# PORTUGAL

### By Harold R. Newman

The southern Iberian Peninsula, known as the Iberian Pyrite Belt (IPB), is one of the most mineralized areas of Western Europe and is geologically very complex. Massive sulfides linked to synorogenic volcanism in the southwestern part of the peninsula are well-known internationally. The metallogenic province stretches about 250 kilometers (km) from Seville, Spain, to the southwestern coast of Portugal.

The IPB's volcanogenic massive sulfide (VMS) deposits, which date to the Upper Devonian and the Lower Carboniferous ages, were deposited during submarine felsic volcanism. Clusters of deposits occur around individual volcanic centers, the ore lying in zones within volcanic and sedimentary host-rock sequences. Typically, these are overlain by a continental flysch group that can be up to 5 km thick. The largest individual deposit located to date was estimated to have held an original resource of about 500 million metric tons (Mt), which was a significant proportion of the 1,725 Mt total resource estimated for the IPB as a whole based on the 90 or so known sulfide deposits. Allowing for previous production, sulfide deposit resources in 1999 (the latest year for which data are available) were estimated to be about 1,100 Mt (Mining Journal, 1999).

In 2000, the mineral industry of Portugal was modest by world standards; its growth rate during the past few years, however, has made minerals one of the country's dynamic industrial sectors. This was mainly because of the discovery and development of the rich copper and tin deposits of Sociedade Mineira de Neves-Corvo S.A. (Somincor) at Neves-Corvo. Although Portugal was the largest producer of mined copper in the European Union (EU) in 2000, labor problems resulted in a decline of production from the previous year (table 1).

The Government continued with the country's privatization program and was proceeding with legislation that would privatize many public companies. The privatization issue was part of a broader program to reduce the role of the state and to restructure the Portuguese economy to one that is more market driven.

Portugal's economic growth during the last decade has been accompanied by a heavy investment in infrastructure improvements largely funded by the EU. From 1987 to 1999, Portugal received net financial flows from the EU of about \$27 billion (€29 billion). As a result, the country has made a number of major infrastructure improvements, most notably a system of modern highways. A new international airport and an upgrade of the country's rail system also were planned (U.S. Embassy, Lisbon, Portugal, 2000). Table 2 lists selected indices of industrial production.

#### **Commodity Review**

#### Metals

The Neves-Corvo Mine of Somincor and the Panasqueira tungsten mine of Avocet Mining plc were the two major

operations in the metals mining sector. Pirites Alentejanas S.A.R.L. was the country's largest producer of pyrite. Siderúr gia Nacional S.A.R.L. produced iron and steel. Cimentos de Portugal S.A. (Cimpor), which was an important producer of cement, was one of the companies included in the Government's privatization plans. With the exception of copper, dimension stone, ferroalloys, tin, and tungsten, which were of international importance, production of other minerals and related materials had only domestic significance. Most of the large mineral-related companies were owned or controlled by the Government, although some operations were privately owned (table 3).

Tables 4 and 5 list Portugese exports/reexports and imports of selected mineral commodities in 1998 (the latest year for which data are available).

Somincor was 51% Government-owned through the mining conglomerate Empresa de Desenvolvimento Mineiro (EDM). The minority partner was Rio Tinto Ltd. of the United Kingdom, which owned 49% of the joint venture. Somincor's underground mine, which used a drift-and-fill mining method, was designed to produce 1.5 million metric tons per year (Mt/yr) of raw ore that yielded a concentrate that averaged 26% copper content. A conventional drilling, blasting, and mucking cycle was used. Primary crushing of ore was underground, and the ore was moved by a conveyor to a vertical shaft, where it was hoisted to the surface for secondary crushing and treatment. The life of the mine, which was based on estimated proven reserves, was expected to be 20 years (Richards and others, 1991).

Rio Tinto informed the Portugese Government that it was selling its 49% interest in Somincor and had initiated a search for prospective candidates. Noranda Corp. of Canada and Outokumpu Oyi of Finland were two possibilities. Rio Tinto said the decision reflects its increasing focus on larger scale open pit copper operations. EDM was also prepared to sell part of its share but would retain 25% to 30% equity interest in Somincor (Metal Bulletin, 2000).

The Jales-Tres Minas District was probably the most important gold district in Portugal. The area includes the ancient Jales Mine and is 150 km east of Oporto. By the end of its operation, the Jales Mine had produced more than 25 metric tons (t) of gold and more than 100 t of silver and had reached a depth of 600 meters (m) (Neiva and others, 1989).

Gold exploration activities were continuing at Jales-Tres Minas. The joint venture of Sociedade des Mines du Bourneix and EDM reevaluated some of the old deposits that had not been worked since the 1980s.

The Portuguese iron and steel operation was nationalized in 1975 to function as a public entity incorporated as Siderúrgia Nacional Empresa de Productos Planos (SN-Planos). In 2000, the Government changed SN-Planos into a public limited company as a major step toward privatization.

Avocet's Panasqueira Mine was one of the world's largest producers of tungsten concentrates outside of China. Avocet

commissioned a new subvertical shaft that accessed 4.7 Mt of estimated ore resources with an in situ grade of 0.33% tungsten oxide (WO<sub>3</sub>), given an estimated 10-year life at current (2000) extraction rates. Avocet was undertaking a program to develop these WO<sub>3</sub> resources to a mining reserve category with the possibility of expanding production (Avocet Mining plc, 2000, Tungsten mining, accessed March 26, 2001, at URL http://www.avocet.co.uk/mining/tungstenmining.htm).

EuroZinc Mining Corp. was formed in early 1999 by the amalgamation of Auspex Mining Ltd., EDM, and International Vestor Resources Ltd. EuroZinc was encouraged by the results of a prefeasibility study that confirmed their expectation that on the basis of developing a new deposit, the Aljustrel mine/mill complex could be brought into production relatively quickly as a low-cost zinc producer. The Aljustrel project encompassed five massive sulfide deposits—the Feitas, the Moinho, the Estação, the Gavião, and the Algares. These are typically zoned VMS deposits with lead, silver, and zinc zones at the top and with copper zones at the bottom and are often separated by tens of meters of low-grade pyrite (EuroZinc Mining Corp., March 2000, Current projects, accessed March 27, 2001, at URL http://www.eurozinc.com/s/

CurrentProjects.asp?PropertyInfID=543)

The Feitais deposit was the most significant deposit in the Aljustrel Project area owing to its high zinc content, large tonnage, and existing infrastructure. It has extensive underground development in place. The deposit has a known strike length of 700 m; a projected strike length, based on gravity data, of 1,200 m; an average width of about 400 m; and an average thickness of about 60 m. The estimated proven and probable minable reserves were 12 Mt of zinc ore with an average grade of 5.67% zinc, an average grade of 1.7% lead, and an average grade of 64 grams per ton (g/t) silver. Proven and probable minable reserves were estimated to be 1.6 Mt of copper ore with an average grade of 2.2% copper, 0.97% zinc and 14 g/t silver (EuroZinc Mining Corp., March 2000, Current projects, accessed March 27, 2001, at URL

http:// www.eurozinc.com/s/

CurrentProjects.asp?PropertyInfoID=539).

#### **Industrial Minerals**

Portugal's industrial minerals sector was a modern and efficient producer of a variety of materials, most notably dimension stone and minerals for the manufacture of ceramics. The dimension stone industry continued to be an important segment of the mining industry in terms of value and trade.

Several international groups were interested in acquiring a stake in Portugal's largest cement producer Cimentos de Portugal S.A. (Cimpor). The Government was preparing to sell its 12.5% stake. Cimpor stated that it anticipated foreign acquisitions to increase output to between 25 and 30 Mt/yr in 4 years. Holderbank Group of Switzerland, Lafarge Group of France, and SECIL S.A. of Portugal were among the companies that had expressed interest in Cimpor (Wise, 2000). Demand for cement continued because the building and construction industry maintained a high level of activity. This situation was expected to continue to develop Portugal's infrastructure with the substantial volume of work in coming years.

Marble was the most valuable of the stone products and accounted for the majority of stone production. The main area for marble mining continued to be the Evora District.

#### **Mineral Fuels**

Since the closure of Empresa Carbonifera de Douro S.A.R.L.'s Germunde Mine at Castello de Pavia in 1997, most coal was imported. The mine closed because of high production costs and difficult mining conditions.

Petroleos de Portugal (Petrogal) embarked on an ambitious plan to reposition itself as a multinational energy firm. The Government established a new energy holding company Galp Petroleos e Gas de Portugal, which included Petrogal and Gas de Portugal (GDP). The arrival of natural gas though a new gas pipeline linking Algeria with Portugal and Spain has led to a massive increase in gas sales. GDP controls the gas pipeline company Transgas S.A. Petrogal itself has set basic targets--to develop its own production of hydrocarbons, to expand and upgrade its refineries to meet EU standards, to consolidate the distribution of petroleum products within the Iberian peninsula, to expand its cogeneration business, and to develop its chemicals business, namely aromatics. Petrogal was planning to invest about \$1 billion during the next 3 years on environmental measures and to improve efficiency of its downstream operations (Oil & Gas Journal, 2000).

#### Outlook

The present structure of the mineral industry could change in the near future because of significant mining exploration by several foreign companies. Copper, gold, kaolin, lead, lithium, pyrites, and tin were some of the minerals targeted for exploration. The IPB is the prime area for exploration activity and would appear to have an above-average potential for success based on an unusually high number of large VMS deposits.

#### **References Cited**

- Metal Bulletin, 2000, Rio Tinto seeks candidates for Somincor sale: Metal Bulletin, no. 8506, September 7, p. 17.
- Mining Journal, 1999, Iberia, the future lies deep: Mining Journal, v. 333, no. 8542, July 30, p. 86-87.
- Neiva, A.M., Neiva, J.M., and Silva, M.M., 1989, Geochemistry of gold quartz vein walls from Jales (northern Portugal): International Geological Congress, 28th, Washington, DC, June 1989, Abstracts 2, p. 504.
- Oil & Gas Journal, 2000, Portugal's Petrogal repositions itself: Oil & Gas Journal, v. 98, no. 7, February 14, p. 20.
- Richards, D.G., Carvalho, Pedro, and Sides, Edmund, 1991, Geology and reserves of complex sulphides at Neves-Corvo: Los Sulfururos Complejos del Suroeste de España, Sevilla, April 29-30, 1991, p. 12.
- U.S. Embassy, Lisbon, Portugal, 2000, Portugal: U.S. Department of State, Symposium, Country Commercial Guide, July, 78 p.
- Wise, Peter, 2000, Cement groups eye stake in Cimpor: Financial Times [London], no. 34231, May 31, p. 17.

