin	PT Karimun Mining	Indonesia	Y
Tin	PT Kijang Jaya Mandiri	Indonesia	Y
Tin	PT Koba Tin	Indonesia	
Tin	PT Lautan Harmonis Sejahtera	Indonesia	Y
Tin	PT Menara Cipta Mulia	Indonesia	Y
Tin	PT Mitra Stania Prima	Indonesia	Y

Tin	PT NATARI	Indonesia	
Tin	PT O.M. Indonesia	Indonesia	
Tin	PT Panca Mega Persada	Indonesia	Y
Tin	PT Premium Tin Indonesia	Indonesia	Y
Tin	PT Prima Timah Utama	Indonesia	Y
Tin	PT Rajawali Rimba Perkasa	Indonesia	Y
Tin	PT Rajehan Ariq	Indonesia	Y
Tin	PT Refined Bangka Tin	Indonesia	Y
Tin	PT Sariwiguna Binasentosa	Indonesia	Y
Tin	PT Stanindo Inti Perkasa	Indonesia	Y
Tin	PT Sukses Inti Makmur	Indonesia	Y
Tin	PT Sumber Jaya Indah	Indonesia	Y
Tin	PT Timah Nusantara	Indonesia	
Tin	PT Timah Tbk Kundur	Indonesia	Y
Tin	PT Timah Tbk Mentok	Indonesia	Y
Tin	PT Tinindo Inter Nusa	Indonesia	Y
Tin	PT Tirus Putra Mandiri	Indonesia	Y
Tin	PT Tommy Utama	Indonesia	Y
Tin	PT Wahana Perkit Jaya	Indonesia	
Tin	Pan Light Corporation	Unknown	
Tin	Pongpipat Company Limited	Myanmar	
Tin	Precious Minerals and Smelting Limited	India	Active
Tin	Resind Industria e Comercio Ltda.	Brazil	Y
Tin	Rui Da Hung	Taiwan, Province of China	Y
Tin	Shan Tou Shi Yong Yuan Jin Shu Zai Sheng Co., Ltd.	China	
Tin	Shenzhen Hong Chang Metal Manufacturing Factory	China	
Tin	Sichuan Guanghan Jiangnan casting smelters	China	
Tin	Sigma Tin Alloy Co., Ltd.	China	
Tin	Soft Metais Ltda.	Brazil	Y
Tin	Solder Court Ltd.	Unknown	
Tin	Spectro Alloys Corp.	United States of America	
Tin	Super Ligas	Brazil	
Tin	Suzhou Nuonengda Chemical Co., Ltd.	China	
Tin	TAP	Unknown	
Tin	TIN PLATING GEJIU	China	
Tin	TONG LONG	Unknown	
Tin	Taicang City Nancang Metal Material Co., Ltd.	China	
Tin	Taiwan Huanliang	Unknown	
Tin	Taiwan high-tech Co., Ltd.	Taiwan, Province of China	
Tin	Taiwan's lofty Enterprises Ltd.	Taiwan, Province of China	
Tin	Thai Nguyen Mining and Metallurgy Co., Ltd.	Viet Nam	Y
Tin	Thailand Mine Factory	Unknown	
Tin	Thaisarco	Thailand	Y
Tin	Three green surface technology limited company	Unknown	
Tin	Tianshui Ling Bo Technology Co., Ltd.	China	

Tin	Tin Technology & Refining	United States of America	Y
Tin	Top-Team Technology (Shenzhen) Ltd.	China	
Tin	Tuyen Quang Non-Ferrous Metals Joint Stock Company	Viet Nam	
Tin	Untracore Co., Ltd.	Unknown	
Tin	VQB Mineral and Trading Group JSC	Viet Nam	
Tin	WELLEY	Unknown	
Tin	WUJIANG CITY LUXE TIN FACTORY	China	
Tin	White Solder Metalurgia e Mineracao Ltda.	Brazil	Y
Tin	XURI	China	
Tin	Xiamen Honglu Tungsten Molybdenum Co., Ltd.	Unknown	
Tin	Xianghualing Tin Industry Co., Ltd.		
Tin	Xin Furukawa Metal (Wuxi) Co., Ltd.	China	
Tin	Yifeng Tin	China	
Tin	Yiquan Manufacturing	Unknown	
Tin	Yuecheng Tin Co., Ltd.	China	
Tin	Yunnan Chengfeng Non-ferrous Metals Co., Ltd.	China	Y
Tin	Yunnan Chengo Electric Smelting Plant	China	
Tin	Yunnan Copper Zinc Industry Co., Ltd.	China	
Tin	Yunnan Industrial Co., Ltd.	China	
Tin	Yunnan Malipo Baiyi Kuangye Co.	China	
Tin	Yunnan Tin Company Limited	China	Y
Tin	Yunnan Yunfan Non-ferrous Metals Co., Ltd.	China	Y
Tin	Zhongshan JinYE Smelting Co.,Ltd	Unknown	
Tin	159 E-M Solutions and RF/Microwave Tin Source Smelters		
Tungsten	A.L.M.T. Corp.	Japan	Y
Tungsten	ACL Metais Eireli	Brazil	Y
Tungsten	Albasteel Industria e Comercio de Ligas Para Fundicao Ltd.	Brazil	Active
Tungsten	Asia Tungsten Products Vietnam Ltd.	Viet Nam	Y
Tungsten	CNMC (Guangxi) PGMA Co., Ltd.	China	
Tungsten	CP Metals Inc.	United States of America	Active
Tungsten	Chenzhou Diamond Tungsten Products Co., Ltd.	China	Y
Tungsten	China Molybdenum Co., Ltd.	China	
Tungsten	Chongyi Zhangyuan Tungsten Co., Ltd.	China	Y
Tungsten	DAIDO STEEL	Unknown	
Tungsten	Fujian Ganmin RareMetal Co., Ltd.	China	Y
Tungsten	Fujian Jinxin Tungsten Co., Ltd.	China	Y
Tungsten	GEM Co., Ltd.	China	
Tungsten	Ganzhou Beseem Ferrotungsten Co., Ltd.	China	
Tungsten	Ganzhou Haichuang Tungsten Co., Ltd.	China	Y
Tungsten	Ganzhou Huaxing Tungsten Products Co., Ltd.	China	Y
Tungsten	Ganzhou Jiangwu Ferrotungsten Co., Ltd.	China	Y
Tungsten	Ganzhou Seadragon W & Mo Co., Ltd.	China	Y
Tungsten	Ganzhou Yatai Tungsten Co., Ltd.	China	
Tungsten	Global Tungsten & Powders Corp.	United States of America	Y
Tungsten	Guangdong Xianglu Tungsten Co., Ltd.	China	Y

