
**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.)

1665 Scenic Avenue, Suite 250
Costa Mesa, California
(Address of principal executive offices)

92626
(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, 2018 to December 31, 2018.
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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 and 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.](#)

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 24, 2019

Exhibit 1.01 Conflict Minerals Report

This is the Conflict Minerals Report of TTM Technologies, Inc. (the “Company” or “TTM”) for the calendar year 2018 (ended December 31, 2018) 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 from engineering support to prototype development through final mass production. 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 touchscreen tablets, 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. On April 18, 2018, TTM acquired all of the equity interests of Anaren, Inc. (“Anaren”), which was a leading designer and provider of mission-critical RF solutions, microelectronics, and microwave components and assemblies for the wireless infrastructure and aerospace and defense electronic markets. Anaren’s products are incorporated into this report for calendar year 2018 and are referred to herein as “Anaren products.”

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

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- 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/static-files/08e705e8-6139-41c3-b71c-520fc14b90bc>. The content of our website as referred to in this Form 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 Anaren products manufactured in 2018 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 during calendar year 2018 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 Anaren 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 Anaren supply chain smelters was updated at the end of 2018. 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 during the 2018 calendar year:

Metal	Smelter Name		Country
Gold	Aida Chemical Industries Co., Ltd.	-	Japan
Gold	Allgemeine Gold-und Silberscheideanstalt A.G.	-	Germany
Gold	Argor-Heraeus S.A.	-	Switzerland
Gold	Emirates Gold DMCC	-	United Arab Emirates
Gold	L'Orfebre S.A.	-	Andorra
Gold	Metalor Technologies (Suzhou) Ltd.	-	China
Gold	Metalurgica Met-Mex Penoles S.A. De C.V.	-	Mexico
Gold	Ohura Precious Metal Industry Co., Ltd.	-	Japan
Gold	PAMP S.A.	-	Switzerland
Gold	Rand Refinery (Pty) Ltd.	-	South Africa
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

Metal	Smelter Name		Country
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	Jiujiang Zhongao Tantalum & Niobium Co., Ltd.	-	China
Tantalum	KEMET Blue Metals	-	Mexico
Tantalum	KEMET Blue Powder	-	United States of America
Tantalum	Mitsui Mining and Smelting Co., Ltd.	-	Japan
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
Tantalum	Yichun Jin Yang Rare Metal Co., Ltd.	-	China
Tin	Alpha	-	United States of America
Tin	Gejiu Non-Ferrous Metal Processing Co., Ltd.	-	China
Tin	Malaysia Smelting Corporation (MSC)	-	Malaysia
Tin	Metallo Belgium N.V.	-	Belgium
Tin	Metallo Spain S.L.U.	-	Spain
Tin	O.M. Manufacturing (Thailand) Co., Ltd.	-	Thailand
Tin	PT Timah Tbk Mentok	-	Indonesia
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	Niagara Refining LLC	-	United States of America
Tungsten	Nui Phao H.C. Starck Tungsten Chemicals Manufacturing LLC	-	Viet Nam
Tungsten	Vietnam Youngsun Tungsten Industry Co., Ltd.	-	Viet Nam
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 to indicate 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 Anaren 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 "Conformant to the Conflict Free Sourcing Protocol" 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, 2017 and the relevant Form SD was submitted to SEC and posted on TTM's external web site on May 25, 2018.

(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 Anaren facilities that were fabricated to customer design and material specifications and Anaren products manufactured in accordance with Anaren designs.

Appendix I contains a listing of smelters provided by TTM's PCB supply chain for the reporting period. 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 Anaren supply chain. 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 Conflict Free Smelter Program. 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. TTM believes that the applicable Conflict Minerals smelters for 100% of its PCB and 87% of its E-M Solutions and Anaren products have been identified. 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 2018

Appendix II

Conflict Minerals Sources to E-M Solutions and Anaren Global Operations 2018

Conflict Minerals Sources to PCB Global Operations 2018

<u>Metal</u>	<u>Metal Total</u>	<u>Smelter Name</u>	<u>Smelter Country</u>	<u>Validated CFS?</u>
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		CCR Refinery - Glencore Canada Corporation	Canada	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		Republic Metals Corporation	United States of America	1
Gold		Royal Canadian Mint	Canada	Y

