

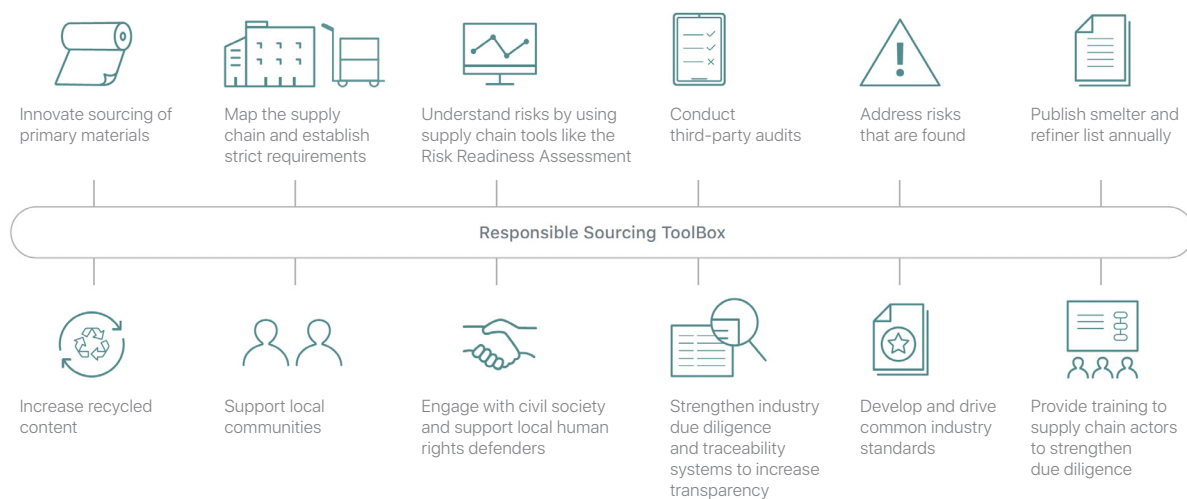


Smelter and Refiner List

This list includes Tin, Tantalum, Tungsten, Gold, and Cobalt smelters and refiners identified in Apple's supply chain as of December 31, 2019.

Apple is committed to setting the highest standards for responsible sourcing of the materials used in our products. We work to protect the planet and safeguard the human rights of people throughout our supply chain. Our Responsible Materials Sourcing program establishes supplier standards for the sourcing of the many materials in Apple products, from advanced bio-materials to minerals sourced from the earth and recycled content.

Our goal is to one day end our reliance on mining, using only recycled and renewable materials in our products and packaging. While we work toward this goal, we continue to responsibly source minerals by conducting due diligence in our supply chain; considering the human rights impact on surrounding communities; and fostering the same opportunities as we do in other parts of Apple’s supply chain. In pursuit of these goals, we utilize a comprehensive set of tools to drive progress throughout Apple’s supply chain.



More information on our Responsible Minerals Sourcing program is available in the annual Apple Supplier Responsibility Progress Report and Conflict Minerals Report, both of which are available at apple.com/supplier-responsibility.

This smelter and refiner list includes Tin, Tantalum, Tungsten, Gold, and Cobalt smelters and refiners identified in Apple's supply chain as of December 31, 2019.

100% of 3TG and Cobalt smelters and refiners have completed a third-party audit.

For more details and the most current status of each smelter or refiner, visit the Responsible Minerals Assurance Process (RMAP) website at <http://www.responsiblemineralsinitiative.org> and LBMA's Good Delivery List at www.lbma.org.uk/the-good-delivery-list, or company websites.

Additional details can be found on:

[Apple Supplier Responsibility Progress Report](#)

[Apple Conflict Minerals Report](#)