Tungsten	H.C. Starck Smelting GmbH & Co. KG	Germany	Y
Tungsten	H.C. Starck Tungsten GmbH	Germany	Y
Tungsten	Hunan Chenzhou Mining Co., Ltd.	China	Y
Tungsten	Hunan Chuangda Vanadium Tungsten Co., Ltd. Wuji	China	Y
Tungsten	Hunan Chunchang Nonferrous Metals Co., Ltd.	China	Y
Tungsten	Hunan Litian Tungsten Industry Co., Ltd.	China	Y
Tungsten	Hydrometallurg, JSC	Russian Federation	Y
Tungsten	JSC "Kirovgrad Hard Alloys Plant"	Russian Federation	Active
Tungsten	Japan New Metals Co., Ltd.	Japan	Y
Tungsten	Jiangwu H.C. Starck Tungsten Products Co., Ltd.	China	Y
Tungsten	Jiangxi Gan Bei Tungsten Co., Ltd.	China	Y
Tungsten	Jiangxi Minmetals Gao'an Non-ferrous Metals Co., Ltd.	China	
Tungsten	Jiangxi Richsea New Materials Co., Ltd.	China	
Tungsten	Jiangxi Tonggu Non-ferrous Metallurgical & Chemical Co., Ltd.	China	Y
Tungsten	Jiangxi Xianglu Tungsten Co., Ltd.	China	Active
Tungsten	Jiangxi Xinsheng Tungsten Industry Co., Ltd.	China	Y
Tungsten	Jiangxi Xiushui Xianggan Nonferrous Metals Co., Ltd.	China	
Tungsten	Jiangxi Yaosheng Tungsten Co., Ltd.	China	Y
Tungsten	KGETS Co., Ltd.	Korea, Republic of	Y
Tungsten	Kennametal Fallon	United States of America	Y
Tungsten	Kennametal Huntsville	United States of America	Y
Tungsten	Lianyou Metals Co., Ltd.	Taiwan, Province of China	Y
Tungsten	Malipo Haiyu Tungsten Co., Ltd.	China	Y
Tungsten	Masan Tungsten Chemical LLC (MTC)	Viet Nam	Y
Tungsten	Mehra Ferro-Alloys Pvt. Ltd.	India	
Tungsten	Moliren Ltd.	Russian Federation	Y
Tungsten	NPP Tyazhmetprom LLC	Russian Federation	Active
Tungsten	Niagara Refining LLC	United States of America	Y
Tungsten	Philippine Chuangxin Industrial Co., Inc.	Philippines	Y
Tungsten	South-East Nonferrous Metal Company Limited of Hengyang City	China	
Tungsten	Tejing (Vietnam) Tungsten Co., Ltd.	Viet Nam	Y
Tungsten	Toshiba Material Co., Ltd.	Unknown	
Tungsten	Tungsten Diversified Industries LLC	United States of America	
Tungsten	Unecha Refractory metals plant	Russian Federation	Y
Tungsten	Vietnam Youngsun Tungsten Industry Co., Ltd.	Viet Nam	
Tungsten	WOLFRAM Company CJSC	Russian Federation	
Tungsten	Wolfram Bergbau und Hutten AG	Austria	Y
Tungsten	Woltech Korea Co., Ltd.	Korea, Republic of	Y
Tungsten	Xiamen Tungsten (H.C.) Co., Ltd.	China	Y
Tungsten	Xiamen Tungsten Co., Ltd.	China	Y
Tungsten	Xinfeng Huarui Tungsten & Molybdenum New Material Co., Ltd.	China	Y
Tungsten	Xinhai Rendan Shaoguan Tungsten Co., Ltd.	China	Y
Tungsten	Zhangzhou Chuen Bao Apt Smeltery Co., Ltd.	China	
Tungsten	64	E-M Solutions and RF/Microwave Tungsten Source Smelters	
	484	Total E-M Solutions and RF/Microwave Source Smelters	