#### **Major Sources of Information**

Cabinete Para Pesquisa e Exploração de Petróleo-MIE Rue Vale do Pereiro, 4 1200 Lisboa, Portugal Instituto Geológico e Mineiro R. Almirante Barroso, 38 1000 Lisboa, Portugal

### TABLE 1 PORTUGAL: PRODUCTION OF MINERAL COMMODITIES 1/2/

#### (Metric tons unless otherwise specified)

Commodity	1996	1997	1998	1999	2000 e/
METALS	100	50	50	50	50
Arsenic, white e/	100 4	50 5	50	50 4	50 4
Beryl concentrate, gross weight e/ Copper, mine output, Cu content	•	-	5	•	-
	107,773	106,479	114,637	99,459 r/	76,200 3/
Iron and steel:					
Iron ore and concentrate:	10 (20)	10.005	10.000	16,000	15.000
Gross weight, manganiferous	18,620	18,905	18,000 e/	16,000 e/	15,000
Fe content, manganiferous	7,876	6,800	6,800 e/	11,733 r/	11,800
Metal:					
Pig iron thousand tons	421	431	385	389	382 3/
Steel, crude do.	871	905	936 r/	1,038 r/	1,097 3/
Lead, refined, secondary e/	5,900	6,000	6,500	6,000	6,000
Manganese, Mn content of iron ore e/	500	500	500	500	500
Silver, mine output, Ag content kilograms	33,700	33,900	31,900	26,450 r/	20,430 3/
Tin:					
Mine output, Sn content	4,637	2,667	3,000 e/	2,163 r/	1,227 3/
Metal, primary and secondary e/	100	100	100	100	50
Tungsten, mine output, W content	776	1,036	831	434	743 3/
Uranium concentrate, U3O8	17	18	16	12	16 3/
Zinc, smelter, primary e/	3,600	3,600	3,600	4,000	3,600
INDUSTRIAL MINERALS					
Cement, hydraulic thousand tons	8,455	9,395	9,500 e/	9,400 e/	9,200
Clays:					
Kaolin 4/	177,423	180,000	180,000 e/	221,296 r/	127,581 3/
Refractory e/	392,148 3/	300,000	300,000	521,602 r/	500,000
Diatomite e/	1,550	1,540	1,600	785 r/	686 3/
Feldspar	98,596	121,380	120,000 e/	114,685 r/	119,837 3/
Gypsum and anhydrite e/	520,722 3/	500,000	500,000	550,000	500,000
Lime, hydrated and quicklime e/	200,000	200,000	200,000	200,000	200,000
Lithium minerals, lepidolite	7,626	6,883	8,000	14,862 r/	9,352 3/
Nitrogen, N content of ammonia	197,600	195,600	204,400	223,200	246 3/
Pyrite and pyrrhotite (including cuprous), gross weight e/	10,000	10,000	10,000	10,000	10,000
Salt, rock	609,639	596,000	600,000 e/	558,807 r/	584,516 3/
Sand e/	5,127 3/	5,000	4,000 r/	3,664 3/	4,000
Sodium compounds, n.e.s.: e/	5,127 57	5,000	1,000 1/	5,001 5/	1,000
Soda ash	150,000	150,000	150,000	150,000	150,000
Sulfate	50,000	50,000	50,000	50,000	50,000
Stone: e/	50,000	50,000	50,000	50,000	50,000
Basalt thousand tons	100	100	100	520,262 r/	500,000
Calcareous: do.	100	100	100	520,202 1/	500,000
Dolomite do.	510	500	500	500	500
Limestone, marl, calcite do.	35,370 3/	15,000	15,000	35,580 3/	35,000
	,	900	900		900 <sup>33</sup> ,000
	945			1,215 3/	
	282	1,000	1,000	17,649 3/	1,700
Gabbro do.	147	100	100	100	100
Granite, crushed do.	18,412 3/	24,057 3/	25,000	22,400 3/	20,000
Granite, ornamental do.	400	400	500	458 3/	500
Graywacke do.	60	20	22	20	20
Ophite do.	25	9	5	3	5
Quartz do.	14	14	15	15	38 3/
Quartzite do.	594	500	500	573 3/	600
Schist do.	260	100	100	136 3/	140
Slate do.	20	30	40	46 3/	40
Syenite do.	27	86	80	80	80
Sulfur: e/					
Content of pyrites	5,000	5,000	5,000		
Byproduct, all sources	30,000	30,000	30,000	32,000	30,000
Total	35,000	35,000	35,000	32,000	30,000
Talc	8,277	8,236	8,400	9,554 r/	7,407 3/

### TABLE 1--Continued PORTUGAL: PRODUCTION OF MINERAL COMMODITIES 1/2/

#### (Metric tons unless otherwise specified)

Comn	1996	1997	1998	1999	2000 e/	
MINERAL FUELS AND	RELATED MATERIALS					
Coke, metallurgical e/	thousand tons	332 3/	330	330	325	325
Gas, manufactured e/	million cubic meters	125	125	125	125	125
Petroleum refinery products:	-					
Liquefied petroleum gas	thousand 42-gallon barrels	4,338	4,500	4,500 e/	4,500 e/	4,500
Gasoline	do.	21,828	15,000	15,000 e/	15,000 e/	15,000
Jet fuel	do.	7,500	7,000	7,000 e/	7,000 e/	7,000
Kerosene	do.	400	225	225 e/	225 e/	225
Distillate fuel oil	do.	20,000	20,000	20,000 e/	20,000 e/	20,000
Residual fuel oil	do.	20,000	20,000	20,000 e/	20,000 e/	20,000
All other products	do.	9,000	10,000	10,000 e/	10,000 e/	10,000
Refinery fuel and losses	do.	3,500	3,000	3,000 e/	3,000 e/	3,000
Total	do.	86,566	79,725 r/	79,700 r/ e/	79,700 r/ e/	79,700

e/ Estimated. r/ Revised.

1/ Table includes data available through March 2001.

2/ Estimated data are rounded to no more than three significant digits; may not add to totals shown.

3/ Reported figure.

4/ Includes washed and unwashed kaolin.

### TABLE 2 PORTUGAL: SELECTED INDICES OF PRODUCTION

#### (1990 = 100)

Sector	1997	1998	1999	2000 e/
General	103	113	117	120
Mining	86	92	90	95
Manufacturing	102	108	110	112
Electricity and gas	113	146	169	170

e/ Estimated.

Source: United Nations, 2000, Monthly Bulletin of Statistics, v. LIV, no. 12, December, p. 30.

### TABLE 3 PORTUGAL: STRUCTURE OF THE MINERAL INDUSTRY IN 2000

#### (Thousand metric tons unless otherwise specified)

		Major operating companies	Location of	Annual
Comm	nodity	and major equity owners	facilities	capacity
Cement		Cimentos de Portugal S.A. (Government, 100%)	10 plants, various locations	6,000
Copper concentrate		Sociedade Mineira de Neves-Corvo S.A. (Somincor)	Neves-Corvo Mine near Castro Verde	500
		(Government, 51%; Rio Tinto Ltd., 49%)		
Diatomite		Sociedade Anglo-Portugesa de Diatomite Lda.	Mines at Obidos and Rolica	5
Feldspar		A.J. da Fonseca Lda.	Seixigal Quarry, Chaves	10
Ferroalloys		Electrometalúrgia S.A.R.L.	Plant at Setubal	100
Petroleum, refined	barrels per day	Petroleos de Portugal (Government, 100%)	Refineries at Lisbon, Porto, and Sines	300,000
Pyrite		Pirites Alentejanas S.A.R.L.	Plant at Setubal	100
Steel, crude		Siderurgia Nacional S.A.R.L. (Government, 100%)	Ironworks and steelworks at Seixal and Maia	1,000
Tin		Somincor (Government, 51%; Rio Tinto Ltd., 49%)	Neves-Corvo Mine near Castro Verde	5
Tungsten		Avocet Mining plc	Panasqueira Mine and plant at Barroca Grande	1,600
Uranium	tons	Empresa Nacional de Uranio S.A. (Government, 100%)	Mines at Guargia, plant at Urgeirica	150
Zinc, refined		Quimigal E.P. (Government, 100%)	Electrolytic plant at Barreiro	11