Metal	Smelter or Refiner Name	Country
Cobalt	Freeport Cobalt Oy (Kokkola)	Finland
Cobalt	Ganzhou Highpower Technology Co., Ltd.	China
Cobalt	Ganzhou Tengyuan Cobalt New Material Co., Ltd.	China
Cobalt	GEM (JIANGSU) Cobalt Industry Co.,Ltd.	China
Cobalt	Guangdong Jiana Energy Technology Co.,Ltd	China
Cobalt	Gangzhou Yi Hao Umicore Industry Co. (Umicore)	China
Cobalt	Hunan Brunp Recycling Technology Co., Ltd.	China
Cobalt	Hunan Shiji Yintian New Material Co., Ltd	China
Cobalt	Hunan Yacheng New Materials Co.,Ltd.	China
Cobalt	Hunan Zoomwe New Energy Science & Technology Co., Ltd.	China
Cobalt	Hunan Jinxin New Material Holding Co., Ltd.	China
Cobalt	Jiangsu Xiongfeng Science & Technology Co., LTD	China
Cobalt	Jiangxi Jiangwu Cobalt Industry Co., Ltd.	China
Cobalt	Jingmen GEM Co.,Ltd.	China
Cobalt	Lanzhou Jinchuan Advanced Materials Technology Co., Ltd.	China
Cobalt	Nantong Xinwei Nickel & Cobalt Hightech Development Co.,Ltd	China
Cobalt	Ningbo Hubang New Material Co., Ltd.	China
Cobalt	Ningbo Yanmen Chemical Co., Ltd	China
Cobalt	New Era Group Zhenjiang Zhongneng Cycle Technology Co., Ltd	China
Cobalt	Quzhou Huayou Cobalt New Material Co., Ltd	China
Cobalt	Tianjin Maolian Science & Technology Co., Ltd	China
Cobalt	Umicore Olen (Umicore)	Belgium
Cobalt	XTC New Energy Materials (Xiamen) Ltd.	China
Cobalt	Zhejiang Huayou Cobalt Co., Ltd.	China
Tin	Alpha	United States of America
Tin	Chenzhou Yunxiang Mining and Metallurgy Co., Ltd.	China
Tin	Chifeng Dajingzi Tin Industry Co., Ltd.	China
Tin	China Tin Group Co., Ltd.	China
Tin	CV Ayi Jaya	Indonesia
Tin	CV Dua Sekawan	Indonesia
Tin	CV Gita Pesona	Indonesia
Tin	CV United Smelting	Indonesia

Metal	Smelter or Refiner Name	Country
Tin	CV Venus Inti Perkasa	Indonesia
Tin	Dowa	Japan
Tin	EM Vinto***	Bolivia
Tin	Fenix Metals*	Poland
Tin	Gejiu Fengming Metallurgy Chemical Plant	China
Tin	Gejiu Kai Meng Industry and Trade, LLC	China
Tin	Gejiu Non-Ferrous Metal Processing Co., Ltd.	China
Tin	Gejiu Yunxin Nonferrous Electrolysis Co., Ltd.	China
Tin	Gejiu Zili Mining and Metallurgy Co., Ltd.	China
Tin	Guangdong Hanhe Non-Ferrous Metal Co., Ltd.*	China
Tin	Guanyang Guida Nonferrous Metal Smelting Plant	China
Tin	HuiChang Hill Tin Industry Co., Ltd.	China
Tin	Huichang Jinshunda Tin Co., Ltd.	China
Tin	Jiangxi New Nanshan Technology Ltd.	China
Tin	Ma'anshan Weitai Tin Co., Ltd.	China
Tin	Magnu's Minerai's Metais e Ligas Ltda.	Brazil
Tin	Malaysia Smelting Corp. (MSC)	Malaysia
Tin	Melt Metais e Ligas S.A.	Brazil
Tin	Metallic Resources, Inc.*	United States of America
Tin	Metallo Belgium N.V.	Belgium
Tin	Metallo Spain S.L.U.	Spain
Tin	Mineração Taboca S.A.	Brazil
Tin	Minsur	Peru
Tin	Mitsubishi Materials Corp.*	Japan
Tin	O.M. Manufacturing (Thailand) Co., Ltd.	Thailand
Tin	O.M. Manufacturing Philippines, Inc.*	Philippines
Tin	Operaciones Metalurgicas S.A.	Bolivia
Tin	PT Aries Kencana Sejahtera	Indonesia
Tin	PT Artha Cipta Langgeng	Indonesia
Tin	PT ATD Makmur Mandiri Jaya	Indonesia
Tin	PT Babel Inti Perkasa	Indonesia
Tin	PT Babel Surya Alam Lestari	Indonesia
Tin	PT Bangka Prima Tin	Indonesia
Tin	PT Bangka Serumpun	Indonesia
Tin	PT Bangka Tin Industry	Indonesia
Tin	PT Belitung Industri Sejahtera	Indonesia
Tin	PT Bukit Timah	Indonesia
Tin	PT DS Jaya Abadi	Indonesia
Tin	PT Inti Stania Prima	Indonesia
Tin	PT Karimun Mining	Indonesia
Tin	PT Kijang Jaya Mandiri	Indonesia
Tin	PT Lautan Harmonis Sejahtera	Indonesia
Tin	PT Menara Cipta Mulia	Indonesia
Tin	PT Mitra Stania Prima	Indonesia
Tin	PT Panca Mega Persada	Indonesia
Tin	PT Premium Tin Indonesia	Indonesia

