

Country and Company Producers

Table B-1--Major Copper Producing Companies by Country

Country	Companies (m=mine, s=smelter, r=refinery)
Australia	MIM (msr), Renison Goldfields (m), ER&S (sr), Olympic Dam JV (msr)
Belgium	MHO (sr)
Brazil	Carai ba Metais (sr), CVRD (m) pending
Canada	Inco (msr), Fal conbridge (msr), Noranda (msr), Highland Valley (m), BHP-Utah (m), Afton JV (m), Hudson Bay (s)
Chile	Codelco (msr), ENAMI (sr), Escondida (m) pending, Di sputada (ins), Mantos Blancos (msr), Ojos del Salado (m)
Finland	Outokumpu (msr)
Germany, FR	Norddeutsche Affinerie (sr)
Indonesia	Freeport Indonesia (m)
Japan	Nippon Mining (sr), Onahama (sr), Sumitomo (sr), Mitsubishi (sr), Hibi Kyoda (sr), Dowa (msr), Mitsui (r)
Korea, Rep	Korea Mining & Smelting (sr)
Mexico	Mexicana de Cobre (ins), Cananea (ins), Medimsa (ins), Frisco (m), Cobre de Mexico (r)
Peru	SPCC (ins), Cuajone JV (m), Centromin (msr), Mi nero Peru (mr), Nor Peru (m)
Philippines	Atlas (m), Maricalum (m), Marcopper (m), North Davao (m), Benguet (m), Lepanto (m), PASAR (sr)
PNG	Bougainvillea (m), Ok Tedi (m)
Portugal	Sominco (m)
South Africa	Palabora (msr), O'okiep (ins)
Spain	Rio Tinto Minera (sr)
Sweden	Boliden (msr)
UK	IMI Refiners (r), BICC (m)
USA	Phelps Dodge (msr), Chino JV (msr), Morenci JV (m), Cyprus (msr), Kennecott (msr), Magma (msr), Asarco (msr), Butte JV (m), Copper Range (msr), Doe Run (m), Southwire (r), Cox Creek (r), Anaconda E-R (r), Texas City (s) pending
Yugoslavia	RTB Bor (msr)
Zaire	Gecamines (msr)
Zambia	ZCCM (msr)

SOURCE: Office of Technology Assessment, 1990

Table B-2--Major Aluminum Producing Companies by Country

Country	Companies (m=mine, r=refinery, s=smelter)
Argentina	Aluminos Argentines (s)
Australia	Alcoa of Australia (mrs), Comalco (ins), Queensland Alumina (r), Boyne (s), Gove Project (mr), Tomago (s), Worsley (mr), Alcan Australia (s), Portland Smelter JV (s)
Austria	Austria Metall (s), Salzburger (s)
Bahrain	Alba (s)
Brazil	MRN (m), Alcoa Aluminio (mrs), Alcan Aluminio (mrs), CBA (mrs), Alumar (rs), Albras (s), Valesul (s), Alunorte (r) pending
Canada	Alcan (rs), Reynolds (s), Becancour (s), Alouette (s) pending
Egypt	Egyptal (s)
France	Pechiney (mrs)
Germany, FR	VAW (rs), Aluminum Oxide Stade (r), Alusuisse (rs), Hamburg Aluminum (s), Hoogovens (s)
Ghana	Ghana Bauxite (m), Valco (s)
Greece	Parnasse [m], Elbaumin (m), Greek Helikon (m), Aluminum de Grece (mrs), Hellenic Alumina (r) pending
Guinea	CBG (m), OBK (m), Friguia (mr)
Guyana	Guymine (m)
India	Bharat (mrs), Nalco (mrs), Indalco (mrs), Hindalco (mrs), Malco (rs)
Indonesia	Aneka Tambang (m), Inalum (s)
Ireland	Aughinish (r)
Italy	Alumina SpA (s)
Jamaica	Kaiser Jamaica (m), Jamaican (mr), Alpart (mr), Clarendon Alumina JV (mr)
Japan	Nippon Light Metal (rs), Sumitomo Aluminum (r), Showa Aluminum (r)
Malaysia	Johore Mining (m)
Mexico	Alumsa (s)
Netherlands	Pechiney (s), Hoogovens (s)
New Zealand	New Zealand Al Smelters (s)
Norway	Hydro Aluminum (s), Mosal (s), Soral (s)
Sierra Leone	SIEROMCO (m)
South Africa	Alusaf (s)

Spain	Aluminio Espanol (rs), Endasa (s)
Suriname	Suralco (ins), Suralco-Billiion JV (mr)
Sweden	Granges Aluminum (s)
Switzerland	Alusuisse (s)
Turkey	Eti bank (s)
UAE	Dubai Aluminum (s)
UK	British Alcan (rs), Anglesey Aluminium (s)
USA	Alcoa (rs), Reynolds (rs), Kaiser (rs), Ormet (rs), Clarendon (r), Alumax-[Eastalco, Intalco, Mt. Holly JV] (s), Alcan (s), Noranda (s), Columbia Falls (s), Columbia Aluminum (s), Southwire (s), Valalco (s), Ravenswood (s), Northwest Aluminum/Martin Marietta (s)
Venezuela	Bauxi ven (m), Inter alumi na (r), Venal um (s), Al casa (s), [A]amsa (s), Al uyana (s), Alisa (s), Alusur (s), Aluguay (s), Vexxal (s), Angostura (s)] pending
Yugoslavi a	Energoi nvest (mrs)