Metal	Metal Total	Smelter Name	Smelter Country	Validated CFS?
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		The Refinery of Shandong Gold Mining Co., Ltd.	China	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		Western Australian Mint (T/a The Perth Mint)	Australia	Y
Gold		Zhongyuan Gold Smelter of Zhongjin Gold Corporation	China	Y
Gold	48	PCB Gold Source Smelters		
Tin		Chenzhou Yunxiang Mining and Metallurgy Co., Ltd.	China	Y
Tin		Alpha	United States of America	Y
Tin		PT Aries Kencana Sejahtera	Indonesia	1
Tin		CV United Smelting	Indonesia	Y
Tin		EM Vinto	Bolivia	Y
Tin		Fenix Metals	Poland	Y
Tin		Gejiu Non-Ferrous Metal Processing Co., Ltd.	China	Y
Tin		China Tin Group Co., Ltd.	China	Y
Tin		Malaysia Smelting Corporation (MSC)	Malaysia	Y
Tin		Metallic Resources, Inc.	United States of America	Y
Tin		Mineracao Taboca S.A.	Brazil	Y
Tin		Minsur	Peru	Y
Tin		Mitsubishi Materials Corporation	Japan	Y
Tin		Jiangxi New Nanshan Technology Ltd.	China	Y
Tin		Operaciones Metalurgical S.A.	Bolivia	Y
Tin		PT Artha Cipta Langgeng	Indonesia	Y
Tin		PT Babel Inti Perkasa	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	1
Tin		PT Mitra Stania Prima	Indonesia	Y
Tin		PT Panca Mega Persada	Indonesia	Y
Tin		PT Prima Timah Utama	Indonesia	Y
Tin		PT Refined Bangka Tin	Indonesia	Y
Tin		PT Sariwiguna Binasentosa	Indonesia	Y
Tin		PT Stanindo Inti Perkasa	Indonesia	Y
Tin		PT Timah (Persero) Tbk Kundur	Indonesia	Y
Tin		PT Timah (Persero) Tbk Mentok	Indonesia	Y

Metal	Metal Total	Smelter Name	Smelter Country	Validated CFS?
Tin		PT Tinindo Inter Nusa	Indonesia	Y
Tin		PT Tommy Utama	Indonesia	Y
Tin		Rui Da Hung	Taiwan	Y
Tin		Thaisarco	Thailand	Y
Tin		Gejiu Yunxin Nonferrous Electrolysis Co., Ltd.	China	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		CV Venus Inti Perkasa	Indonesia	Y
Tin		PT Inti Stania Prima	Indonesia	Y
Tin		CV Ayi Jaya	Indonesia	1
Tin		CV Dua Sekawan	Indonesia	Y
Tin		CV Tiga Sekawan	Indonesia	Y
Tin		Metallo Belgium N.V.	Belgium	Y
Tin		PT Bangka Prima Tin	Indonesia	Y
Tin		PT Sukses Inti Makmur	Indonesia	Y
Tin		PT Menara Cipta Mulia	Indonesia	Y
Tin		Gejiu Jinye Mineral Company	China	1
Tin		PT Lautan Harmonis Sejahtera	Indonesia	Y
Tin		Guangdong Hanhe Non-Ferrous Metal Co., Ltd.	China	Y
Tin		PT Bangka Serumpun	Indonesia	1
Tin	51	PCB Tin Source Smelters		
	99	Total PCB Source Smelters		

¹ RMI Conformant prior to ceasing operations.

Conflict Minerals Sources to E-M Solutions and Anaren Global Operations 2018

<u>Metal</u>	<u>Metal Total</u>	<u>Smelter Name</u>	<u>Smelter Country</u>	<u>Validated CFS?</u>
Gold		8853 S.p.A.	Italy	Y
Gold		AGoSI	Germany	
Gold		ASARCO LLC	United States	
Gold		AU Traders and Refiners	South Africa	Y
Gold		AURA-II	United States of America	
Gold		Abington Reldan Metals, LLC	United States of America	
Gold		Academy Precious Metals (China) Co. LTD	China	
Gold		Advanced Chemical Company	United States of America	Y
Gold		African Gold Refinery	Uganda	
Gold		Aida Chemical Industries Co., Ltd.	Japan	Y
Gold		Aktyubinsk Copper Company TOO	Kazakhstan	
Gold		Aktyubinsk Copper Company TOO	Russian Federation	
Gold		Al Etihad Gold Refinery DMCC	United Arab Emirates	Y
Gold		Allgemeine Gold-und Silberscheideanstalt A.G.	Germany	Y
Gold		Almalyk Mining and Metallurgical Complex (AMMC)	Uzbekistan	Y
Gold		Alpha assembly	United States of America	
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		Audiua, Escardida	Chile	
Gold		Aurubis AG	Germany	Y
Gold		Australia and New Zealand Banking Group Limited (ANZ)	Australia	
Gold		Bangalore Refinery	India	Y
Gold		Bangalore Refinery Pvt Ltd	India	
Gold		Bangko Sentral ng Pilipinas (Central Bank of the Philippines)	Philippines	Y
Gold		Bauer Walser AG	Germany	
Gold		Boliden AB	Sweden	Y
Gold		C. Hafner GmbH + Co. KG	Germany	Y
Gold		CCR Refinery - Glencore Canada Corporation	Canada	Y
Gold		CHEONG HING REFINERY WORKS LTD	Hong Kong	
Gold		CORE PMG	Germany	
Gold		Caridad	Mexico	
Gold		Cendres + Metaux S.A.	Switzerland	Y