Metal	Smelter or Refiner Name	Country
Tin	PT Prima Timah Utama	Indonesia
Tin	PT Rajawali Rimba Perkasa	Indonesia
Tin	PT Rajehan Ariq	Indonesia
Tin	PT Refined Bangka Tin	Indonesia
Tin	PT Sariwiguna Binasentosa	Indonesia
Tin	PT Stanindo Inti Perkasa	Indonesia
Tin	PT Sukses Inti Makmur	Indonesia
Tin	PT Sumber Jaya Indah	Indonesia
Tin	PT Timah Tbk Kundur	Indonesia
Tin	PT Timah Tbk Mentok	Indonesia
Tin	PT Tinindo Inter Nusa	Indonesia
Tin	PT Tirus Putra Mandiri	Indonesia
Tin	PT Tommy Utama	Indonesia
Tin	Resind Indústria e Comércio Ltda.	Brazil
Tin	Rui Da Hung	Taiwan
Tin	Soft Metais Ltda.	Brazil
Tin	Thai Nguyen Mining and Metallurgy Co., Ltd.	Vietnam
Tin	Thaisarco	Thailand
Tin	Tin Technology & Refining*	United States of America
Tin	White Solder Metalurgia e Mineração Ltda.	Brazil
Tin	Yunnan Chengfeng Non-ferrous Metals Co., Ltd.	China
Tin	Yunnan Tin Co., Ltd.	China
Tin	Yunnan Yunfan Non-ferrous Metals Co., Ltd.	China
Tantalum	Asaka Riken Co., Ltd.	Japan
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 Hermsdorf GmbH	Germany
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 Janny New Material Co., Ltd.**	China
Tantalum	Jiujiang JinXin Nonferrous Metals Co., Ltd.	China
Tantalum	Jiujiang Tanbre Co., Ltd.	China
Tantalum	Jiujiang Zhongao Tantalum & Niobium Co., Ltd.	China

Metal	Smelter or Refiner Name	Country
Tantalum	Kemet Blue Metals	Mexico
Tantalum	Kemet Blue Powder	United States of America
Tantalum	LSM Brasil S.A.	Brazil
Tantalum	Metallurgical Products India Pvt., Ltd.	India
Tantalum	Mineração Taboca S.A.	Brazil
Tantalum	Mitsui Mining and Smelting Co., Ltd.	Japan
Tantalum	Ningxia Orient Tantalum Industry Co., Ltd.	China
Tantalum	PRG Doel	Macedonia
Tantalum	QuantumClean*	United States of America
Tantalum	Resind Indústria e Comércio Ltda.	Brazil
Tantalum	Solikamsk Magnesium Works OAO	Russia
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
Tungsten	A.L.M.T. Corp.*	Japan
Tungsten	ACL Metais Eireli	Brazil
Tungsten	Asia Tungsten Products Vietnam Ltd.	Vietnam
Tungsten	Chenzhou Diamond Tungsten Products Co., Ltd.	China
Tungsten	Chongyi Zhangyuan Tungsten Co., Ltd.	China
Tungsten	FuJian JinXin Tungsten Co., Ltd.	China
Tungsten	Ganzhou Haichuang Tungsten Co., Ltd.	China
Tungsten	Ganzhou Huaxing Tungsten Products Co., Ltd.	China
Tungsten	Ganzhou Jiangwu Ferrotungsten Co., Ltd.	China
Tungsten	Ganzhou Seadragon W & Mo Co., Ltd.	China
Tungsten	Global Tungsten & Powders Corp.	United States of America
Tungsten	Guangdong Xianglu Tungsten Co., Ltd.	China
Tungsten	H.C. Starck Smelting GmbH & Co. KG	Germany
Tungsten	H.C. Starck Tungsten GmbH	Germany
Tungsten	Hunan Chenzhou Mining Co., Ltd.	China
Tungsten	Hunan Chuangda Vanadium Tungsten Co., Ltd. Wuji	China
Tungsten	Hunan Chunchang Nonferrous Metals Co., Ltd.	China
Tungsten	Hunan Litian Tungsten Industry Co., Ltd.*	China
Tungsten	Hydrometallurg, JSC	Russia
Tungsten	Japan New Metals Co., Ltd.	Japan
Tungsten	Jiangwu H.C. Starck Tungsten Products Co., Ltd.	China
Tungsten	Jiangxi Gan Bei Tungsten Co., Ltd.	China
Tungsten	Jiangxi Tonggu Non-ferrous Metallurgical & Chemical Co., Ltd.	China
Tungsten	Jiangxi Xinsheng Tungsten Industry Co., Ltd.	China
Tungsten	Jiangxi Yaosheng Tungsten Co., Ltd.	China
Tungsten	Kennametal Fallon	United States of America
Tungsten	Kennametal Huntsville	United States of America
Tungsten	KGETS Co., Ltd.	Republic of Korea
Tungsten	Lianyou Metals Co., Ltd.*	Taiwan
Tungsten	Malipo Haiyu Tungsten Co., Ltd.	China