#### TABLE 4 PORTUGAL: EXPORTS OF MINERAL COMMODITIES IN 1998 1/

#### (Metric tons unless otherwise specified)

United         Total         States         Other (principal)           MITALS         Administry         Filled         Principal (Principal)           Oxde and hydroxides         24         -         Thuiland 20, Demmark 3.           Ask and reacion         272         -         Adl to Spain.           Metal including alloys:         12,349         -         Spain 12945. Finance 2,166. Gramay 80.           Strain reacion and strain				Destinations
Metri Als           Oxide and hydroxides         24         -         Thailand 20, Demark 3.           Advand residue         272         -         All to Spain.           Meal including alloys:         -         Spain 12,084; Hong Kong, China S2, Netherlands 56.           Sering mutal including alloys, all forms wake, thousands         31         -         Spain 12,085; France 23165 (China S2, Netherlands 56.           Meal including alloys, all forms wake, thousands         53         -         Meal including alloys, all forms wake, thousands           Stendy, metal including alloys, all forms wake, thousands         53         -         All to Saria           Stendy, metal including alloys, all forms wake, thousands         53         -         All to Saria           Stendy, metal including alloys, all forms wake, thousands         53         -         All to Saria           Stendy         9,892         -         Spain 91,25; Beigium-Luxenbourg 240; Netherlands 233.           Unorweight         value, thousands         5436         -         All to Spain           Gold         walue and overepring         value, thousands         51         Fail Start				
Ahminami         Conside and phythologics         Part Including alloys           Oxide and phythologics         272         -         All to Spain.           Meal including alloys         272         -         All to Spain.           Scrap         12,149         -         Spain 12,045; France 2,185; Germany 80.           Scrap         22,341         -         Spain 31,045; France 2,185; United Kingdom 810           Marimory, medi including alloys, all forms         do         S1         -           Ore and concentrate         447,370         -         Germany 128,186; Finland 120,854; Spain 101,772.           Stafate         3         -         All to San Tome and Praceps           Ore and concentrate         9.892         -         Spain 9,125; Balgium-Atexenbarg 209; Netherlands 213.           Stafate         3         -         All to San Tome and Praceps           Meat including alloys, unvorught and partly wro         58,285         513         Iably 54,075; Spain 53,084; Gaben 55.           Ore and seccings         value, thousands         53.60         -         All to Spain.           Water and sweepings         value, thousands         53.60         -         All to Spain.           Water and sweepings         value, thousands         53.60         -		Total	States	Other (principal)
Oxider and hydroxider         24         - Thailand 20: Demark 3.           Ada and residue         272         - All to Spain.           Metal including alloys.         -         Spain 12.084; Hong Kong, China 82; Netherlands 56.           Unrorought         34.213         -         Spain 3.194; France 2.136; United Kingdom 810.           Sternin, match including alloys, all forms value, thousands         53         -         Brazil S1; Spain S1.           Birnuch, med including alloys, all forms value, thousands         53         -         Brazil S1; Spain S1.           Copper:         -         Germany 128,186; Finland 120,854; Spain 101,772.         Of Cernator S1.25; Beigium-Lixerbourg 249; Netherlands 23.3.           Corper:         -         -         Germany S1.3.         -           Metal including alloys:         -         Spain 9.125; Beigium-Lixerbourg 249; Netherlands 23.3.           Unrocoght         value, thousands         54.36         -         All to Spain 702; France 514.           Gold         -         Spain 1.126; Spain 33.044; Spain S15.         -         All to Spain 72.           Metal including alloys, unorought and partly two do         S.838         S13         Hall Sy Main 72.         -           Metal including alloys, unorought and partly two do         S.836         310         Hall to Moroco.				
Ash and residue         272         -         All to Spinn.           Metal including alloys.         -         Spin 12.0494, Hong Kong, China S2, Netherlands 56.           Unrorugght         12.121         -         Spin 31.943, France 2.186, Germany 80.           Seminanufactures         7.703         (2)         Spin 31.943, France 2.185, United Kingdom 810.           Antimory. metal including alloys, all forms         a         All to Sal Tome and Practice           Ore and concentrate         447.370         -         Germany 128,186, Finland 120,854, Spin 101,772.           Staffate         3         -         All to Sal Tome and Practice         232           Umrought         value, thousands         52.209         -         Spin 11,078, Spin 101,772.           Staffate         3         -         All to Sal Tome and Practice         233           Umrought         value, thousands         52.00         -         One many S1.271, United Kingdom 541, Spin 101,772.           Wast and sweepings         value, thousands         \$33         -         All to Spin.           Wets and sweepings         value, thousands         \$36         -         All to Spin.           Ore and concentrate, including aloys, unrought and party wore do         \$88.35         S13         Italy 54,075; Spin 35,084; Gaben S5.		24		Thailand 20: Denmark 3
Meal including alloys:         Image: Scrap         Image:	· · · · · · · · · · · · · · · · · · ·			
Serg         12.49         — Sprin 12.084, Hong Kong, China 82, Netherlands 56.           Unwrought         342.13         — Sprin 13.044, France 2.186, Germany 80.           Seminnanufscutures         7.703         (2)         Sprin 2.798, France 2.315, United Kingdom 810           Antmory, medi including alloys, all forms         do.         81         — All to Larvia.           Coppert         —         Germany 128, 186, Finland 120, 854, Sprin 101, 772.           Sulfate         3         — All to Sarto more and Principe.           Serg         — Value, thousands         \$2,209         — Germany 128, 186, Finland 120, 854, Sprin 101, 772.           Sulfate         3         — All to Sarto more and Principe.         \$2,003           Serg         — Sprin 9, 125, Relgium-Larcenbourg 249, Netherlands 233         Unwrought         vulue, thousands         \$2,209         — Germany 13,213, United Kingdom 541, Sprin 131, Mark Starto Starto Mark and sweepings         value, thousands         \$436         — All to Sarto Starto Mark Starto Starto Starto Mark Starto Starto Starto Starto Mark Starto Starto Starto Mark Starto Starto Starto Starto Starto Mark Starto				
Unvrough     34,213     -     Spain 31,943; France 2,315; United Kingdom 810.       Antimory, medi including alloys, all forms     do.     \$1     -     Branzi SI; Spain SI.       Bimuth, medi including alloys, all forms     do.     \$1     -     Alt to Larvia.       Copper:     -     Germany 128,186; Finland 120,854; Spain 101,772.       Suffade     3     -     Alt to Sao Tome and Principe.       Medi including alloys:     -     Scrap     -     Spain 9,125; Belgiar-Lancenburg 249; Netherlands 233.       Unvrought     value, thousands     S22.09     -     Spain 9,125; Belgiar-Lancenburg 249; Netherlands 233.       Unvrought     value, thousands     S22.09     -     Germany 123, 110ied Kingdom 541, Spain 531, 644; Gislon 55.       Strap     -     Alt to Spain.     -     Alt to Spain.       Media including alloys, unvrought and partly word.     S.835     S13     Idty 54,675, Spain 53,684, Gabon 55.       Ion and steel:     -     -     Alt to Spain.     -       Scrap     121,427     Spain 118,986; Hong Kong, China 2,195; Angola 117.     -       Pig ion, cast ion, relide materials     3,006     -     Spain 14,108, Angola 2,107; Moreceo 14, Marce 10.       Ferromagnecic     27     -     Spain 14,108, Moreceo 13.     -       Ferromagnecic     27	0,	12,349		Spain 12,084; Hong Kong, China 82; Netherlands 56.
Semimanufactures         7,703         (2)         Spin 2,798, France 2,215, Unied Kingdom 810.           Antimory, need including alloys, all forms         do.         81         All to Larvia.           Corper:		· · · · · ·		
Bismuth, meal including alloys, all forms         do.         \$1         -         All to Latvia.           Ore and concentrate         447,370         -         Germany 128,185; Finland 120,584; Spain 101,772.           Suffae         3         -         All to Sai Tome and Principe.           Metal including alloys:         -         -         Germany 128,185; Finland 120,584; Spain 101,772.           Suffae         3         -         All to Sai Tome and Principe.           Metal including alloys:         -         Germany 51,321; Unick Kingdom 5641; Spain 5215.           Seminanufactures         3,203         1         United Kingdom 1,109; Spain 912; France 514.           Waste and sweeprings         value, thousands         \$436         -         All to Spain.           Metal         Inaly 54,675; Spain 53,684; Gabon 55.         Inaly 54,675; Spain 53,684; Gabon 55.         Inaly 54,675; Spain 53,684; Gabon 55.           Ore and concentrate, including roasted pyrite         5.00         -         All to Morecco.           Metal         121,427         32         Spain 118,986; Hones 10.           Prior Comminin         4         -         All to Morecco.           I'errorangances         27         -         Spain 14,140         Moreco.           Part olde products:         -	Semimanufactures	7,703	(2/)	Spain 2,798; France 2,515; United Kingdom 810.
Copper	Antimony, metal including alloys, all forms value, thousands			
Ore and concentrate         447,370         -         Germany 128,185; Prinded 120,584; Spain 101,772.           Sulfate         3         -         All to Sao Tome and Principe.           Metal including alloys:         -         Serip         9,892         -         Spain 9,125; Belgiom-Lucembourg 249; Netherlands 233.           Unwrought         value, thousands         \$2,209         -         Germany S1,321; United Kingdom 5641; Spain 5215.           Serim and source starting         3,203         1         United Kingdom 1,109; Spain 912; France 514.           Metal including alloys, unwrought and partly wro         do.         58,385         \$13         Iluly 54,675; Spain 53,684; Gabon 55           Ore and concentrate, including roasted pyrite         5.500         -         All to Morecco.           Metal         -         Spain 118,986; Honge Kong, Chima 2,195; Angola 117.           Pig tron, cast iron, related materials         3,006         -         Spain 2,197; Morecco 46, Benin 20.           Ferroralizors:         -         Spain 14,1087; Angola 2,450; Cape Verde 267.         Spain 14,183; Angola 2,420; Cape Verde 267.           First of the productive:         -         All to Morecco.         -           Of rison or nonalizoy steel         -         All to Spain.         Spain 14,183; Angola 2,420; Cape Verde 267.           <		\$1		All to Latvia.
Suffare         3         -         All to Sao Tome and Principe.           Metai including alloys:         9.892         -         Spain 91.25; Belgium-Lacemborg 249; Netherlands 233.           Unwrought         value, thousands         \$2,209         -         Germany \$1321; United Kingdom 5641; Spain \$215.           Gorda         -         All to Spain         Dinited Kingdom 1,109; Spain 912; France 514.           Gold         -         All to Spain         States and sweepings         value, thousands           Maste and sweepings         value, thousands         \$436         -         All to Spain           Ore and concentrate, including roasted pyrite         5,500         -         All to Moroeco.           Metai         -         Strap         Spain 118,986; Hong Kong, China 2,195; Angola 117.           Pir gron, cast iron, related materials         3,006         Spain 12, Woroeco 46; Benin 2,0           Ferrorolloys:         -         All to Moroeco.         Terrorolloys:           Ferrorolloys:         -         All to Moroeco.         Terrolloys:           Ferrorolloys:         -         All to Moroeco.         Terrolloys:           Of iron or nonalloy stoci         1         -         All to Spain 14; Moroeco 13.           Of iloysteel         5,620         Ireland				
Metal including alloys:         9,892         Spain 9,125; Belgium-Luxembourg 249; Netherlands 233.           Unwrough         value, thousands         \$2,209         Germany \$1,325; Belgium-Luxembourg 249; Netherlands 233.           Waste and sweepings         value, thousands         \$2,03         1         United Kingdom 1,109; Spain 912; France 514.           Gold         Maste and sweepings         value, thousands         \$436         -         All to Spain.           Metal including alloys, unwrought and partly wro         do.         \$8,385         \$13         laby 34,675; Spain 33,684; Gabon \$5.           For and concentrate, including roasted pyrite         5,500         -         All to Morocco.           Metal         Sering and sweepings         value, thousands         \$42         -         All to Morocco.           Ferroatoronium         4         -         All to Morocco.         Ferroatoronium         -         All to Morocco.           Ferrorsbitoon         218         Spain 118,986; Hong Kong, China 2,195; Angola 117.         To spain 14, Morocco 13.         Ferroatoronium         -         All to Spain 14, Morocco 13.           Ferroatoronium forms         88,366         20,062         Spain 14,183; Angola 2,420; Cape Verde 267.         Spain 14,164; Goardo 13, 1053         138,19         Spain 14,1648; Goarang 15,919; United Kingdom 6,367.     <		· · · · · ·		
Scrap         9,92         Spain 9,125: Belgium-Laxenbourg 249; Netherlands 323.           Uuwrought         value, thousands         \$2,209         - Germany \$1,321; United Kingdom \$41; Spain \$215.           Semimanufactures         3,203         1         United Kingdom 1,109; Spain 912; France \$14.           Gold.         Maste and sweepings         value, thousands         \$436         -         All to Spain.           Metal including alives, unwrought and partly wro         0s         \$8,385         \$113         Italy \$4,675; Spain \$3,684, Gabon \$5.           Ore and concentrate, including roussied pyrite         5,500         -         All to Moroeco.           Metal         -         Scrap         121,427         32         Spain 118,386, Hong Kong, China 2,195; Angola 117.           Fregronaloys:         -         Spain 12,37; Moroeco 46; Benin 20.         -         Ferroraloys:           Ferroraloys:         -         Spain 14, Moroeco 1.         -         All to Moroeco.           Ferroraloys:         -         Spain 14, Moroeco 1.         -         All to Moroeco 2.         Nocambigue 1.         -           Unspecified         1         -         All to Spain         -         All to Moroeco 2.         Nocambigue 3.         Argoin 14,1483; Angola 2,420; Cupe Verde 267.         -		3		All to Sao Tome and Principe.