Metal	Metal Total	Smelter Name	Smelter Country	Validated CFS?
Gold		Central Bank of the DPR of Korea	Korea, Republic of	
Gold		Chengfeng Metals Co Pte Ltd	Singapore	
Gold		Chimet S.p.A.	Italy	Y
Gold		Chugai Mining	Japan	Active
Gold		Codelco	Chile	
Gold		Computex Taipei	Taiwan, Province of China	
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	Y
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.	Japan	Y
Gold		Eldorado Gold Corporation	Canada	
Gold		Elemetal Refining, LLC	United States of America	
Gold		Emirates Gold DMCC	United Arab Emirates	Y
Gold		Engelhard London	United Kingdom	
Gold		FAGGI ENRICO SPA	Italy	
Gold		Faggi Enrico S.p.A.	Italy	
Gold		Fidelity Printers and Refiners Ltd.	Zimbabwe	
Gold		Fujairah Gold FZC	United Arab Emirates	
Gold		GCC Gujrat Gold Centre Pvt. Ltd.	India	
Gold		Geib Refining Corporation	United States of America	Y
Gold		Gold Refinery of Zijin Mining Group Co., Ltd.	China	Y
Gold		Great Wall Precious Metals Co., Ltd. of CBPM	China	
Gold		Guangdong Jinding Gold Limited	China	
Gold		Guoda Safina High-Tech Environmental Refinery Co., Ltd.	China	
Gold		Hangzhou Fuchunjiang Smelting Co., Ltd.	China	
Gold		Harima Smelter	Japan	
Gold		Harmony Gold Mining Company Limited	South Africa	
Gold		HeeSung Metal Ltd.	Korea, Republic of	Y
Gold		Heimerle + Meule GmbH	Germany	Y
Gold		Henan Yuguang Gold and Lead Co., Ltd	China	
Gold		Heraeus Metals Hong Kong Ltd.	China	Y
Gold		Heraeus Precious Metals GmbH & Co. KG	Germany	Y
Gold		Hon Hai / Foxconn Technology Group	Taiwan	
Gold		House of Currency of Brazil (Casa da Moeda do Brazil)	Brazil	
Gold		Hunan Chenzhou Mining Co., Ltd.	China	
Gold		Hunan Guiyang yinxing Nonferrous Smelting Co., Ltd.	China	
Gold		HwaSeong CJ CO., LTD.	Korea, Republic of	

Metal	Metal Total	Smelter Name	Smelter Country	Validated CFS?
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		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		Johnson Matthey Inc	United States of America	
Gold		Johnson Matthey Ltd	Canada	
Gold		K.A.Rasmussen as	Norway	
Gold		KGHM Polska Miedz Spolka Akcyjna	Poland	Active
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 Metal Co., Ltd.	Korea, Republic of	
Gold		Korea Zinc Co., Ltd.	Korea, Republic of	Y
Gold		Kyrgyzaltyn JSC	Kyrgyzstan	Y
Gold		Kyshtym Copper-Electrolytic Plant ZAO	Russian Federation	
Gold		L'Orfebvre S.A.	Andorra	Y
Gold		L'azurde Company For Jewelry	Saudi Arabia	
Gold		LINXENS	France	
Gold		LS-NIKKO Copper Inc.	Korea, Republic of	Y
Gold		Lee Iken	Switzerland	
Gold		Lingbao Gold Co., Ltd.	China	
Gold		Lingbao Jinyuan Tonghui Refinery Co., Ltd.	China	
Gold		London Bullion Market Association	Unknown	
Gold		Luoyang Zijin Yinhuai 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		Metahub Industries Sdn. Bhd.	Malaysia	
Gold		Metallo Chimique	Belgium	
Gold		Metalor Switzerland	Switzerland	
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

