

ARIZONA, UNITED STATES AND FREEWORLD MINE PRODUCTION OF RECOVERABLE
COPPER, LEAD AND ZINC
YEARS 1949, 1950, 1951 and 1952

In December 1952, the Arizona Department of Mineral Resources published Copper, Lead and Zinc statistics comparing production of these metals for the first six months of each of the last four years.

The present report compares the statistics for the complete years of 1949, 1950, 1951 and 1952. Reports of the American Bureau of Metal Statistics, the U. S. Bureau of Mines and the Bureau of the Census have been used in compiling these figures, and to simplify the comparison, only primary mine production of the three metals has been considered. The introduction of scrap and secondary metal production would confuse the picture because of the conflicting data from the chief sources of information.

The tables show the relative importance of the chief producing countries, how much copper, lead and zinc are coming into this country, and how much this country exports in the form of ingots, bars, pigs and slabs.

COPPER

During the past four years, the United States has been producing from its mines about $35\frac{1}{2}$ percent of the Free World production. The countries of Chile, Rhodesia, Canada, Belgian Congo and Japan follow the United States in that order of production. The order of importation into the United States has been Chile, Canada, Mexico, N. Rhodesia, Cuba, etc., and the United States has exported copper to the United Kingdom, France, W. Germany, Italy, Canada, Switzerland etc., in that order.

In the four years covered, it has been necessary for the United States to depend on foreign countries to supply a part of its copper needs, as this country has produced only about $67\frac{1}{2}$ % of its consumptive requirements, with a high of 73% in 1951 and a low of 63% in 1950.

From a study of the all-around conditions of production, imports, exports and consumption, it seems fair to estimate that a satisfactory condition would be for the United States to produce about 70 percent of the domestic copper consumption.

LEAD

According to the U. S. Bureau of Mines, the United States has averaged about 23.50% of the Free World production of lead in the last four years, with a high of 25.17% in 1950 and a low of 21.25% in 1952. The countries of Mexico, Australia, Canada, Peru, Yugoslavia, etc., follow the United States in that order of production. The order of importation into the United States has been Mexico, Canada, Australia, Peru, Yugoslavia, Union of South Africa, Bolivia, etc. The United States exported very little lead in the form of pigs and bars.

In the four years covered, it has been necessary for the United States to depend on foreign countries to supply part of its lead needs as this country has produced only 48% of its consumptive requirements, with a high of 60% in 1951 and a low of 40% in 1952.

From a study of the all-around conditions of production, imports, exports and consumption, it would seem fair to estimate that a satisfactory condition would be for the United States to produce at least 50 percent of the domestic lead consumption.

According to the U. S. Bureau of Mines, the United States has averaged about 28.19% of the Free World production of zinc, in the last four years, with a high of 30.32% in 1949 and a low of 25.86% in 1952. The countries of Canada, Mexico, Australia, Italy, Peru, Belgian Congo, etc., follow the United States in that order of production. The order of importation into the United States has been Canada, Mexico, Peru, Spain, Bolivia, Guatemala, Belgium, etc. The United States has exported zinc to the United Kingdom, France, Brazil, India, etc., in that order.

In the four years covered, it has been necessary for the United States to depend on foreign countries to supply part of its zinc needs, as this country has produced only 62.8% of its consumptive requirements, with a high of 71.8% in 1949 and a low of 55½% in 1950.

From a study of the all-around conditions of production, imports, exports and consumption, it would seem fair to estimate that a satisfactory condition would be for the United States to produce at least 65 percent of the domestic zinc consumption.

The enormous increase in net importation of lead in 1952 over 1951 by 363,000 tons, and the increase in net importation of zinc of 154,000 tons tells the story of the collapse in lead and zinc prices in 1952.

Report by Frank J. Tuck, Statistical Engineer

Arizona Department of Mineral Resources

October, 1953

WORLD MINE PRODUCTION OF RECOVERABLE COPPER, LEAD AND ZINC (In Tons of 2000 pounds)

Source: United States Bureau of Mines

COPPER:	Arizona	United States	Chile	Rhodesia	Canada	Belgian Congo	Japan	Other Free Countries	TOTAL
Year 1949	359,010	752,750	409,064	285,593	263,457	155,866	36,091	356,929	2,259,750
Year 1950	403,301	909,343	397,402	327,925	261,914	193,920	43,345	376,126	2,509,975
Year 1951	415,870	928,330	418,578	352,155	270,483	211,600	46,626	402,356	2,630,128
Year 1952*	393,350	924,469	446,000	363,000	258,000	227,000	59,000	222,531	2,500,000