University         value, thousands         \$2,209         -         Germany \$1,221, United Kingdom 1,009, Spain \$215.           Semimanufactures         3,203         1         United Kingdom 1,009, Spain \$215.           Gold         3,203         1         United Kingdom 1,009, Spain \$215.           Waste and sweepings         value, thousands         \$436         -         All to Spain.           Metal including alloys, unwrought and parity wro         do.         \$8,385         \$13         Italy \$4,675, Spain \$3,684, Gabon \$5.           Or and concentrate, including rossted pyrite         5,500         -         All to Moroeco.           Metal         3006         -         Spain 118,986, Hong Kong, China 2,195, Angola 117.           Pigron, cast iron, related materials         3,006         -         Spain 114, Moroeco 13.           Ferronanganese         27         Spain 14, Moroeco 14.         -           Ferronanganese         27         Spain 14, Moroeco 14.         -           Of iron or nonalloy steel:         -         All to Spain.         -           Of iron or nonalloy steel:         -         Spain 14,183, Angola 2,402, Cape Verde 267.         -           Sami and accessories         157         -         India 3, Morzanda 6,634.         -           Of aloy stee		0.802		Spain 0 125: Delaium Luwambaura 240: Natharlanda 222
Semimanufactures         3,203         1         United Kingdom 1,109, Spain 912; France 514.           Wate and sweepings         value, thousands         \$436         -         All to Spain.           Metal including alloys, unwrought and partly wro         \$8,385         \$13         Italy \$4,675; Spain \$3,684; Gabon \$5.           More and steel:         -         All to Moroeco.         -         All to Moroeco.           Metal:         -         All to Moroeco.         -         All to Moroeco.           Serap         121,427         32         Spain 12,57; Moroeco 46, Benin 20.         -           Ferronalitys:         -         All to Moroeco.         -         -           Ferronalitys:         -         Spain 125; Moroeco 16, Benin 20.         -           Unspecified         1         -         All to Spain.         -           Unspecified         1         -         All to Spain.         -           Steel, primary forms         88,366         20,062         Spain 14,154; Moroeco 14,995; Netherlands 10,050.           Semimanufactures:         -         -         All to Spain.         -         All to Spain 14,164; Gene 042,121         -         Spain 14,164; Gene 042,121         -         Spain 14,164; Gene 042,121         -         - <td< td=""><td>1</td><td>,</td><td></td><td></td></td<>	1	,		
Gold:         Value; thousands         \$436         - All to Spain           Metal including alloys, unwrought and partly wro         do.         \$8,385         \$13         Italy \$4,675; Spain \$3,684; Gabon \$5.           Ore and concentrate, including roasted pyrite         5,500         -         All to Moreceo.           Metal          Scrap         121,427         32         Spain 118,986; Hong Kong, China 2,195; Angola 117.           Pig iron, cast ron, related materials         3,006         -         Spain 14, 986; Hong Kong, China 2,195; Angola 117.           Pigromagnese         27         -         Spain 14, Moreceo 13.         -           Ferroalizons         218         -         Spain 14, Moreceo 13.         -           Orspecified         1         -         All to Moreceo 14, 1957; Moreceo 14, 995; Netherlands 10,050.           Seminimutactures:         -         Spain 14, 183; Angola 2,420; Cape Verde 267.         -           Of ion or no alloy steel:         -         Spain 14, 183; Angola 2,420; Cape Verde 267.         -           Of alloy steel         5.666         3         Freinad 3, 208; Unital Kingdom 731.         -           Bars, rods, angles, shapes, sections         176,378         532         Spain 14,1648; Germany 15,919; United Kingdom 487.           Tubes, pipes, fittings </td <td></td> <td></td> <td></td> <td></td>				
Wate and sweepings         value, thousands         \$436         -         All to Spain.           Metal including alloys, unwrought and partly wro         58,385         \$13         Italy \$4,675; Spain \$3,684; Gabon \$5.           Ore and concentrate, including roasted pyrite         5,500         -         All to Moreco.           Metal:         2         Seara         All to Moreceo         Seara         All to Moreceo 13.         Ferroallays:         Seara         Seara         Seara         All to Spain         Seara		5,205	1	United Kingdom 1,109, Span 912, Flance 514.
Metal including alloys, unvrought and partly wro       do.       \$8,385       \$13       Itally \$4,675; Spain \$3,684; Gabon \$5.         Ion and stecl:       -       All to Morocco.         Metal:       -       All to Morocco.         Scrap       121,427       32       Spain 118,986; Hong Kong, China 2,195; Angola 117.         Pig tron, cast iron, related materials       3,006       -       Spain 2,937; Morocco 46; Benin 20.         Ferronshorys       -       All to Morocco.       -         Ferronshorys       -       All to Norocco 13.       -         Ferronshoron       218       -       Spain 14. Morocco 14.       -         Unspecified       1       -       All to Spain       -       -       All to Spain       -		\$436		All to Spain
Ion and stecl:         All to Morecco.           Ore and concentrate, including roasted pyrite         5,500         -         All to Morecco.           Metal:         21,427         32         Spain 118,986; Hong Kong, China 2,195; Angola 117.           Pig tron, cast iron, related materials         3,006         -         Spain 2,937; Morecco 46; Benin 20.           Ferrorolloys:         -         -         Spain 14, Worecco 13.         -           Ferrorolloys:         -         Spain 14, Worecco 2; Morambique 1.         -           Unspecified         1         -         All to Spain         -           Steel, primary forms         88,366         20,062         Spain 14,183; Angola 2,420; Cape Verde 267.           Flat-rolled products:         -         -         Spain 14,183; Angola 2,420; Cape Verde 267.           Of iron or nonalloy steel:         -         -         Spain 14,183; Angola 2,420; Cape Verde 267.           Of alp steel         5,662         3         Ireland 3,208; Spain 16,88, United Kingdom 6,367.           Of alp steel         5,662         3         Ireland 3,208; Spain 16,88, United Kingdom 6,367.           Ruis and accessories         157         -         India 33; Morambique 33, Argening 4,37.           Wire         21,375         549         Spain 14,188; A				
Metal:         1           Scrap         121,427         32         Spain 118,986, Hong Kong, China 2,195, Angola 117.           Pig ron, cast iron, related materials         3,006         -         Spain 2,937, Morocco 46, Benin 20.           FerrorRolloys:         -         All to Morocco.         -           FerrorRolloys:         -         Spain 118,986, Hong Kong, China 2,195, Angola 117.           FerrorSition         218         -         Spain 114, Morocco 13.           Unspecified         1         -         All to Spain.           Stell, primary forms         88,366         20,062         Spain 14,183; Angola 2,420; Cape Verde 267.           Chian or nonalloy stel:         -         Of iron or nonalloy stel:         -           Of alloy steel         5,662         3         Ireland 3,208; Spain 100,728; Italy 13,094; Canada 6,654.           Of alloy steel         5,662         3         Ireland 3,208; Spain 10,888, United Kingdom 6,367.           Ruik and accessories         157         -         India 33; Mozambiague 33; Argentina 31.           Wire         21,375         549         Spain 14,1643; Gramma 15,919.           Oxides         3,217         417         Spain 2,466; Italy 217, Netherlands 51.           Metal including alloys:         -         Do. </td <td></td> <td>+ - <u>)</u></td> <td></td> <td></td>		+ - <u>)</u>		
Scrap         121,427         32         Spain 118,986; Hong Kong, China 2,195; Angola 117.           Pig iron, cast iron, related materials         3,006         -         Spain 2,937; Morocco 46; Benin 20.           Ferronalloys:         -         All to Morocco.         -           Ferronanganese         27         -         Spain 14; Morocco 13.           Ferrosicion         218         -         Spain 14; Morocco 13.           Unspecified         1         -         All to Spain.           Steel, primary forms         88,366         20,062         Spain 34,154; Morocco 14,995; Netherlands 10,050.           Semimandfactures:         -         -         All to Spain.         -           Of iron or nonalloy steel:         -         -         Spain 14,183; Angola 2,420; Cape Verde 267.           Clad, plated, coated         163,153         13,819         Spain 100,728; Italy 13,094; Canada 6,634.           Of alloy steel         5.662         3         Ireland 3,208; Spain 1,688; United Kingdom 271.           Bars, roks, angles, shapes, sections         1757         553         Spain 14,1648; Angola 73; Angola 73; Moroca 487.           Tubes, pipes, fittings         53,015         142         Spain 18,888; Kangla 75; Chinded Kingdom 487.           Tubes, pipes, fittings         5,217	Ore and concentrate, including roasted pyrite	5,500		All to Morocco.
Pig iron, cast iron, related materials       3,006       -       Spain 2,937; Morocco 46; Benin 20.         Ferrosalloys:       -       All to Morocco.         Ferrosalicon       218       -       Spain 14; Morocco 13.         Perrosalicon       218       -       Spain 14; Morocco 14, 995; Netherlands 10,050.         Semimanufactures:       -       -       All to Spain.         Semimanufactures:       -       -       All to Spain.         Of iron or nonalloy steel:       -       Spain 14; Morocco 14,995; Netherlands 10,050.         Of alloy steel       -       Spain 14,183; Angola 2,420; Cape Verde 267.         Clad, plated, coated       17,412       -       Spain 100,728; Itapl 13,094; Canada 6,634.         Of alloy steel       5,662       Ireland 3,208; Spain 16,488; Margola 715; United Kingdom 271.         Bars, rods, angles, shapes, sections       176,378       532       Spain 14,1648; Germany 15,919; United Kingdom 271.         Wire       21,375       549       Spain 14,648; Germany 15,919; United Kingdom 487.       Tubes, pipes, fittings       3,217       417       Spain 46,363; Angola 2,326; Cape Verde 1,090.         Lead:       -       -       All to Spain.       Spain 46,363; Angola 2,326; Cape Verde 1,090.         Seraip       1,542       -       All to Spain.	Metal:			
Ferroalloys:     4     -     All to Morocco.       Ferronalloys:     27     -     Spain 14; Morocco 13.       Ferrosilicon     218     -     Spain 215; Morocco 2; Mozambique 1.       Unspecified     1     -     All to Spain.       Steel, primary forms     88,366     20,062     Spain 14; Morocco 14,995; Netherlands 10,050.       Seminanufactures:     -     All to Spain.     Spain 34,154; Morocco 14,995; Netherlands 10,050.       Seminanufactures:     -     Of ion or nonalloy steel.     -     Spain 14,183; Angola 2,420; Cape Verde 267.       Clad, plated, coated     163,153     13,819     Spain 10,0728; Italy 13,094; Canada 6,634.       Of alloy steel     5,662     3     Ireland 3,208; Spain 1,688; United Kingdom 6,71.       Bars, rods, angles, shapes, sections     176,378     532     Spain 18,888; Angola 75; United Kingdom 6,367.       Wire     21,375     549     Spain 18,888; Angola 7,32; United Kingdom 487.       Tubes, pipes, fittings     5,3015     142     Spain 18,888; Angola 2,326; Cape Verde 1,090.       Lead:     -     Do.     Seminanufactures     -     Do.       Serap     1,542     -     All to Spain.     Spain 41,648; Germany 15,919; United Kingdom 487.       Unwrought     5     -     Do.     Seminanufactures     - <tr< td=""><td>Scrap</td><td>121,427</td><td>32</td><td></td></tr<>	Scrap	121,427	32	
Ferrochromium         4         -         All to Moroeco.           Ferrositicon         27          Spain 14; Moroeco 13.           Ferrositicon         218          Spain 15; Moroeco 2; Mozambique 1.           Unspecified         1          All to Spain.           Steel, primary forms         88,366         20,062         Spain 34,154; Morocco 14,995; Netherlands 10,050.           Seminanufactures;          All to Anoteco.         1            Of iron or nonalloy steel:          Spain 14,183; Angola 2,420; Cape Verde 267.           Clad, plated, coated         17,412          Spain 14,1648; Camada 6,634.           Of iron or nonalloy steel         5,662         Ireland 3,208; Spain 10,0728; Italy 13,044; Canada 6,634.           Of alloy steel         5,662         Ireland 3,208; Spain 11,648; United Kingdom 6,367.           Rails and accessories         157         -         India 3; Mozambique 3; Argentina 31.           Wire         21,375         549         Spain 14,648; Germany 15,919; United Kingdom 487.           Tubes, pipes, fittings         3,217         417         Spain 2,466; Italy 217; Netherlands 51.           Metal including alloys:         -         -         Do.           Sering		3,006		Spain 2,937; Morocco 46; Benin 20.
Ferromanganese         27         -         Spain 14; Morocco 13.           Ferrosilicon         218         -         Spain 215; Morocco 2; Mozambique 1.           Unspecified         1         -         All to Spain.           Steel, primary forms         88,366         20,062         Spain 34,154; Morocco 14,995; Netherlands 10,050.           Semimanufactures;         -         All to Spain.         Steel, primary forms           Of iron or nonalloy steel:         -         Spain 14,183; Angola 2,420; Cape Verde 267.           Clad, plated, coated         163,153         13,819         Spain 14,1688; Granada 6,634.           Of alloy steel         5,662         3         Ireland 3,208; Spain 1,688; United Kingdom 6,367.           Rails and accessories         157         -         India 33; Mozambique 33; Argentina 31.           Wire         21,375         549         Spain 46,362; Angola 2,326; Gape Verde 1,090.           Lead:         -         India 33; Mozambique 31.         Morocco 14,090.           Scrap         1,542         -         All to Spain 4,663; Garanya 15.919, United Kingdom 487.           Unwrought         5         -         Do.         Seminanufactures           Scrap         1,542         -         All to Spain.         Morocco.				