Metal	Metal Total	Smelter Name	Smelter Country	Validated CFS?
Gold		Metalor USA Refining Corporation	United States of America	Y
Gold		Metalurgica Met-Mex Penoles S.A. De C.V.	Mexico	Y
Gold		Minsur	Peru	
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	Active
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		Novosibirsk	Russian Federation	
Gold		Nyrstar Metal	Australia	
Gold		OJSC "The Gulidov Krasnoyarsk Non-Ferrous Metals Plant" (OJSC Krastsvetmet)	Russian Federation	Y
Gold		OJSC Kolyma Refinery	Russian Federation	
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		PT Koba Tin	Indonesia	
Gold		PX Precinox S.A.	Switzerland	Y
Gold		Pease & Curren	United States of America	
Gold		Penglai Penggang Gold Industry Co., Ltd.	China	
Gold		Philippine Associated Smelting and Refining Corporation	Philippines	
Gold		Planta Recuperadora de Metales SpA	Chile	Y
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		Refinery of Seemine Gold Co., Ltd.	China	
Gold		Republic Metals Corporation	United States of America	
Gold		Royal Canadian Mint	Canada	Y
Gold		SAAMP	France	Y
Gold		SAFINA A.S.	Czech Republic	
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	

Metal	Metal Total	Smelter Name	Smelter Country	Validated CFS?
Gold		Safimet S.p.A	Italy	Y
Gold		Sai Refinery	India	
Gold		Samduck Precious Metals	Korea, Republic of	
Gold		Samhwa non-ferrous Metal ind.co.ltd	Unknown	
Gold		Samwon Metals Corp.	Korea, Republic of	
Gold		Schone Edelmetaal B.V.	Netherlands	
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		Sichuan Tianze Precious Metals Co., Ltd.	China	Y
Gold		Singway Technology Co., Ltd.	Taiwan, Province of China	Y
Gold		So Accurate Group, Inc.	United States of America	
Gold		Solar Applied Materials Technology Corp.	Taiwan, Province of China	Y
Gold		State Research Institute Center for Physical Sciences and Technology	Lithuania	
Gold		Sudan Gold Refinery	Sudan	
Gold		Sumitomo Metal Mining Co., Ltd.	Japan	Y
Gold		SungEel HiMetal Co., Ltd.	Korea, Republic of	Y
Gold		T.C.A S.p.A	Italy	Y
Gold		THE HUTTI GOLD MINES CO.LTD	India	
Gold		TOO Tau-Ken-Altyn	Kazakhstan	
Gold		Tanaka Kikinzoku Kogyo K.K.	Japan	Y
Gold		Thaisarco	Thailand	
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		UBS AG Bahnhofstr.	Switzerland	
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		Uniforce Metal Industrial Corp.	Hong Kong	
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		WIELAND Edelmetalle GmbH	Germany	Y
Gold		Western Australian Mint (T/a The Perth Mint)	Australia	Y
Gold		Yamakin Co., Ltd.	Japan	Y
Gold		Yokohama Metal Co., Ltd.	Japan	Y
Gold		Yunnan Copper Industry Co., Ltd.	China	

Metal	Metal Total	Smelter Name	Smelter Country	Validated CFS?
Gold		Zhongkuang Gold Industry Co., Ltd	China	
Gold		Zhongyuan Gold Smelter of Zhongjin Gold Corporation	China	Y
Gold		lianqi plating Ltd	Taiwan	
Gold		rui sheng	Indonesia	
Gold	209	E-M Solutions and Anaren Gold Source Smelters		
Tantalum		A&M Minerals Limited	Unknown	
Tantalum		AMG Advanced Metallurgical Group N.V. (formerly Metallurg Inc., aka GfE)	Brazil	
Tantalum		Advanced Metallurgical Group N.V.	United States	
Tantalum		Advanced Metallurgical Group N.V. (AMG)	United States of America	
Tantalum		Advanced Metallurgical Group N.V. (AMG)	United States	
Tantalum		Asaka Riken Co., Ltd.	Japan	Y
Tantalum		Avon Specialty Metals	United Kingdom	
Tantalum		B. AIZU, JAPAN (OCTOBER 13, 2010)	Japan	
Tantalum		BOHLER Schmiedetechn	Austria	
Tantalum		Changsha South Tantalum Niobium Co., Ltd.	China	Y
Tantalum		China Shenzhen Morgan Sputtering Targets & Technology Co., Ltd.	China	
Tantalum		D Block Metals, LLC	United States of America	Y
Tantalum		Duoluoshan	China	
Tantalum		E.S.R. Electronics	United States of America	
Tantalum		Ethiopian Minerals Development Share Company	Ethiopia	
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 GmbH	Germany	
Tantalum		H.C. Starck Hermsdorf GmbH	Germany	Y
Tantalum		H.C. Starck Inc.	United States of America	Y
Tantalum		H.C. Starck Laufenburg	Germany	
Tantalum		H.C. Starck Ltd.	Japan	Y
Tantalum		H.C. Starck Smelting GmbH & Co. KG	Germany	Y
Tantalum		H.C. Starck Surface Technology and Ceramic Powders GmbH	Germany	
Tantalum		H.C. Starck Tantalum and Niobium GmbH	Germany	Y
Tantalum		Hengyang King Xing Lifeng New Materials Co., Ltd.	China	Y
Tantalum		Hi-Temp Specialty Metals, Inc.	United States of America	
Tantalum		JX Nippon Mining & Metals Co., Ltd.	Japan	
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

