ITA CODE OF CONDUCT
Company Types

This document provides descriptions of the main company types or actors involved in the tin supply chain. These descriptions are used to guide understanding of which Principles or Standards of Practice of International Tin Association (ITA) Code may be relevant to which type of operation. In some cases a company may undertake more than one of these activities described.

E&D
Explorers and developers

Mineral explorers work to find commercially viable quantities of minerals that can ultimately be developed as profitable operating mines. Explorers use a range of remote, airborne and ground based methods to initially identify potential mineral deposits and then acquire increasingly detailed information. A project developer works to complete a detailed technical, economic, environmental and social evaluation of the deposit to determine whether it can be mined economically. A developer may raise capital in order to develop the project itself or attempt to sell the project to a larger company.

LSM
Large scale miners

Large-scale miners undertake formal, industrialised mining, working larger tin deposits with proven reserves using a highly mechanised approach. Such miners may operate a single mine site or multiple sites in parallel and may undertake ongoing exploration as described above. Large scale miners are characterized by substantial investment and capital, heavy equipment, infrastructure development, and the use of more advanced technology.

SSM
Small scale miners

Small scale miners typically work small deposits that cannot be economically exploited by large scale miners, or where there has been limited or no exploration, limiting investment potential. While the emphasis is on predominantly manual and labour intensive methods, there is mechanisation of some tasks such as ground clearance and ore extraction and crushing. Capital for investment in the operation is quite limited.

AM
Artisanal miners

Artisanal miners may work as individuals or cooperatives, using predominantly manual and labour intensive methods of extraction with minimal machinery or technology, in informal circumstances. Like small scale miners, artisanal miners may work small deposits that cannot be economically extracted by large scale miners and have no proven reserves. Artisanal miners may operate seasonally or in response to changes in metal price. Capital for investment in the operation is extremely limited.

MCP
Mineral concentrate processors

Mineral concentrate processors treat tin containing ores using beneficiation techniques to upgrade the tin content of the mineral concentrate in preparation for further trading, treatment or smelting. The specific beneficiation methods used may differ depending on whether the mineral originates from alluvial or hard rock deposits; however in both cases a combination of washing, crushing/grinding, gravity concentration and flotation may be employed to produce a tin concentrate that meets the desired grade. This can be highly mechanised, or not, depending on the local situation. The processing entity may then sell this material through other processors or tin concentrate traders before the material reaches the smelter. Processors can also be integrated in mining companies for LSM and SSM.

S&R
Primary and secondary smelters and refiners

Primary smelters treat tin containing ore concentrates from mine production, and secondary smelters treat tin-bearing materials from manufacturing processes or from end-of-life products in order to produce crude tin. Refiners treat crude tin or suitable secondary materials to produce fully refined tin by one of two methods. Pyro-refining is most commonly used and produces tin suitable for general commercial use (typically 99.85%). Electrolytic refining is used on the products of complex ores and to produce a very high grade of tin (up to 99.999%). A smelter and refiner may sometimes be vertically integrated with a large scale mining operation, forming a single production chain from mine to pure tin metal. Conversely, a custom smelter and refiner will purchase minerals from other mining operators to produce refined tin.

C&MT
Concentrate and metal traders

Tin concentrate traders operate in the upstream supply chain, between producers and exporters and the smelter and will typically purchase container loads of concentrate which are then sold on to other intermediaries or primary smelters. In some cases, traders will also purchase crude tin products which are then refined into pure tin metal by the smelter and refinery. Refined metal traders will purchase the final product from the smelter and refinery which is then sold on to end users. Certain metal traders may also be involved in the purchase and sale of tin containing materials from other sources which may then be sold on to secondary tin producers. Traders commonly do not take physical delivery of the materials which they are dealing.

UT
Users of tin

Tin users exist at many levels, and in multiple sectors of the downstream supply chain. For example in the key electronics sector, first tier companies manufacture solder or chemical plating solutions which are then used in further tiers of the supply chain to manufacture components or assemblies, ultimately becoming part of an end use product. In other instances, such as the pewter or wine capsule sector, the supply chain is shorter and less complex, and in some cases, for example for float glass production, companies simply utilise tin in their manufacturing process. Tin users are found in a range of downstream industries which include consumer electronics, transport, packaging, construction, industrial equipment and other smaller tin use markets. Companies will use primary, secondary re-refined, and secondary unrefined materials from post manufacture or post-consumer sources, and may range from very small operations to the largest multinational brands.