
GLOSSARY OF TECHNICAL TERMS

This glossary of technical terms contains terms used in this Listing Document as they relate to the Group's business. Some of these definitions may not correspond to standard industry definitions.

“adit”	a horizontal or nearly horizontal entrance/access to an underground mine from the surface, which often starts from the side of a hill
“anode”	the electrode by which current enters the cell. For copper refining, impure copper is used as an anode. For zinc refining, lead anodes are used
“C1 cost” or “C1 cash cost”	a direct cash cost measure, expressed in U.S. cents per pound of paid metal produced, including mine-site mining, processing and general administration costs, plus concentrate freight costs, smelting and refining charges and marketing costs where applicable
“cathode”	the cathode is the conductor through which electricity leaves the cell. For copper refining, the cathode is where the refined copper is deposited
“caving”	a low-cost bulk method of mining where the ore body is either undercut to encourage it to collapse naturally (block caving), or loosened by blasting (sub-level caving), and then loaded from drawpoints on a safe level
“concentrate”	material which has been processed to increase the percentage of the valuable mineral to facilitate transportation and downstream processing
“copper concentrate”	product of the flotation process with a copper metal content typically ranging between 20 per cent. and 40 per cent.
“copper in concentrate”	copper concentrate measured by the copper metal content within copper concentrate
“copper semi”	copper-based alloy semi-product, including wires, sheets, strips and bars
“dilution”	waste or sub-economic mineralised material that is mined with the ore as an undesired consequence of mining
“drawpoint”	a connection to a mining stope from which broken ore is loaded by a front-end loader

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“electrowinning” or “EW”	recovery of metal from solution by electrolysis
“gross cash cost”	cash cost before by-product credits
“GWh”	gigawatt hours
“high grade”	a zinc grade where zinc content is greater than 99.95 per cent. Used in a range of applications including corrosion protection, batteries and in making brass
“inferred resources”	mineral resource inferred from geoscientific evidence, drill holes, underground openings or other sampling procedures where the lack of data is such that continuity cannot be predicted with confidence and where geoscientific data may not be known with a reasonable level of reliability
“km”	kilometres
“kt”	kilotonnes
“life of mine”	the remaining life of the mine in years calculated by deducting the scheduled production rate (i.e. the rate at which material will be removed from the mine to the current defined reserves)
“m”	metres
“M”	million
“mineable reserve”	the portion of the reserve that can be economically (or technically) mined from the total reserve
“mineral”	a natural, inorganic, homogeneous material that can be expressed by a chemical formula
“mineral resource”	a tonnage or volume of rock or mineralisation of intrinsic economic interest
“mineralisation”	the process by which minerals are introduced into a rock. More generally, a term applied to accumulations of potentially economic or related minerals in quantities ranging from anomalous to economically recoverable
“mm”	millimetre
“Moz”	million ounces

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“Mt”	million tonnes
“MVA”	megavolt ampere
“MW”	megawatt
“nameplate capacity”	the maximum rated output of electric power production equipment under specified conditions designated by the manufacturer
“open pit”	surface mining in which the ore is extracted from a pit or quarry
“ore”	a mineral or mineral aggregate containing precious or useful minerals in such quantities, grade and chemical combination as to make extraction economic
“ounce” or “oz”	a troy ounce
“plant”	fixed or moveable equipment required in the process of winning or processing the ore
“probable reserves”	those measured and/or indicated mineral resources which are not yet “proved”, but of which detailed technical and economic studies have demonstrated that extraction can be justified at the time of the determination and under specified economic conditions
“proved reserves”	measured mineral resources of which detailed technical and economic studies have demonstrated that extraction can be justified at the time of determination and under specific economic conditions
“refining”	the final process of upgrading the metal quality
“reserves”	those parts of mineral resources for which sufficient information is available to enable detailed or conceptual mine planning and for which such planning has been undertaken. Reserves are classified as either proved or probable
“resources”	all of the potential minerals in a defined area based on points of observation and extrapolations from those points. Potential minerals are defined as minerals which have been or could be improved to give a quality acceptable for commercial usage in the foreseeable future
“room and pillar mining”	a common mining method in which mined material is extracted along a horizontal plane leaving open areas

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	called “rooms” with pillars of untouched material to support the roof
“secondary pillar extraction”	mining process in which ore-bearing pillars supporting the roof of a stope from which all the ore has been extracted are themselves partially or fully extracted
“shrinkage stoping”	a labour-intensive mining method for narrow, steeply dipping ore bodies in which mining proceeds upwards from the bottom of an ore body and the broken ore is gradually removed from drawpoints at the bottom of the ore body
“slag”	solid waste matter left when metal has been separated from ore by smelting
“smelting”	thermal process whereby molten metal is liberated from a concentrate, with impurities separating into a lighter slag
“solvent extraction” or “SX”	the hydrometallurgical process in which ore purified and concentrated by leaching using a solvent, yielding a leach solution which is then input to the electrowinning process
“SX-EW”	the combined solvent extraction/electrowinning process
“stope”	a three-dimensional area of ore defined for mining
“sustaining capital expenditure”	capital expenditure on maintenance and repair of existing capital assets
“t” or “tonne”	metric tonne, equivalent to 2,204.62 pounds
“tailings”	the waste material produced from ore after economically recoverable metals or minerals have been extracted. Changes in metal prices and improvements in technology can sometimes make the tailings economic to process at a later date
“tankhouse”	a building in which an electrolytic refinery is housed; the refinery consists of tanks in which electrolytic refining takes place
“tolling”	the process by which a customer supplies concentrate to a smelter and the smelter invoices the customer for the smelting charge, and possibly a refining charge, and then returns the metal to the customer

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“zinc concentrate” product of the flotation process with a zinc metal content typically ranging between 45 per cent. and 50 per cent.

“zinc in concentrate” zinc concentrate measured by the zinc metal content within zinc concentrate