Metal	Metal Total	Smelter Name	Smelter Country	Validated CFS?
Tantalum		Jiujiang Janny New Material Co., Ltd.	China	Y
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		NTET, Thailand	Thailand	
Tantalum		Ningxia Non-ferrous Metal Smeltery	China	
Tantalum		Ningxia Orient Tantalum Industry Co., Ltd.	China	Y
Tantalum		Phoenix Metal Ltd.	Rwanda	
Tantalum		Plansee	Austria	
Tantalum		Plansee SE	Austria	
Tantalum		Plansee SE Liezen	Austria	
Tantalum		Plansee SE Reutte	Austria	
Tantalum		Power Resources Ltd.	North Macedonia, Republic of	Y
Tantalum		QuantumClean	United States of America	Y
Tantalum		Resind Industria e Comercio Ltda.	Brazil	Y
Tantalum		Rui Da Hung	Taiwan	
Tantalum		SANDVIK HARD MAT.	France	
Tantalum		Solikamsk Magnesium Works OAO	Russian Federation	Y
Tantalum		Taki Chemical Co., Ltd.	Japan	Y
Tantalum		Talison Minerals Pty Ltd	Australia	
Tantalum		Tantalite Resources	South Africa	
Tantalum		Telex Metals	United States of America	Y
Tantalum		Tranzact, Inc.	United States of America	
Tantalum		Ulba Metallurgical Plant JSC	Kazakhstan	Y
Tantalum		Wolfram Company CJSC	Russian Federation	
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	73	E-M Solutions and Anaren Tantalum Source Smelters		
Tin		5N PLUS UK ltd	United Kingdom	
Tin		5N Plus	Canada	
Tin		ACT JAPAN	Japan	

Metal	Metal Total	Smelter Name	Smelter Country	Validated CFS?
Tin		ACuPowder International, LLC	United States	
Tin		ALLTECH METAL	France	
Tin		ALMAG	Italy	
Tin		Al-Rec LLC	United States	
Tin		Allgemeine Gold- und Silberscheideanstalt AG	Germany	
Tin		Alpha	United States of America	Y
Tin		Amalgamated Metal Corporation PLC	Unknown	
Tin		Amalgamet Inc	Peru	
Tin		An Thai Minerals Co., Ltd.	Viet Nam	
Tin		An Thai Minerals Company Limited	Unknown	
Tin		An Vinh Joint Stock Mineral Processing Company	Viet Nam	
Tin		An Xin Xuan Xin Yue You Se Jin Shu Co. Ltd.	China	
Tin		B T Solders Pvt Ltd	India	
Tin		BML	Indonesia	
Tin		Baoshida Swissmetall	Switzerland	
Tin		Best Metais e Soldas SA	Brazil	
Tin		Bonoka.Beliting INDONESIA	Indonesia	
Tin		CHIA FAR	Taiwan	
Tin		CIMSA, S.A.	Spain	
Tin		CINTAS METALICAS S.A	Spain	
Tin		CNMC (Guangxi) PGMA Co., Ltd.	China	
Tin		CSC Pure Technologies	Russian Federation	
Tin		CV Ayi Jaya	Indonesia	Y
Tin		CV Dua Sekawan	Indonesia	Y
Tin		CV Duta Putra Bangka	Indonesia	
Tin		CV Gita Pesona	Indonesia	Y
Tin		CV Makmur Jaya	Indonesia	
Tin		CV Prima Timah Utama	Indonesia	
Tin		CV United Smelting	Indonesia	Y
Tin		CV Venus Inti Perkasa	Indonesia	Y
Tin		Chenzhou Yunxiang Mining and Metallurgy Co., Ltd.	China	Y
Tin		Cheman Metal Industrial Corp.	Taiwan	
Tin		Chifeng Dajingzi Tin Industry Co., Ltd.	China	Y
Tin		China Tin Group Co., Ltd.	China	Y
Tin		Cooperativa Metalurgica de Rondonia Ltda.	Brazil	
Tin		DUKSAN HI-METAL	Korea, Republic of	
Tin		Da Nang Processing Import and Export Joint Stock	Viet Nam	
Tin		Dongguan CiEXPO Environmental Engineering Co., Ltd.	China	Active
Tin		Dowa	Japan	Y
Tin		E-tech Philippines	Philippines	
Tin		EM Vinto	Bolivia (Plurinational State of)	Y
Tin		Electro-Mechanical Facility of the Cao Bang Minerals & Metallurgy Joint Stock Company	Viet Nam	