Ferrosilicon       218       -       Spain 215; Morocco 2; Mozambique 1.         Unspecified       1       -       All to Spain.         Steel, primary forms       88,366       20,062       Spain 34,154; Morocco 14,995; Netherlands 10,050.         Semimanufactures:       -       Spain 34,154; Morocco 14,995; Netherlands 10,050.         Flat-rolled products:       -       Spain 141,183; Angola 2,420; Cape Verde 267.         Of iron or nonalloy steel:       -       Spain 100,728; Italy 13,094; Canada 6,634.         Of aloy steel       5,662       3       Ircland 3,208; Spain 1688; United Kingdom 271.         Bars, rods, angles, shapes, sections       176,378       532       Spain 141,648; Germany 15,919; United Kingdom 6,367.         Rails and accessories       177       -       India 33; Mozambique 33; Argentina 31.         Wire       21,375       549       Spain 148,648; Germany 15,919; United Kingdom 487.         Tubes, pipes, fittings       53,015       142       Spain 46,363; Angola 775; United Kingdom 487.         Scrap       3,217       417       Spain 2,466; Italy 217; Netherlands 51.         Metal including alloys:       -       Do.       Semimanufactures         Scrap       1,542       -       All to Spain 86; France 18; Angola 8.         Maganescium, metal including allo				
Unspecified       1        All to Spain.         Steed, primary forms       88,366       20,062       Spain 34,154; Morocco 14,995; Netherlands 10,050.         Semimanufactures:         Spain 34,154; Morocco 14,995; Netherlands 10,050.         Flat-rolled products:         Spain 34,154; Morocco 14,995; Netherlands 10,050.         Of roll or no ronalloy steel:         Spain 14,183; Angola 2,420; Cape Verde 267.         Clad, plated, coated       163,153       13,819       Spain 100,728; Italy 13,094; Canada 6,634.         Of alloy steel       5,662       3       Ireland 3,208; Spain 14,1648; Germany 15,919; United Kingdom 6,367.         Rails and accessories       157        India 33; Mozambique 33, Argentina 31.         Wire       21,375       549       Spain 14,648; Germany 15,919; United Kingdom 6,367.         Tubes, pipes, fittings       53,015       142       Spain 46,363; Angola 2,326; Cape Verde 1,090.         Lead:        Oxides       3,217       417       Spain 2,466; Italy 217; Netherlands 51.         Metal including alloys:         Do.       Semimanufactures       114        Spain 86; France 18; Angola 8.         Magnesium, metal including alloys:         Do	<u>v</u>			1 /
Steel, primary forms       88,366       20,062       Spain 34,154; Morocco 14,995; Netherlands 10,050.         Semimanufactures:		218		
Semimanufactures:         Flat-rolled products:         Of iron or nonalloy steel:         Not clad, plated, coated         17,412       -       Spain 14,183; Angola 2,420; Cape Verde 267.         Clad, plated, coated       163,153       13,819       Spain 100,728; Italy 13,094; Canada 6,634.         Of alloy steel       5,662       3       Ireland 3,208; Spain 1,688; United Kingdom 271.         Bars, rods, angles, shapes, sections       176,378       532       Spain 141,648; Germany 15,919; United Kingdom 6,367.         Rails and accessories       157       -       India 33; Mozambique 33; Argentina 31.         Wire       21,375       549       Spain 18,888; Angola 7,5; United Kingdom 487.         Tubes, pipes, fittings       53,015       142       Spain 2,466; Italy 217; Netherlands 51.         Metal including alloys:       -       All to Spain.       Sectap         Scrap       1,542       -       All to Spain.       Sectap         Magnesium, metal including alloys:       5       -       Do.       Sectap         Scrap       value, thousands       \$25       -       Norway \$252; Singapore \$2.         Unwrought       61       -       All to Norway.         Marganese, oxides       value, thousands       \$11 <td< td=""><td><b>A</b></td><td>1</td><td></td><td>1</td></td<>	<b>A</b>	1		1
Flat-rolled products:         Of iron or nonalloy steel:         Not clad, plated, coated       17,412       -       Spain 14,183; Angola 2,420; Cape Verde 267.         Clad, plated, coated       163,153       13,819       Spain 100,728; Italy 13,094; Canada 6,634.         Of alloy steel       5,662       3       Ireland 3,208; Spain 1,688; United Kingdom 271.         Bars, rods, angles, shapes, sections       176,378       532       Spain 14,168; Germany 15,919; United Kingdom 6,367.         Rails and accessories       157       -       India 33; Mozambique 33; Argentina 31.         Wire       21,375       549       Spain 14,683; Angola 775; United Kingdom 487.         Tubes, pipes, fittings       53,015       142       Spain 46,363; Angola 2,326; Cape Verde 1,090.         Lead:       -       -       Spain 2,466; Italy 217; Netherlands 51.         Oxides       3,217       417       Spain 2,466; Italy 217; Netherlands 51.         Metal including alloys:       -       -       Do.         Scrap       1,542       -       All to Spain.         Unwrought       5       -       Do.         Magnesium, metal including alloys:       -       Norway \$252; Singapore \$2.         Unwrought       61       -       All to Morocco.		88,300	20,062	Spain 34,154; Morocco 14,995; Netherlands 10,050.
Of iron or nonalloy steel:           Not clad, plated, coated         17,412         -         Spain 14,183; Angola 2,420; Cape Verde 267.           Clad, plated, coated         163,153         13,819         Spain 100,728; Italy 13,094; Canada 6,634.           Of alloy steel         5,662         3         Ireland 3,208; Spain 1,688; United Kingdom 271.           Bars, rods, angles, shapes, sections         176,378         532         Spain 14,1648; Germany 15,919; United Kingdom 6,367.           Rails and accessories         157         -         India 33; Mozambique 33; Argentina 31.           Wire         21,375         549         Spain 18,888; Angola 775; United Kingdom 487.           Tubes, pipes, fittings         53,015         142         Spain 46,363; Angola 2,326; Cape Verde 1,090.           Lead:         Oxides         3,217         417         Spain 2,466; Italy 217; Netherlands 51.           Metal including alloys:         5         -         Do.           Serap         1,542         -         All to Spain.           Magnesium, metal including alloys:         5         -         Do.           Serap         value, thousands         \$255         -         Norway \$252; Singapore \$2.           Unwrought         61         -         All to Norway.           Man				
Not clad, plated, coated         17,412	1			
Clad, plated, coated163,15313,819Spain 100,728; Italy 13,094; Canada 6,634.Of alloy steel5,6623Ireland 3,208; Spain 1,688; United Kingdom 6,367.Bars, rods, angles, shapes, sections176,378532Spain 14,648; Germany 15,919; United Kingdom 6,367.Rails and accessories157-India 33, Mozambique 33; Argentina 31.Wire21,375549Spain 18,888; Angola 7.75; United Kingdom 487.Tubes, pipes, fittings53,015142Spain 18,888; Angola 2,326; Cape Verde 1,090.Lead:Oxides3,217417Spain 2,466; Italy 217; Netherlands 51.Metal including alloys:Do.Scrap1,542-All to Spain.Unwrought5-Do.Scrapvalue, thousands\$255-Norway \$252; Singapore \$2All to Norway.Magnesium, metal including alloys:3-Warcy3-All to Morocco.Molybdenum, metal including alloys:Unwrought5-Do.Marganese, oxidesvalue, thousands\$1-Mercury3-All to Morocco.Molybdenum, metal including alloys:Unwrought\$1-All to Morocco.Molybdenum, metal including alloys:Scrap28-Scrap28-Scrap28-All to BrazilSeminan		17.412		Spain 14,183: Angola 2,420: Cape Verde 267.
Of alloy steel5,6623Ireland 3,208; Spain 1,688; United Kingdom 271.Bars, rods, angles, shapes, sections176,378532Spain 14,648; Germany 15,919; United Kingdom 6,367.Rails and accessories157India 33; Mozambique 33; Argentina 31.Wire21,375549Spain 18,888; Angola 775; United Kingdom 487.Tubes, pipes, fittings53,015142Spain 46,363; Angola 2,326; Cape Verde 1,090.Lead:			13,819	
Bars, rods, angles, shapes, sections176,378532Spain 141,648; Germany 15,919; United Kingdom 6,367.Rails and accessories157-India 33; Mozambique 33; Argentina 31.Wire21,375549Spain 18,888; Angola 775; United Kingdom 487.Tubes, pipes, fittings53,015142Spain 46,363; Angola 2,326; Cape Verde 1,090.Lead:Oxides3,217417Spain 2,466; Italy 217; Netherlands 51.Metal including alloys:Do.Serap1,542-All to Spain.Magnesium, metal including alloys:-Do.Scrapvalue, thousands\$255-Norway \$252; Singapore \$2.Unwrought61-Magnese, oxidesvalue, thousands\$1-Moreury3-All to Norway.Monyought61-All to Norway.Monyought61-All to Norway.Monyought3-All to Brazil.Unwrought3-All to Brazil.Moreury3-All to Brazil.Semimanufacturesdo. \$5-Do.Nickel, metal including alloys:-Do.Unwrought1-All to Brazil.Semimanufacturesdo. \$5-Do.Semimanufactures3(2)-Wiree3-All to Spain.Semimanufactures3(2)-Serinanufactures3(2)- <td></td> <td>,</td> <td>3</td> <td></td>		,	3	
Rails and accessories157India 33; Mozambique 33; Argentina 31.Wire21,375549Spain 18,888; Angola 775; United Kingdom 487.Tubes, pipes, fittings53,015142Spain 46,363; Angola 2,326; Cape Verde 1,090.Lead:		176,378	532	Spain 141,648; Germany 15,919; United Kingdom 6,367.
Tubes, pipes, fittings53,015142Spain 46,363; Angola 2,326; Cape Verde 1,090.Lead:	Rails and accessories	157		
Lead:3,217417Spain 2,466; Italy 217; Netherlands 51.Metal including alloys:-All to Spain.Scrap1,542All to Spain.Unwrought5Do.Semimanufactures114Spain 86; France 18; Angola 8.Magnesium, metal including alloys:Norway \$252; Singapore \$2.Scrapvalue, thousands\$255Norway \$252; Singapore \$2All to Norway.Manganese, oxidesvalue, thousands\$1Mercury3All to Morocco.Molybdenum, metal including alloys:Do.Unwroughtvalue, thousands\$11Moryoghtvalue, thousands\$11Mercury3All to Morocco.Molybdenum, metal including alloys:Do.Unwroughtvalue, thousands\$11Semimanufacturesdo.\$5Do.StateDo.Nickel, metal including alloys:Do.Scrap28All to Spain.Semimanufactures3(2)United Kingdom 2.Rare-earth, metals including alloys, all forms20All to Angola.Silicon, high-purity15All to Spain.	Wire	21,375	549	Spain 18,888; Angola 775; United Kingdom 487.
Oxides3,217417Spain 2,466; Italy 217; Netherlands 51.Metal including alloys:-All to Spain.Unwrought5Do.Semimanufactures114Spain 86; France 18; Angola 8.Magnesium, metal including alloys:Norway \$252; Singapore \$2.Scrapvalue, thousands\$255Norway \$252; Singapore \$2All to Norway.Manganese, oxidesvalue, thousands\$1Mercury3All to Greece.Molybdenum, metal including alloys:All to Brazil.Unwroughtvalue, thousands\$11Moroughtvalue, thousands\$11Mercury3All to Brazil.Semimanufacturesdo.\$5Do.Nickel, metal including alloys:DoScrap28All to Spain.Serap28All to Spain.Serap28All to Angola.Stilicon, high-purity15All to Spain.	Tubes, pipes, fittings	53,015	142	Spain 46,363; Angola 2,326; Cape Verde 1,090.
Metal including alloys:Image: Constraint of the second				
Scrap1,542All to Spain.Unwrought5Do.Semimanufactures114Spain 86; France 18; Angola 8.Magnesium, metal including alloys:Norway \$252; Singapore \$2.Scrapvalue, thousands\$255Norway \$252; Singapore \$2.Unwrought61All to Norway.Manganese, oxidesvalue, thousands\$1All to Greece.Mercury3All to Morocco.Molybdenum, metal including alloys:All to Brazil.Unwroughtvalue, thousands\$11All to Brazil.Semimanufacturesdo.\$5Do.Nickel, metal including alloys:All to Spain.Scrap28All to Spain.Semimanufactures3(2/)United Kingdom 2.Rare-earth, metals including alloys, all forms20All to Angola.Silicon, high-purity15All to Spain.		3,217	417	Spain 2,466; Italy 217; Netherlands 51.
Unwrought5Do.Semimanufactures114Spain 86; France 18; Angola 8.Magnesium, metal including alloys:Scrapvalue, thousands\$255Unwrought61All to Norway.Manganese, oxidesvalue, thousands\$1Mercury3All to Greece.Molybdenum, metal including alloys:3All to Morocco.Unwroughtvalue, thousands\$11All to Brazil.Semimanufacturesdo.\$5Do.Nickel, metal including alloys:28All to Spain.Scrap28All to Spain.Semimanufactures3(2/)United Kingdom 2.Rare-earth, metals including alloys, all forms20All to Angola.Silicon, high-purity15All to Spain.		1.540		
Semimanufactures114Spain 86; France 18; Angola 8.Magnesium, metal including alloys:Scrapvalue, thousands\$255Norway \$252; Singapore \$2.Unwrought61All to Norway.Manganese, oxidesvalue, thousands\$1All to Greece.Mercury3All to Morocco.Molybdenum, metal including alloys:		,		*
Magnesium, metal including alloys:Norway \$252; Singapore \$2.Scrapvalue, thousands\$255Norway \$252; Singapore \$2.Unwrought61All to Norway.Manganese, oxidesvalue, thousands\$1All to Greece.Mercury3All to Morocco.Molybdenum, metal including alloys:All to Brazil.Unwroughtvalue, thousands\$11All to Brazil.Semimanufacturesdo.\$5Do.Nickel, metal including alloys:All to Spain.Scrap28All to Spain.Semimanufactures3(2/)United Kingdom 2.Rare-earth, metals including alloys, all forms20All to Angola.Silicon, high-purity15All to Spain.				
Scrapvalue, thousands\$255Norway \$252; Singapore \$2.Unwrought61All to Norway.Manganese, oxidesvalue, thousands\$1All to Greece.Mercury3All to Morocco.Molybdenum, metal including alloys:		114		span oo, manoe to, Aligola o.
Unwrought61All to Norway.Manganese, oxidesvalue, thousands\$1All to Greece.Mercury3All to Morocco.Molybdenum, metal including alloys:Unwroughtvalue, thousands\$11All to Brazil.Semimanufacturesdo.\$5Do.Nickel, metal including alloys:Scrap28All to Spain.Semimanufactures3(2/)United Kingdom 2.Rare-earth, metals including alloys, all forms20All to Angola.Silicon, high-purity15All to Spain.		\$255		Norway \$252: Singapore \$2.
Manganese, oxidesvalue, thousands\$1All to Greece.Mercury3All to Morocco.Molybdenum, metal including alloys:Unwroughtvalue, thousands\$11All to Brazil.Semimanufacturesdo.\$5Do.Nickel, metal including alloys:Scrap28All to Spain.Semimanufactures3(2/)United Kingdom 2.Rare-earth, metals including alloys, all forms20All to Angola.Silicon, high-purity15All to Spain.				
Mercury       3        All to Morocco.         Molybdenum, metal including alloys:				
Molybdenum, metal including alloys:				
Semimanufactures     do.     \$5      Do.       Nickel, metal including alloys:				
Nickel, metal including alloys:      All to Spain.       Scrap     28      All to Spain.       Semimanufactures     3     (2/)     United Kingdom 2.       Rare-earth, metals including alloys, all forms     20      All to Angola.       Silicon, high-purity     15      All to Spain.				All to Brazil.
Scrap28All to Spain.Semimanufactures3(2/)United Kingdom 2.Rare-earth, metals including alloys, all forms20All to Angola.Silicon, high-purity15All to Spain.		\$5		Do.
Semimanufactures3(2/)United Kingdom 2.Rare-earth, metals including alloys, all forms20All to Angola.Silicon, high-purity15All to Spain.				
Rare-earth, metals including alloys, all forms     20      All to Angola.       Silicon, high-purity     15      All to Spain.	<b>1</b>			
Silicon, high-purity 15 All to Spain.			(2/)	
		15		Ali to spalli.