Metal	Smelter or Refiner Name	Country
Tungsten	Masan Tungsten Chemical, LLC (MTC)	Vietnam
Tungsten	Moliren Ltd.	Russia
Tungsten	Niagara Refining, LLC	United States of America
Tungsten	Philippine Chuangxin Industrial Co., Inc.*	Philippines
Tungsten	Tejing (Vietnam) Tungsten Co., Ltd.	Vietnam
Tungsten	Unecha Refractory Metals Plant	Russia
Tungsten	Wolfram Bergbau und Hütten AG	Austria
Tungsten	Woltech Korea Co., Ltd.	Republic of Korea
Tungsten	Xiamen Tungsten (H.C.) Co., Ltd.	China
Tungsten	Xiamen Tungsten Co., Ltd.	China
Tungsten	Xinfeng Huarui Tungsten & Molybdenum New Material Co., Ltd.	China
Tungsten	Xinhai Rendan Shaoguan Tungsten Co., Ltd.	China
Gold	8853 S.p.A.*.***	Italy
Gold	Advanced Chemical Co.*	United States of America
Gold	Aida Chemical Industries Co., Ltd.*	Japan
Gold	Allgemeine Gold-und Silberscheideanstalt A.G.*	Germany
Gold	Almalyk Mining and Metallurgical Complex (AMMC)	Uzbekistan
Gold	AngloGold Ashanti Córrego do Sítio Mineração	Brazil
Gold	Argor-Heraeus S.A.	Switzerland
Gold	Asahi Pretec Corp.*	Japan
Gold	Asahi Refining Canada Ltd.	Canada
Gold	Asahi Refining USA Inc.	United States of America
Gold	Asaka Riken Co., Ltd.*	Japan
Gold	AU Traders and Refiners***	South Africa
Gold	Aurubis AG	Germany
Gold	Bangalore Refinery	India
Gold	Bangko Sentral ng Pilipinas (Central Bank of the Philippines)***	Philippines
Gold	Boliden AB	Sweden
Gold	C. Hafner GmbH + Co. KG*	Germany
Gold	CCR Refinery - Glencore Canada Corp.	Canada
Gold	Cendres + Métaux S.A.*.***	Switzerland
Gold	Chimet S.p.A.*	Italy
Gold	Chugai Mining*	Japan
Gold	Daejin Indus Co., Ltd.*. **	Republic of Korea
Gold	Daye Non-Ferrous Metals Mining Ltd.	China
Gold	DODUCO Contacts and Refining GmbH*	Germany
Gold	Dowa	Japan
Gold	DS PRETECH Co., Ltd.*	Republic of Korea
Gold	DSC (Do Sung Corp.)*	Republic of Korea
Gold	Eco-System Recycling Co., Ltd. East Plant*	Japan
Gold	Eco-System Recycling Co., Ltd. North Plant*	Japan
Gold	Eco-System Recycling Co., Ltd. West Plant*	Japan
Gold	Emirates Gold DMCC	United Arab Emirates
Gold	Geib Refining Corp.*	United States of America
Gold	Gold Refinery of Zijin Mining Group Co., Ltd.	China
Gold	Great Wall Precious Metals Co., Ltd. of CBPM	China