Metal	Metal Total	Smelter Name	Smelter Country	Validated CFS?
Tin		Electroloy Metal Co. Ltd	Singapore	
Tin		Empresa Metal�rgica Vinto (Government, 100%)	Bolivia (Plurinational State of)	
Tin		Estanho de Rondonia S.A.	Brazil	
Tin		Exim Americana	Mexico	
Tin		Eximetal S.A.	Argentina	
Tin		Feinh�tte Halsbr�cke GmbH	Germany	
Tin		Fenix Metals	Poland	Y
Tin		Fuji Metal Mining	Japan	
Tin		Fuji Metal Mining Corp.	Thailand	
Tin		Gejiu Fengming Metallurgy Chemical Plant	China	Y
Tin		Gejiu Jinye Mineral Company	China	Y
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		Gejiu Zili Mining And Metallurgy Co., Ltd.	China	Y
Tin		Global Advanced Metals Pty Ltd	Australia	
Tin		Grik Perak Malaysia	Malaysia	
Tin		Guangdong Hanhe Non-Ferrous Metal Co., Ltd.	China	Y
Tin		Guangxi Non-ferrous Metals Group Co..Ltd	China	
Tin		Guanyang Guida Nonferrous Metal Smelting Plant	China	Y
Tin		H. Kramer & Co.	United States of America	
Tin		Hai Yuxin Xi Zhuhai Co., Ltd.	China	
Tin		Hana-High Metal	Malaysia	
Tin		Hayes Metals	New Zealand	
Tin		Heraeus Metals Hong Kong Ltd.	Hong Kong	
Tin		Hezhou Jinwei Tin Co., Ltd	China	
Tin		Hongqiao Metals (Kunshan) Co., Ltd.	China	
Tin		HuiChang Hill Tin Industry Co., Ltd.	China	
Tin		Huichang Jinshunda Tin Co., Ltd.	China	Y
Tin		IRM	Canada	
Tin		Ing. Josef Korinek	Czech Republic	
Tin		Jean GOLDSCHMIDT INTERNATIONAL S.A.	Belgium	
Tin		Jiangxi Ketai Advanced Material Co., Ltd.	China	
Tin		Jiangxi New Nanshan Technology Ltd.	China	Y
Tin		Kovohute Pribram Nastupnicka, A.S.	Czech Republic	
Tin		Linqu Xianggui Smelter Co., Ltd.	China	
Tin		Liuzhhou China Tin	China	
Tin		M&R Claushuis BV	Netherlands	
Tin		MCP Mining & Chemical Products Ltd. UK	United Kingdom of Great Britain And Northern Ireland	
Tin		MINERA MEXICO	Mexico	
Tin		Magnu's Minerais Metais e Ligas Ltda.	Brazil	Y

Metal	Metal Total	Smelter Name	Smelter Country	Validated CFS?
Tin		Malaysia Smelting Corporation (MSC)	Malaysia	Y
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		Mineracao Taboca S.A.	Brazil	Y
Tin		Minsur	Peru	Y
Tin		Misue Tin Smelter and Refinery	Peru	
Tin		Mitsubishi Materials Corporation	Japan	Y
Tin		Modeltech Sdn Bhd	Malaysia	Y
Tin		Nghe Tinh Non-Ferrous Metals Joint Stock Company	Viet Nam	
Tin		Nortena de Metales, SA	Spain	
Tin		Novosibirsk Integrated Tin Works	Russian Federation	
Tin		Novosibirsk Processing Plant Ltd.	Russian Federation	
Tin		O.M. Manufacturing (Thailand) Co., Ltd.	Thailand	Y
Tin		O.M. Manufacturing Philippines, Inc.	Philippines	Y
Tin		Operaciones Metalurgicas S.A.	Bolivia (Plurinational State of)	Y
Tin		Outotec	Australia	
Tin		PIREKS	Turkey	
Tin		PT ATD Makmur Mandiri Jaya	Indonesia	Y
Tin		PT Alam Lestari Kencana	Indonesia	
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 Kudai Tin	Indonesia	
Tin		PT Bangka Prima Tin	Indonesia	Y
Tin		PT Bangka Putra Karya	Indonesia	
Tin		PT Bangka Serumpun	Indonesia	Y
Tin		PT Bangka Timah Utama Sejahtera	Indonesia	
Tin		PT Bangka Tin Industry	Indonesia	Y
Tin		PT Belitung Industri Sejahtera	Indonesia	Y
Tin		PT BilliTin Makmur Lestari	Indonesia	
Tin		PT Bukit Timah	Indonesia	Y
Tin		PT Cipta Persada Mulia	Indonesia	
Tin		PT DS Jaya Abadi	Indonesia	Y
Tin		PT Eunindo Usaha Mandiri	Indonesia	
Tin		PT Fang Di MulTindo	Indonesia	
Tin		PT HP Metals Indonesia	Indonesia	
Tin		PT Inti Stania Prima	Indonesia	Y