SOURCE: Office of Technology Assessment, 1990

Table B-3--Major Lead Producing Companies by Country

Country	Companies (m=mine, s=smelter, r=refinery)
Australia	Pasminco (msr), MIM (ins), Aberfoyle (m) Cadjebut JV (m), Lady Loretta (m), Woodcutters JV (m)
Belgium	MHO (sr)
Canada	Cominco (msr), Faro Mine JV (m), Brunswick (m), Westmin (m), Nansivik (m), Polaris JV (m), Noranda (sr)
Finland	Outokumpu (m)
France	Metal europ (msr)
Germany, FR	Berzelius (msr), Metal europ (sr), Norddeutsche Affinerie (sr)
Honduras	El Mochito (m)
Ireland	Tara Mines (m)
Italy	Nuova Samim (msr)
Japan	Dowa (msr), Nippon Mining (msr), Mitsubishi (msr), Mitsui (msr), Mitsubishi-Cominco (sr), Toho Zinc (sr), Hachinohe (sr), Sumitomo (sr)
Korea, Rep	Korea Mining & Smelting (sr), Young Poong (m)
Mexico	Medimsa (msr), Penoles (msr), Fresnillo (m), Frisco (m), Real des Angeles (m)
Morocco	Touissit (m), Djebel Aouam (m), Zelligja (sr)
Namibia	Tsumeb (msr)
Peru	Centromin (msr), Milpo (m), Atacocha (m), Raura (m), Buenaventura (m), Alianza (m), Mitsui (m), Santo Toribio (m), Nor Peru (m), Huaron (m), Volcan (m), Fundeconsa (s)
South Africa	Black Mountain (m), Billiton (m)
Spain	Metal europ (sr), Exminesa (m), Boliden (m), Asturiana de Zinc (m), Almagrera (m), Espanola del Zinc (sr)
Sweden	Boliden (msr), Vieille-Montagne (m)
UK	Pasminco (s), Britannia (r)
USA	Doe Run (msr), Asarco (msr), Leadville JV (m), Magmont JV (m), Bunker Hill Mining (m), Greens Creek JV (m), Hecla (m), Montana Tunnels (m), Sunnyside JV (m), New Butte Mining (m), Star-Phoenix Mining (m), Red Dog JV (m) pending
Yugoslavia	RMHK Trepca (msr)

SOURCE: Office of Technology Assessment, 1990

Table B-4--Major Zinc Producing Companies by Country

Country	Companies (m=mine, r=smelter/refinery)
Australia	Pasminco (mr), MIM (m), Aberfoyle (m), Cadjebut JV (m), Lady Loretta (m), Woodcutters JV (m)
Belgium	Vieille-Montagne (r), MHO (r)
Brazil	CMM (mr), Parai'buna (r)
Canada	Brunswick (m), Fal'conbridge (mr), Cominco (mr), Faro Mine JV (m), Noranda (mr), Hudson Bay (mr), Nani'sivik (m), Westmin (m), Daniel's Harbor JV (m), Polaris JV (m)
Denmark	Boliden (m)
Finland	Outokumpu (mr)
France	Metal'europ (mr), Vieille-Montagne (r)
Germany, FR	Metal'europ (r), Ruhr Zink (r), Berzelius (mr)
Honduras	El Mochito (m)
Ireland	Tara Mines (m)
Italy	Pertusola (r), Nuova Samim (mr)
Japan	Mitsui (mr), Dowa (m), Nippon Mining (mr), Mitsubishi (mr), Aki'ta Zinc (r), Toho Zinc (r), Hachinohe (r), Sumitomo (r)
Korea, Rep	Korea Zinc (r), Young Poong (mr)
Mexico	Medinsa (mr), Penoles (mr), Fresnillo (m), Frisco (m), Real des Angeles (m)
Namibia	Tsumeb (mr)
Netherlands	Budelco (r)
Norway	Foll'dal (m), Norzink (r)
Peru	Centromin (mr), San Ignacio Morococha (m), Milpo (m), Santander (m), Volcan (m), Raura (m), Mitsui (m), Atacocha (m), Santo Toribio (m), Buenaventura (m), Alianza (m), Mi'nero Peru (r), Nor Peru (m), Huaron (m)
South Africa	Black Mountain (m), Billiton (m), Zinc South Africa (r)
Spain	Exminesa (m), Asturiana de Zinc (mr), Boliden (m), Almagrera (m), Espanula del Zinc (r)
Sweden	Boliden (m), Vieille-Montagne (m)
Thailand	Padaeng (r)
UK	Pasminco (r)
USA	ZCA (mr), JerseyMiniere (mr), Asarco (m), Leadville JV (m), Doe Run (m), Magmont JV (m), Bunker Hill Mining (m), Greens Creek JV (m), Montana Tunnel's (m), Sunnyside JV (m), Big River (r), New Butte Mining (m), Alta Gold (m), Hecla (m), Union Zinc (m), Star-Phoenix Mining (m), Cyprus (m), Red Dog JV (m) pending
Yugoslavia	RHHK Trepca (mr)
Zaire	Gecamines (mr)

SOURCE: Office of Technology Assessment, 1990