LEAD:	Arizona	United States	Mexico	Australia	Canada	Yugoslavia	Peru	French Morocco	West Germany	Italy	S. W. Africa	Other Free Countries	TOTAL
Year 1949	33,568	409,908	243,351	239,112	159,775	79,587	72,044	40,477	45,133	38,140	42,219	261,682	1,631,428
Year 1950	26,383	430,827	262,437	245,176	169,888	88,185	63,224	52,282	49,417	41,888	37,489	271,085	1,711,898
Year 1951	17,394	388,164	248,537	251,777	157,844	86,807	90,776	75,105	55,522	42,702	43,244	268,775	1,709,253
Year 1952*	16,524	390,161	271,200	255,540	164,879	87,048	108,103	92,163	56,876	44,203	58,249	307,818	1,836,240

ZINC:	Arizona	United States	Canada	Mexico	Australia	Italy	Belgian Congo	Peru	West Germany	Spain	Japan	Other Free Countries	TOTAL
Year 1949	70,658	593,203	288,262	196,655	203,839	81,351	61,090	79,408	63,732	55,116	48,848	285,108	1,956,612
Year 1950	60,480	623,375	312,585	246,401	216,451	94,081	84,120	81,364	76,388	70,548	57,356	326,862	2,189,531
Year 1951	52,999	671,526	341,112	198,488	218,086	111,040	97,780	116,735	80,397	81,571	71,007	352,477	2,340,219
Year 1952*	47,136	665,998	366,775	250,639	219,954	124,587	109,070	134,674	88,935	91,492	95,293	427,595	2,575,012

* Some figures estimated

U. S. % OF FREE WORLD PRODUCTION

	COPPER	LEAD	ZINC
1949	33.31	25.13	30.32
1950	36.23	25.17	28.47
1951	35.30	22.71	28.70
1952	36.98	21.25	25.86

ARIZONA % OF U. S. PRODUCTION

	COPPER	LEAD	ZINC
1949	47.69	8.19	11.91
1950	44.35	6.12	9.70
1951	44.80	4.48	7.89
1952	42.55	4.24	7.08

Arizona Department of Mineral Resources
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U. S. COPPER EXPORTS AND IMPORTS (In Tons of 2000 lbs.)

(BUREAU OF THE CENSUS) YEARS 1949, '50, '51-'52

<u>EXPORTS</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>	<u>1952</u>
Ore, Concs., etc. (content)	-	-	-	648
Refined Ingots, Bars, etc.	137,267	144,560	132,991	174,135
United Kingdom	25,676	74,246	70,160	48,116
France	23,947	18,403	18,627	35,573
W. Germany	10,599	3,416	10,273	20,447
Italy	19,914	16,641	7,949	17,043
Canada	-	-	-	12,883
Switzerland	9,375	5,152	5,415	9,563
India	20,514	8,988	218	6,243
Netherlands	11,610	6,148	8,190	5,994
Brazil	3,199	1,356	3,306	5,496
Other Countries	12,933	10,210	8,853	13,425
Total Exports, Crude-Refined	137,267	144,560	132,991	174,783
<u>IMPORTS</u>				
Ore, Matte, Regulus (content)	117,716	110,269	102,675	105,196
Blister, Cathodes & Shapes	428,182	540,502	379,880	509,147
TOTAL	545,898	650,771	482,555	614,343
Ore, Matte, & Regulus:				
Canada	28,027	25,483	25,405	26,379
Cuba	15,600	22,430	21,895	18,922
Philippines	7,908	10,006	12,608	14,763
Chile	23,004	13,777	12,097	12,332
Peru	7,291	8,223	7,797	9,652
Mexico	12,179	9,275	8,365	8,272
Cyprus	6,888	6,531	5,557	5,441
U. of S. Africa	6,042	6,521	3,619	5,248
Bolivia	4,670	5,220	4,449	3,097
Other Countries	6,107	6,803	883	1,090
TOTAL	117,716	110,269	102,675	105,196
Blister Copper (content):				
Chile	51,768	61,005	47,178	55,543
Mexico	51,053	48,659	38,653	36,830
No. Rhodesia	27,122	84,255	39,061	28,224
Canada	-	-	134	26,463
Yugoslavia	14,727	10,985	6,223	8,022
Other Countries	7,704	15,682	10,486	7,107
TOTAL	152,374	220,586	141,735	162,189
Ref. Cathodes-Shapes:				
Chile	210,443	216,578	207,895	294,425
Canada	47,928	52,100	28,352	28,324
W. Germany	-	-	-	8,931
Yugoslavia	-	-	-	6,811
Mexico	1,467	4,559	702	5,840
Peru	14,755	14,428	377	1,663
Japan	1,113	27,426	631	223
Other Countries	102	9,384	188	741
TOTAL	275,808	319,916	238,145	346,958