### TABLE 4-Continued PORTUGAL: EXPORTS OF MINERAL COMMODITIES IN 1998 1/

(Metric tons unless otherwise specified)

			United	Destinations
Commodity		Total	States	Other (principal)
METALSContinued		Total	States	Other (principal)
	value, thousands	\$86		Spain \$67; Germany \$14; Angola \$2.
and partly wrought	value, thousands	400		Span \$67, Sermany \$14, Migola \$2.
Tin:				
Ore and concentrate		6,257		Malaysia 3,179; Thailand 2,802; Turkmenistan 255.
		0,237		Walaysia 5,179, Thanana 2,802, Turkineinstan 255.
Metal including alloys:		19		Notherlands 19: United Kingdom 1
Scrap				Netherlands 18; United Kingdom 1.
	value, thousands	\$8		Spain \$3; Angola \$2; Cape Verde \$1.
Titanium:		101		
Oxides		101		Angola 37; Cape Verde 24; Spain 21.
8,57	value, thousands	\$50	\$49	Spain \$1.
Tungsten:				
Ore and concentrate		1,269	1,209	Japan 60.
Metal including alloys:				
Unwrought		22		All to Brazil.
Semimanufactures	value, thousands	\$106		Israel \$63; Romania \$19; Japan \$18.
Uranium and thorium, ore and concentrate	do.	\$2,093		All to United Kingdom.
Zinc:		,		~
Oxides		6,985		Spain 4,365; France 877; Italy 536.
Ash and residue		96		All to Spain.
Metal including alloys:		,,,		·· ~ <b>r</b> ·····
Scrap		2,380		Spain 2,218; Germany 162.
Unwrought		128		Spain 101; unspecified 27.
Semimanufactures		780		Angola 418; Spain 129; Sao Tome and Principe 103.
Other:		780		Aligota 418, Spall 129, Sao Tollic and Thilepe 105.
Oxides and hydroxides		12 522		South Africa 12,006; Angola 526
	1 (1 1	13,532		South Africa 13,006; Angola 526.
· · · 1	value, thousands	\$131		All to Spain.
INDUSTRIAL MINERALS				
Abrasives, n.e.s.:				
Natural, corundum, emery, pumice, etc.	do.	\$46		Spain \$43; Angola \$3.
Artificial, silicon carbide		33		All to Spain.
Dust and powder of precious and	value, thousands	\$88		Cuba \$83; Greenland \$5.
semiprecious stones including diamonds				
Grinding and polishing wheels and stones		957	(2/)	Spain 609; Italy 169; Angola 32.
Barite and witherite		23		All to France.
Boron:				
Crude natural borates	value, thousands	\$1		All to Mozambique.
Oxides and acids		41		Spain 24; Angola 17.
Cement		34,990		Cape Verde 22,429; Sao Tome and Principe 6,069;
Cement		54,770		Guinea-Bissau 2.712.
Cl11-		5.046		/
Chalk		5,046		Spain 2,646; Brazil 1,230; Chile 572.
Clays, crude:		/=-		
Bentonite		671		Spain 610; Venezuela 40; Angola 21.
Chamotte earth and dinas earth		543		Morocco 473; Tunisia 48; Syria 22.
Fire clay		2,492		All to Spain.
Kaolin		2,741		Spain 1,821; Paraguay 449; Argentina 340.
Other		1		All to France.
Diamond, natural:				
	value, thousands	\$62,290	\$3,707	United Kingdom \$42,836; Belgium-Luxembourg \$15,653;
, <u> </u>	,		, - ,	Germany \$70.
Dust and powder	do.	\$88		Cuba \$83; Greenland \$5.
Diatomite and other infusorial earth	<b>u</b> 0.	4		All to Angola.
Feldspar		2,060		France 1,983; Spain 52; Italy 25.
Fertilizer materials, manufactured:				
Ammonia		25,122		Spain 18,515; Norway 6,603; Cape Verde 2.
Nitrogenous		132,561		Spain 87,426; Germany 28,987; Netherlands 5,989.
Phosphatic		41,725		Spain 28,158; Brazil 10,520; France 2,550.
Potassic	value, thousands	\$67		Cote d'Ivoire \$66; Cape Verde \$1.
TT : C 1 1 : 1		14,893		Spain 141,165; Cote d'Ivoire 2,666; Angola 23.
Unspecified and mixed				
Fluorspar		2		All to Morocco.

### TABLE 4--Continued PORTUGAL: EXPORTS OF MINERAL COMMODITIES IN 1998 1/

#### (Metric tons unless otherwise specified)

			Destinations
		United	
Commodity	Total	States	Other (principal)
INDUSTRIAL MINERALSContinued			
Gypsum and plaster	471		Cape Verde 248; Angola 171; Iceland 26.
Iodine value, thousands	\$2		Angola \$1; Cape Verde \$1.
Lime	4,084		Spain 2,250; Angola 1,548; Cape Verde 151.
Magnesium compounds, oxides and hydroxides	10		Norway 9; Mexico 1.
Mica:			
Crude including splittings and waste	4		Angola 3; Morocco 1.
Worked including agglomerated splittings value, thousands	\$3		Angola \$1; Mozambique \$1; Netherlands \$1.
Pigments, mineral, iron oxides and hydroxides, processed	74		Spain 39; Angola 21; Guinea-Bissau 9.
Precious and semiprecious stones other value, thousands	\$90		Switzerland \$55; Germany \$34.
than diamond, natural			
Quartz crystal, piezoelectric do.	\$8		All to France.
Salt and brine	13,048	274	Nigeria 6,755; Liberia 2,428; Germany 1,913.
Sodium compounds, n.e.s., soda ash, manufactured	3,967		Spain 3,550; France 282; Angola 115.
Stone, sand and gravel:	,		
Dimension stone:			
Crude and partly worked	477,257	876	Germany 139,449; Spain 136,421; France 41,288.
Worked	595,612	15,903	Germany 215,058; France 39,459; Denmark 35,826.
Dolomite, chiefly refractory-grade	7,477		Norway 7,475; Spain 2.
Gravel and crushed rock	12,383		France 6,354; Lebanon 3,006; Spain 2,191.
Limestone other than dimension	4		
Quartz and quartzite	40,557		Norway 39,095; Ireland 565; France 432.
Sand other than metal-bearing	96,869		Italy 59,866; Spain 33,682; Israel 1,677.
Sulfur:	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		1
Elemental:			
Crude including native and byproduct	11,342		Lebanon 6,898; Slovenia 3,062; Spain 1,116.
Colloidal, precipitated, sublimed	8		
Sulfuric acid	213		Angola 135; Cape Verde 58; Congo (Kinshsa) 13.
Talc, steatite, soapstone, pyrophyllite	76		Angola 34; Saudi Arabia 20; Spain 15.
Other:	10		Thigon 34, Suudi Thuola 20, Span 15.
Crude	4,071		Spain 4,065; Angola 3; Italy 2.
Slag and dross, not metal-bearing, granulated slag (slag	19,995		All to Spain.
sand) from iron and steel industry	1),))5		All to Spall.
MINERAL FUELS AND RELATED MATERIALS			
Asphalt and bitumen, natural	19,638		Spain 19,521; Sao Tome and Principe 49; France 24.
Carbon black	22,938		
Coal, bituminous	22,938		All to Spain.
Coke and semicoke	83,840		Spain 31,958; Tunisia 27,797; Italy 13,242.
Petroleum:	85,840		Spain 51,958, Tuinsia 27,797, naiy 15,242.
	80		All to Come Manda
8	80		All to Cape Verde.
Refinery products:	(70 070		Spain 200 200, Dalaine Lunard 275 407, Mars 72 (51
Liquefied petroleum gas do.	678,878		Spain 300,800; Belgium-Luxembourg 275,407; Morocco 72,651
Mineral jelly and wax do.	18,369	(2/)	Italy 9,035; Spain 8,988; Angola 134.
Asphalt do.	309,236		Spain 308,278; Sao Tome and Principe 951.
Bituminous mixtures do.	14,326		Cape Verde 6,557; Spain 5,133; Cuba 1,376.
Petroleum coke do.	154		All to Spain.
Unspecified thousand 42-gallon barrels	16,237	5,365	United Kingdom 1,279; Spain 1,229; unspecified 4,669.