Metal	Metal Total	Smelter Name	Smelter Country	Validated CFS?
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 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	Active
Tin		PT Rajehan Ariq	Indonesia	Y
Tin		PT Refined Bangka Tin	Indonesia	Y
Tin		PT Sariwiguna Binasentosa	Indonesia	Y
Tin		PT Seirama Tin Investment	Indonesia	
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		PT Yinchendo Mining Industry	Indonesia	
Tin		Phoenix Metal Ltd.	Rwanda	
Tin		Pohang Iron and Steel Co. Ltd.	Korea, Republic of	
Tin		Pongpipat Company Limited	Myanmar	
Tin		Qualitek delta philippines inc.	Philippines	
Tin		Recial - Reciclagem de Aluminios, SA	Portugal	
Tin		Resind Industria e Comercio Ltda.	Brazil	Y
Tin		Rui Da Hung	Taiwan, Province of China	Y
Tin		SARBAK	Turkey	
Tin		SENJU METAL INDUSTRY CO.,LTD.	Bolivia	
Tin		Senju Metal Industry Co., Ltd.	Malaysia	
Tin		Soft Metais Ltda.	Brazil	Y
Tin		Super Ligas	Brazil	
Tin		Thai Nguyen Mining and Metallurgy Co., Ltd.	Viet Nam	Y

<u>Metal</u>	<u>Metal Total</u>	<u>Smelter Name</u>	<u>Smelter Country</u>	<u>Validated CFS?</u>
Tin		Thaisarco	Thailand	Y
Tin		Tin Technology & Refining	United States of America	Y
Tin		Tuyen Quang Non-Ferrous Metals Joint Stock Company	Viet Nam	
Tin		Univertical International	American Samoa	
Tin		Univertical International (Suzhou) Co., Ltd	China	
Tin		Untracore Co.,Ltd.	Singapore	
Tin		VQB Mineral and Trading Group JSC	Viet Nam	
Tin		White Solder Metalurgia e Mineracao Ltda.	Brazil	Y
Tin		Xianghualing Tin Industry Co., Ltd.	China	
Tin		Xinmao Xiye (Tin Company)	China	
Tin		Yunnan Chengfeng Non-ferrous Metals Co., Ltd.	China	Y
Tin		Yunnan Gejiu Jinye Minerals	China	
Tin		Yunnan Tin Company Limited	China	Y
Tin		Zhongshan Jinye Smelting Co., Ltd	China	
Tin		Zhongshan Jinye Smelting Co.,Ltd	Unknown	
Tin		univertical international (suzhou) co. ltd	China	
Tin	184	E-M Solutions and Anaren Tin Source Smelters		
Tungsten		A.L.M.T. Corp.	China	
Tungsten		A.L.M.T. Corp.	Taiwan	
Tungsten		A.L.M.T. Corp.	Japan	Y
Tungsten		A.L.M.T. Corp.	United States	
Tungsten		ACL Metais Eireli	Brazil	Y
Tungsten		ATI Metalworking Products	United States of America	
Tungsten		Aida Chemical Industries Co., Ltd.	Japan	
Tungsten		Air Liquide Far Eastern	Korea, Republic of	
Tungsten		Alloys Imply	France	
Tungsten		Asia Tungsten Products Vietnam Ltd.	Viet Nam	Y
Tungsten		Chenzhou Diamond Tungsten Products Co., Ltd.	China	Y
Tungsten		Chongyi Zhangyuan Tungsten Co., Ltd.	China	Y
Tungsten		Chunbao Carbide Science & Technology Co.,Ltd	Taiwan	
Tungsten		DAIDO STEEL	Japan	
Tungsten		DaeguTec Ltd.	Unknown	
Tungsten		Dayu Jincheng Tungsten Industry Co., Ltd.	China	
Tungsten		Dayu Weiliang Tungsten Co., Ltd.	China	
Tungsten		Fujian Jinxin Tungsten Co., Ltd.	China	Y
Tungsten		Ganxian Shirui New Material Co., Ltd.	China	
Tungsten		Ganzhou BESEEM Ferrotungsten Co. Ltd.	China	
Tungsten		Ganzhou Haichuang Tungsten Co., Ltd.	China	Y
Tungsten		Ganzhou Haichuang Tungsten Industry Co., Ltd. [Ganzhou Tejing Tungsten & Molybdenum Co., Ltd.(GZTJ)]	China	
Tungsten		Ganzhou Huaxing Tungsten Products Co., Ltd.	China	Y
Tungsten		Ganzhou Jiangwu Ferrotungsten Co., Ltd.	China	Y
Tungsten		Ganzhou Non-ferrous Metals Smelting Co., Ltd.	China	