Metal	Smelter or Refiner Name	Country
Gold	Heimerle + Meule GmbH	Germany
Gold	Heraeus Metals Hong Kong Ltd.	Hong Kong
Gold	Heraeus Precious Metals GmbH & Co. KG	Germany
Gold	Inner Mongolia Qiankun Gold and Silver Refinery Share Co., Ltd.	China
Gold	Ishifuku Metal Industry Co., Ltd.*	Japan
Gold	Istanbul Gold Refinery	Turkey
Gold	Italpreziosi	Italy
Gold	Japan Mint*	Japan
Gold	Jiangxi Copper Co., Ltd.	China
Gold	JSC UralElectromed	Russia
Gold	JX Nippon Mining & Metals Co., Ltd.	Japan
Gold	Kazzinc	Kazakhstan
Gold	Kennecott Utah Copper, LLC	United States of America
Gold	KGHM Polska Miedź Spółka Akcyjna	Poland
Gold	Kojima Chemicals Co., Ltd.*	Japan
Gold	Korea Zinc Co., Ltd.	Republic of Korea
Gold	Kyrgyzaltyn JSC	Kyrgyzstan
Gold	L'Orfebre S.A.	Andorra
Gold	LS-NIKKO Copper Inc.	Republic of Korea
Gold	LT Metal Ltd.*	Republic of Korea
Gold	Marsam Metals	Brazil
Gold	Materion	United States of America
Gold	Matsuda Sangyo Co., Ltd.*	Japan
Gold	Metalor Technologies (Hong Kong) Ltd.	Hong Kong
Gold	Metalor Technologies (Singapore) Pte., Ltd.	Singapore
Gold	Metalor Technologies (Suzhou) Ltd.	China
Gold	Metalor Technologies S.A.	Switzerland
Gold	Metalor USA Refining Corp.	United States of America
Gold	Metalúrgica Met-Mex Peñoles S.A. de C.V.	Mexico
Gold	Mitsubishi Materials Corp.	Japan
Gold	Mitsui Mining and Smelting Co., Ltd.	Japan
Gold	MMTC-PAMP India Pvt., Ltd.	India
Gold	Moscow Special Alloys Processing Plant	Russia
Gold	Nadir Metal Rafineri San. Ve Tic. A.Ş.	Turkey
Gold	Navoi Mining and Metallurgical Combinat***	Uzbekistan
Gold	Nihon Material Co., Ltd.*	Japan
Gold	Ögussa Österreichische Gold- und Silber-Scheideanstalt GmbH* ***	Austria
Gold	Ohura Precious Metal Industry Co., Ltd.	Japan
Gold	OJSC "The Gulidov Krasnoyarsk Non-Ferrous Metals Plant" (OJSC Krastsvetmet)	Russia
Gold	OJSC Novosibirsk Refinery	Russia
Gold	PAMP S.A.	Switzerland
Gold	Planta Recuperadora de Metales SpA	Chile
Gold	Prioksky Plant of Non-Ferrous Metals	Russia
Gold	PT Aneka Tambang (Persero) Tbk	Indonesia
Gold	PX Précinox S.A.	Switzerland
Gold	Rand Refinery (Pty) Ltd.	South Africa

Metal	Smelter or Refiner Name	Country
Gold	Remondis PMR B.V.*	Netherlands
Gold	Royal Canadian Mint	Canada
Gold	SAAMP***	France
Gold	Safimet S.p.A* ***	Italy
Gold	Samduck Precious Metals*	Republic of Korea
Gold	SAXONIA Edelmetalle GmbH*	Germany
Gold	SEMPSA Joyería Platería S.A.*	Spain
Gold	Shandong Zhaojin Gold & Silver Refinery Co., Ltd.	China
Gold	Sichuan Tianze Precious Metals Co., Ltd.	China
Gold	Singway Technology Co., Ltd.*	Taiwan
Gold	SOE Shyolkovsky Factory of Secondary Precious Metals	Russia
Gold	Solar Applied Materials Technology Corp.*	Taiwan
Gold	Sumitomo Metal Mining Co., Ltd.	Japan
Gold	SungEel HiMetal Co., Ltd.*	Republic of Korea
Gold	T.C.A. S.p.A.*	Italy
Gold	Tanaka Kikinzoku Kogyo K.K.*	Japan
Gold	The Refinery of Shandong Gold Mining Co., Ltd.	China
Gold	Tokuriki Honten Co., Ltd.	Japan
Gold	Torecom*	Republic of Korea
Gold	Umicore Brasil Ltda.	Brazil
Gold	Umicore Precious Metals Thailand* ***	Thailand
Gold	Umicore S.A. Business Unit Precious Metals Refining	Belgium
Gold	United Precious Metal Refining, Inc.*	United States of America
Gold	Valcambi S.A.	Switzerland
Gold	Western Australian Mint trading as The Perth Mint	Australia
Gold	Wieland Edelmetalle GmbH*	Germany
Gold	Yamakin Co., Ltd.*	Japan
Gold	Yokohama Metal Co., Ltd.*	Japan
Gold	Zhongyuan Gold Smelter of Zhongjin Gold Corp.	China

*The smelter/refiner is believed to process at least some 3TG from recycled or scrap sources.

**The smelter/refiner has changed its compliance or operational status since December 31, 2019.

***The smelter/refiner continued to be in the process of removal and/or is no longer approved to be in Apple's supply chain as of the filing of Apple's Conflict Minerals Report for the reporting period January 1, 2019 to December 31, 2019.

For more information

For more information about Apple's Supplier Responsibility program, visit <http://www.apple.com/supplier-responsibility>.

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