1/ Table prepared by Glenn J. Wallace, International Data Unit.

2/ Less than 1/2 unit.

Source: United Nations Statistical Office (microfiche).

### TABLE 5 PORTUGAL: IMPORTS OF MINERAL COMMODITIES IN 1998 1/

#### (Metric tons unless otherwise specified)

		United	Sources
Commodity	Total	States	Other (principal)
METALS	1000	States	oulei (principui)
Alkali and alkaline-earth metals:			
Alkali metals value, thou	sands \$2	7	Germany \$13; Netherlands \$8; United Kingdom \$5.
Alkaline-earth metals	3	)	Germany 24; Spain 14.
Aluminum:			
Ore and concentrate	2,00	3	Spain 1,654; France 265; Netherlands 89.
Oxides and hydroxides	8,68	7 63	Spain 5,570; France 2,192; Germany 383.
Metal including alloys:			
Scrap	94		Spain 628; Israel 280; Russia 23.
Unwrought	109,17		Norway 57,978; Spain 27,679; Netherlands 7,763.
Semimanufactures	40,49	0 102	Spain 11,327; Germany 10,852; France 4,897.
Antimony:		-	
Oxides Matal including allows all former	23:		China 75; Spain 64; United Kingdom 29.
Metal including alloys, all forms Arsenic, metal including alloys, all forms	2.		Spain 20; Netherlands 3; Belgium-Luxembourg 1. All from Spain.
Beryllium, metal including alloys, all forms value, thou			Italy \$1.
Bismuth, metal including alloys, all forms value, thou		<u> </u>	Belgium-Luxembourg 1; Spain 1.
Cadmium, metal including alloys, all forms value, thou			All from unspecified Europe.
Chromium:	Junus D		An nom unspectice Europe.
Ore and concentrate	1,94	7	South Africa 924; Spain 527; Netherlands 496.
Oxides and hydroxides	18		Spain 102; Germany 52; Netherlands 20.
Metal including alloys, all forms		5 1	Germany 4.
Cobalt:		·	
Ore and concentrate value, thou	sands \$6	7	France \$31; Italy \$27; Spain \$9.
Oxides and hydroxides		3	Belgium-Luxembourg 4; United Kingdom 2; Finland 1.
Metal including alloys, all forms	3:	2	Belgium-Luxembourg 12; France 12; Germany 6.
Copper:			
Oxides and hydroxides	24		Norway 160; Germany 80; Spain 2.
Sulfate	2,79		Spain 1,395; France 659; Italy 522.
Ash and residue	22	2	All from Netherlands.
Metal including alloys:			
Scrap	2,28		Spain 720; United Kingdom 411; South Africa 241.
Unwrought	2,53		Spain 1,564; Turkey 363; Germany 304.
Semimanufactures	76,92	9 117	Spain 35,423; Italy 9,298; France 8,882.
Gold: Waste and sweepings value, thou	sands \$1	1	All from United Kingdom.
Metal including alloys, unwrought and partly wrought	do. \$61,80		Germany \$31,425; Spain \$20,061; France \$4,936.
Iron and steel:	uo. 301,80.	\$302	Germany \$51,425, Span \$20,001, France \$4,950.
Ore and concentrate, excluding roast pyrite	590,09	7	Brazil 399,263; Canada 190,477; Netherlands 300.
Metal:	570,07		570217 577,205, Canada 170,477, Weiterhands 500.
Scrap	173,55	655	United Kingdom 120,497; Germany 17,270; Netherlands 7,995
Pig iron, cast iron, related materials	38,46		Russia 20,912; Spain 6,956; Germany 3,316.
Ferroalloys:	,		
Ferrochromium	1,03	7	Spain 306; Germany 289; Belgium-Luxembourg 251.
Ferromanganese	1,304	4	Spain 1,099; Germany 103; France 77.
Ferromolybdenum	11	1	Austria 69; Spain 28; Germany 10.
Ferroniobium		4	Germany 3; Spain 1.
Ferrosilicomanganese	6,304	4	All from Spain.
Ferrosilicon	4,36		Spain 2,511; Norway 643; Brazil 579.
Ferrotitanium and ferrosilicotitanium		)	United Kingdom 6; Germany 2; Spain 1.
Ferrotungsten and ferrosilicotungsten value, thou			All from Germany.
Ferrovanadium	do. \$1		Spain \$14; Germany \$1.
Silicon metal	3		Spain 30; Argentina 1.
Unspecified	3,34		Spain 2,972; France 321; Argentina 39.
Steel, primary forms	22,86	) 450	Germany 5,060; Brazil 1,714; Spain 1,418.
Semimanufactures:			
Flat-rolled products:			
Of iron or nonalloy steel:			Netherlands 151 002; C 107 50( C 107 050
Not clad, plated, coated	<u>971,79</u> 270,16		Netherlands 151,803; Germany 107,586; Spain 97,959. Spain 51,866; Germany 38,131; Italy 37,413.
Clad, plated, coated			

## TABLE 5--Continued PORTUGAL: IMPORTS OF MINERAL COMMODITIES IN 1998 1/

(Metric tons unless otherwise specified)

				Sources
			United	
Commodity		Total	States	Other (principal)
METALSContinued				
Iron and steelContinued: MetalContinued:				
Semimanufacturescontinued:				
Flat-rolled productscontinued:				
Of alloy steel		110,994		Germany 32,084; France 30,472; Spain 22,810.
Bars, rods, angles, shapes, sections		795,893	620	Spain 427,118; Italy 57,441; Belgium-Luxembourg 54,557.
Rails and accessories		33,839		France 16,826; Spain 10,856; Italy 2,963.
Wire		41,669	26	Spain 15,686; Belgium-Luxembourg 5,432; South Africa 5,304
Tubes, pipes, fittings		178,978	44	Spain 85,269; France 37,897; Germany 22,827.
Lead:		110,210		Span 00,20, 11, 10, 00, 10, 10, 10, 10, 10, 10, 1
Ore and concentrate		14		All from United Kingdom.
Oxides		830	19	Spain 811.
Metal including alloys:				
Scrap		8		All from Spain.
Unwrought		28,072		Morocco 12,084; Bulgaria 5,425; United Kingdom 1,974.
Semimanufactures		348		Spain 94; Greece 83; France 77.
Lithium oxides and hydroxides	value, thousands	\$2		Sweden \$1; United Kingdom \$1.
Magnesium, metal including alloys:				
Unwrought		383		Norway 363; France 16; Italy 2.
Semimanufactures	value, thousands	\$52	\$36	Germany \$6; Switzerland \$5; United Kingdom \$3.
Manganese:				
Ore and concentrate		524		Netherlands 280; Greece 194; Spain 50.
Oxides		358		South Africa 220; Spain 87; Germany 30.
Metal including alloys, all forms		29		Germany 21; Italy 4; Netherlands 4.
Mercury	value, thousands	\$30		Germany \$25; Spain \$4; France \$1.
Molybdenum:				
Oxides and hydroxides	do.	\$3	\$3	
Metal including alloys:				
Unwrought		9	1	Germany 8.
Semimanufactures	value, thousands	\$104		Germany \$60; Italy \$25; United Kingdom \$17.
Nickel:		10		
Matte and speiss Oxides and hydroxides	1 41 4	<u>42</u> \$24		Spain 39; France 3. Spain \$21; France \$2.
Metal including alloys:	value, thousands	\$24		Spain \$21, Flance \$2.
Unwrought		356		Netherlands 113; United Kingdom 62; Canada 53.
Semimanufactures		111	(2/)	Germany 49; Spain 27; France 9.
Platinum-group metals:		111	(2/)	Germany 49, Span 27, Plance 9.
Waste and sweepings	value, thousands	1		All from unspecified Europe.
Metal including alloys, unwrought and partly		-		Thi from dispectited Ediope.
Palladium	do.	\$32		Belgium-Luxembourg \$20; Spain \$11.
Platinum	do.	\$168		Spain \$109; Austria \$31; Germany \$16.
Rhodium	do.	\$24		Italy \$15; Spain \$9.
Rare-earth, metals including alloys, all forms	<b>u</b> o.	2		Austria 1; Germany 1.
Selenium, elemental		7		United Kingdom 3; Spain 2; Belgium-Luxembourg 1.
Silicon, high-purity		160		All from Spain.
Silver, metal including alloys, unwrought	value, thousands	\$12,210	\$13	Germany \$4,424; United Kingdom \$3,549; Spain \$3,246.
and partly wrought				
Tantalum, metal including alloys, all forms	do.	\$111	\$25	Germany \$54; United Kingdom \$32.
Tin, metal including alloys:				-
Unwrought		1,351	2	Spain 516; Germany 336; United Kingdom 135.
Semimanufactures		170	(2/)	United Kingdom 112; Netherlands 34; Germany 18.
Fitanium:				
Ore and concentrate		319		South Africa 306; Spain 13.
Oxides		3,475	60	Australia 1,142; Saudi Arabia 704; Belgium-Luxembourg 517
Metal including alloys, all forms		86	58	Italy 15; Norway 8; Japan 2.
Tungsten:				
Ore and concentrate	value, thousands	\$23		Italy \$21; Germany \$2.
Metal including alloys:				
Unwrought	do.	\$104	\$29	Brazil \$67; France \$6; Germany \$1.
Semimanufactures	do.	\$666	\$3	Spain \$327; Belgium-Luxembourg \$155; France \$47.
See footnotes at end of table.				