Metal	Metal Total	Smelter Name	Smelter Country	Validated CFS?
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 Group	Germany	
Tungsten		H.C. Starck Smelting GmbH & Co. KG	Germany	Y
Tungsten		H.C. Starck Tungsten GmbH	Germany	Y
Tungsten		HC Starck GmbH	Russian Federation	
Tungsten		Heimerle + Meule Group	Spain	
Tungsten		Heraeus Deutschland Heraeus GmbH & Co. KG	Germany	
Tungsten		Hunan Chenzhou Mining Co., Ltd.	China	Y
Tungsten		Hunan Chuangda Vanadium Tungsten Co., Ltd. Wuji	China	Y
Tungsten		Hunan Chuangda Vanadium Tungsten Co., Ltd. Yanglin	China	
Tungsten		Hunan Chunchang Nonferrous Metals Co., Ltd.	China	Y
Tungsten		Hunan Litian Tungsten Industry Co., Ltd.	China	Active
Tungsten		Hydrometallurg, JSC	Russian Federation	Y
Tungsten		Japan New Metals Co., Ltd.	Japan	Y
Tungsten		Jiangwu H.C. Starck Tungsten Products Co., Ltd.	China	Y
Tungsten		Jiangxi Dayu Longxintai Tungsten Co., Ltd.	China	
Tungsten		Jiangxi Gan Bei Tungsten Co., Ltd.	China	Y
Tungsten		Jiangxi Minmetals Gao'an Non-ferrous Metals Co., Ltd.	China	
Tungsten		Jiangxi Tonggu Non-ferrous Metallurgical & Chemical Co., Ltd.	China	Y
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		Kennametal Fallon	United States of America	Y
Tungsten		Kennametal Huntsville	United States of America	Y
Tungsten		Malipo Haiyu Tungsten Co., Ltd.	China	Y
Tungsten		Masan Tungsten Chemical LLC (MTC)	Viet Nam	Y
Tungsten		Metallo-Chimique N.V.	Belgium	
Tungsten		Minsur	Peru	
Tungsten		Moliren Ltd.	Russian Federation	Y
Tungsten		Niagara Refining LLC	United States of America	Y
Tungsten		North American Tungsten	Canada	
Tungsten		Philippine Chuangxin Industrial Co., Inc.	Philippines	Y
Tungsten		Plansee Group	Austria	
Tungsten		Pobedit, JSC	Russian Federation	
Tungsten		Sandvik Material Technology	Sweden	
Tungsten		Sanher Tungsten Vietnam Co., Ltd.	Viet Nam	
Tungsten		South-East Nonferrous Metal Company Limited of Hengyang City	China	Y
Tungsten		Tejing (Vietnam) Tungsten Co., Ltd.	Viet Nam	Y
Tungsten		Unecha Refractory metals plant	Russian Federation	Y

Metal	Metal Total	Smelter Name	Smelter Country	Validated CFS?
Tungsten		Vietnam Youngsun Tungsten Industry Co., Ltd.	Viet Nam	
Tungsten		WOLFRAM Company CJSC	Russian Federation	
Tungsten		White Solder Metalurgia e Mineracao Ltda.	Brazil	
Tungsten		Wolfram Bergbau und Hutten AG	Austria	Y
Tungsten		Wolfram Company CJSC	Russian Federation	
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	77	E-M Solutions and Anaren Tungsten Source Smelters		
	543	Total E-M Solutions and Anaren Source Smelters		