### TABLE 5--Continued PORTUGAL: IMPORTS OF MINERAL COMMODITIES IN 1998 1/

#### (Metric tons unless otherwise specified)

			United	Sources
Commodity		Total	States	Other (principal)
METALSContinued		Total	States	Other (principal)
Uranium and thorium, metal including all forms:				
	ue, thousands	\$26	\$26	
Thorium	do.	\$39		All from Belgium-Luxembourg.
Vanadium, oxides and hydroxides	do.	\$4		All from Germany.
Zinc:		*		
Ore and concentrate		400		All from Colombia.
Oxides		2,050		Spain 1,016; Colombia 360; United Kingdom 317.
Blue powder		576		Denmark 367; Belgium-Luxembourg 129; Spain 56.
Ash and residue		5,903	407	Spain 4,213; Norway 485; United Kingdom 440.
Metal including alloys:		,		
Scrap		54		All from Spain.
Unwrought		21,308		Spain 10,952; Belgium-Luxembourg 5,758; Norway 2,070.
Semimanufactures		6,399	2	Spain 2,785; France 897; South Africa 705.
Zirconium, ore and concentrate		4,375	18	Germany 1,896; Spain 1,145; Netherlands 936.
Other:				
Ores and concentrates		407		Netherlands 283; Spain 124.
Oxides and hydroxides		1,541	2	Spain 1,453; Germany 53; Belgium-Luxembourg 24.
Ashes and residues		966		All from Spain.
	ue, thousands	\$5		All from Switzerland.
Precious metals, n.e.s., waste and scrap	do.	\$77		Spain \$65; Italy \$12.
INDUSTRIAL MINERALS				
Abrasives, n.e.s.:				
Natural, corundum, emery, pumice, etc.		2,529	19	Turkey 1,913; France 182; Spain 180.
Artificial:				
Corundum		1,610	4	France 748; Germany 313; Austria 262.
Silicon carbide		1,202	1	France 463; Denmark 255; Germany 211.
	lue, thousands	\$3,788		Spain \$965; Belgium-Luxembourg \$694; Ireland \$572.
semiprecious stones including diamonds				
Grinding and polishing wheels and stones		2,493	12	Italy 1,188; Spain 551; Germany 259.
Asbestos, crude		6,302		Canada 5,162; Zimbabwe 377; South Africa 342.
Barite and witherite		3,656		Morocco 2,500; Netherlands 501; Spain 333.
Boron:				
Crude natural borates		14,400		Trukey 12,850; Spain 701; Argentina 565.
Oxides and acids		1,077		United Kingdom 708; Italy 168; Spain 118.
	thousand tons	1,331	(2/)	Ukraine 290; Italy 228; United Kingdom 173.
Chalk		2,980		France 1,870; Belgium-Luxembourg 479; United Kingdom 428
Clays, crude:				
Bentonite		18,847	106	United Kingdom 5,496; Spain 5,435; France 5,121.
Chamotte earth and dinas earth		1,841		France 1,028; Spain 673; Netherlands 73.
Fire clay		260		Germany 147; Spain 110; Italy 3.
Fuller's earth		57	40	Spain 17.
Kaolin		121,639	700	United Kingdom 87,459; Spain 22,393; France 9,467.
Other		5,565	90	Spain 4,429; United Kingdom 716; Germany 165.
Cryolite and chiolite		45		Germany 44; Spain 1.
Diamond, natural:				
Gem, not set or strung val	ue, thousands	\$52,085		Belgium-Luxembourg \$40,677; United Kingdom \$5,514;
				Angola \$3,160.
Industrial stones	do.	\$2,211		Germany \$1,775; Spain \$214; Netherlands \$185.
Dust and powder	do.	\$3,706		Spain \$965; Belgium-Luxembourg \$620; Ireland \$572.
Diatomite and other infusorial earth		1,667	729	Spain 479; France 410; Italy 40.
Feldspar		31,026		Spain 17,568; France 8,963; India 2,306.
Fertilizer materials:		<b>-</b> 101		
Crude, n.e.s.		7,131	1	Spain 4,600; France 1,280; Israel 1,076.
Manufactured:				
		20,028		Estonia 9,987; Algeria 9,971; Spain 60.
Ammonia		,		
Ammonia Nitrogenous		174,634		Netherlands 47,572; Germany 36,001; Spain 33,346.
Ammonia Nitrogenous Phosphatic		174,634 947		Spain 946; France 1.
Ammonia Nitrogenous		174,634		

### TABLE 5--Continued PORTUGAL: IMPORTS OF MINERAL COMMODITIES IN 1998 1/

#### (Metric tons unless otherwise specified)

			Sources
		United	
Commodity	Total	States	Other (principal)
INDUSTRIAL MINERALSContinued	1 201		
Fluorspar	1,381		Spain 894; France 366; Belgium-Luxembourg 69.
Graphite, natural	378		Spain 302; Germany 41; China 21.
Gypsum and plaster	276,003	36	Spain 240,658; Morocco 27,310; Germany 5,481.
Iodine	25		Belgium-Luxembourg 11; Netherlandsa 6; Japan 5.
Kyanite and related materials: Mullite	471		Netherlands 460; United Kingdomm 11.
Unspecified	245		Spain 164; South Africa 80.
Lime	1,338		Spain 1,321; Germany 14; Denmark 3.
Magnesium compounds:	1,558		Span 1,521, Germany 14, Denmark 5.
Magnesite, crude	1,762		Spain 1,346; Italy 231; Greece 108.
Oxides and hydroxides	2,597		Spain 1,168; Netherlands 654; Italy 386.
Other	63		All from India.
Mica:	03		All from india.
Crude including splittings and waste	110		France 51; United Kingdom 31; Norway 18.
Worked including agglomerated splittings	110	(2/)	Kenya 8; Switzerland 5; Belgium-Luxembourg 2.
Nitrates, crude	754	(2/)	
Phosphates, crude	183,954		Syria 154,063; Tunisia 20,100; Algeria 5,500.
Phosphorus, elemental	7		All from Germany.
Pigments, mineral:	/		All fiold Germany.
Natural, crude	14		France 7; Spain 5; United Kingdom 2.
Iron oxides and hydroxides, processed	2,344		Germany 1,075; Spain 763; Italy 118.
Precious and semiprecious stones other than diamond:	2,344		Germany 1,075, Spani 765, nary 118.
Natural value, thousands	\$1,255	\$17	Germany \$322; Switzerland \$153; Brazil \$151.
Synthetic do.	\$1,345	φ17 	Switzerland \$357; Spain \$330; United Kingdom \$249.
Pyrite, unroasted	132		United Kingdom 80; Spain 550, Olined Kingdom 5249.
Quartz crystal, piezoelectric value, thousands	\$34		Spain \$27; Italy \$6; Thailand \$1.
Salt and brine	105,823	2	Spain 42,769; France 38,916; Netherlands 8,152.
Sodium compounds, n.e.s.:	105,625	2	Span 42,707, 11ance 58,710, 1veneriands 8,152.
Soda ash, manufactured	35,773		Spain 35,275; France 471; Germany 26.
Sulfate, manufactured	45,398		Spain 45,189; France 203; Germany 5.
Stone, sand and gravel:	+3,370		Span 43,167, 11ance 205, Germany 5.
Dimension stone:			
Crude and partly worked	76,258	91	Spain 39,356; South Africa 14,997; Brazil 7,763.
Worked	33,124	1	Spain 27,588; Sweden 1,529; Italy 1,487.
Dolomite, chiefly refractory-grade	9,770	2	Spain 7,454; Germany 1,591; United Kingdom 456.
Gravel and crushed rock	216,561	3	Spain 210,308; France 4,343; Italy 1,781.
Limestone other than dimension	1,659		France 1,652; Netherlands 7.
Quartz and quartzite	557		Italy 473; Germany 30; Spain 29.
Sand other than metal-bearing	121,038	55	Spain 117,568; Belgium-Luxembourg 1,960; France 858.
Sulfur:	121,050		Spain 117,500, Belgian Baxembourg 1,500, France 050.
Elemental:			
Crude including native and byproduct	2,468		Spain 2,088; France 325; Belgium-Luxembourg 50.
Colloidal, precipitated, sublimed	4,576		Tunisia 2,592; Spain 1,952; France 25.
Dioxide	4,562		Sweden 3,835; Spain 7,6; Germany 11.
Sulfuric acid	172,649	1	Spain 118,939; United Kingdom 22,103; Germany 11,687.
Talc, steatite, soapstone, pyrophyllite	14,432	254	Spain 6,994; France 3,542; Belgium-Luxembourg 1,494.
Vermiculite, perlite, chlorite	991		France 707; South Africa 172; Spain 110.
Other:			,, ,
Crude	38,841	560	Spain 33,120; United Kingdom 1,551; Finland 914.
Slag and dross, not metal-bearing:	,~		, , , , <u>, </u>
Granulated slag (slag sand) from iron and steel industry	10,641		All from Spain.
Waste, scale, dross, slag of iron or steel industry	2,006		Do.
Slag and ash, n.e.s., including seaweed ash (kelp)	82,731		Spain 82,451; France 258; Italy 21.
See footnotes at end of table.			

### TABLE 5--Continued PORTUGAL: IMPORTS OF MINERAL COMMODITIES IN 1998 1/

#### (Metric tons unless otherwise specified)

			Sources
		United	
lity	Total	States	Other (principal)
LATED MATERIALS			
	9,905		France 7,810; Spain 1,982; Germany 54.
	5,520		Spain 2,297; Germany 2,034; France 832.
	336,726		South Africa 336,711; Netherlands 15.
thousand tons	4,645	759	Colombia 1,756; South Africa 1,325; Venezuela 272.
	1		All from Germany.
thousand tons	4,990	759	Colombia 1,756; South Africa 1,667; Venezuela 272.
	13,022		Spain 8,655; France 2,402; Germany 1,964.
value, thousands	\$1	\$1	
	613,427		All from Spain.
	11,843		Germany 6,006; Ireland 2,713; Netherlands 1,420.
thousand 42-gallon barrels	98,441	578	Saudi Arabia 19,260; Iran 16,924; Nigeria 16,500.
do.	14,359	69	Spain 7,591; United Kingdom 5,056; Libya 378.
42-gallon barrels	101,436	165	Spain 56,955; China 19,211; Germany 17,889.
thousand 42-gallon barrels	1,875		Spain 1,533; France 316; unspecified 25.
do.	1,931		Spain 1,534; France 316; unspecified 74.
42-gallon barrels	57,982	(2/)	Spain 46,008; France 7,714; United Kingdom 3,030.
thousand 42-gallon barrels	2,211	1,036	Venezuela 544; Aruba 435; Spain 184.
do.	21,043	163	Spain 5,068; United Kingdom 3,477; Netherlands 1,943.
	LATED MATERIALS thousand tons thousand tons value, thousands thousand 42-gallon barrels do. 42-gallon barrels thousand 42-gallon barrels thousand 42-gallon barrels thousand 42-gallon barrels	LATED MATERIALS         9,905           5,520         336,726           336,726         1           thousand tons         4,645           1         1           thousand tons         4,990           13,022         13,022           value, thousands         \$1           613,427         11,843           thousand 42-gallon barrels         98,441           do.         14,359           42-gallon barrels         101,436           thousand 42-gallon barrels         1,875           do.         1,931           42-gallon barrels         57,982           thousand 42-gallon barrels         2,211           do.         21,043	ity         Total         States           LATED MATERIALS         9,905            5,520            336,726            336,726            1            1            13,022            13,022            13,022            13,022            11,843            11,843            11,843            11,843            11,843            11,843            11,843            11,843            11,843            10,436         165           10,436         165           10,436         165           10,431            42-gallon barrels         1,875            0.         1,931           42-gallon barrels         57,982         (2/)           100sand 42-gallon barrels         57,982         (2/)           100sand 42-gallon barrels         2,211         1,036

1/ Table prepared by Glenn J. Wallace, International Data Unit.

2/ Less than 1/2 unit.

Source: United Nations Statistical Office (microfiche).