U. S. LEAD EXPORTS AND IMPORTS (In Tons of 2000 lbs.)

BUREAU OF THE CENSUS - YEARS 1949, '50, '51-'52

<u>EXPORTS:</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>	<u>1952</u>
Ore, Concls., Bullion Refined	-	-	-	3,435
Pigs and Bars	967	2,735	1,282	1,763
Sheets and Pipes	762	353	1,088	1,289
Solder	406	525	492	-
Typemetal	721	779	540	747
Antimonial Lead	343	123	501	244
Scrap	-	1,576	591	274
TOTAL	3,199	6,091	4,494	4,317

IMPORTS: Ore, Matte, etc. (Content)

Peru	14,971	16,011	16,953	28,202
U. of So. Africa	22,152	18,509	10,663	22,544
Bolivia	21,132	13,381	15,990	18,472
Canada	1,917	9,429	7,446	11,913
Australia	8,983	9,730	7,425	8,841
Guatemala	-	-	-	4,722
Chile	6,362	2,656	1,945	3,197
Newfoundland	8,409	-	-	-
Mexico	8,375	2,846	2,523	2,478
Fr. Morocco	9,184	-	-	-
Other Countries	5,853	2,726	4,738	4,006
TOTAL	107,338	75,288	67,683	104,375

Base Bullion Pigs - Bars:

Mexico	126,400	220,765	36,862	198,872
Canada	56,419	107,672	56,958	104,530
Australia	19,438	24,317	15,831	82,801
Yugoslavia	23,437	43,854	36,311	53,995
Peru	34,625	31,989	31,529	42,169
W. Germany	8,333	8,642	737	6,052
Spain	-	-	-	5,508
Fr. Morocco	-	-	-	5,346
U. Kingdom	-	-	-	4,216
Japan	2,109	6,509	-	-
Italy	3,419	-	-	-
Other Countries	3,435	1,550	2,956	7,517
TOTAL	277,615	445,298	181,184	511,006

U. S. ZINC EXPORTS AND IMPORTS (In Tons of 2000 lbs.)

BUREAU OF THE CENSUS - YEARS 1949, '50, '51-'52

<u>EXPORTS:</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>	<u>1952</u>
Ore, Concls.	2,924	1,139	3,093	3,371
Slabs, Blocks, etc.:				
U. Kingdom	22,811	4,941	20,024	40,423
France	4,840	-	934	6,689
Brazil	2,285	830	3,966	4,090
India	12,607	4,588	4,728	2,035
Canada	-	-	1,702	171
Netherlands	4,028	-	-	-
Yugoslavia	-	-	1,244	-
Other Countries	12,135	2,558	3,908	4,306
TOTAL	58,706	12,917	36,506	57,714

IMPORTS:

Zinc Ore:				
Mexico	143,801	150,412	143,427	199,690
Canada	61,314	77,629	97,041	149,495
Peru	14,901	17,313	29,126	44,401
Bolivia	3,526	2,195	7,798	14,451
Spain	4,879	17,738	4,392	16,646
Guatemala	-	473	6,539	10,781
U. of S. Africa	6,566	3,795	2,655	4,918
Australia	4,956	2,378	2,825	2,366
Other Countries	936	648	8,858	7,177
TOTAL	240,879	272,581	302,661	449,925

Zinc, Blocks, Pigs, etc.:				
Canada	109,710	108,965	85,005	69,772
Mexico	14,189	26,292	759	18,685
Belgium	1,933	3,616	612	6,853
W. Germany	-	1,637	-	7,066
Italy	-	2,678	-	4,063
Netherlands	-	2,006	254	3,977
Yugoslavia	-	429	-	2,788
Peru	-	1,205	-	1,600
Other Countries	1,092	9,116	1,352	344
TOTAL	126,924	155,944	87,982	115,148

SUMMARY OF U. S. PRODUCTION, IMPORTS, EXPORTS,
AND CONSUMPTION OF RECOVERABLE COPPER, LEAD AND ZINC
YEARS 1949, '50, '51 & '52 (Tons of 2000 lbs.)

<u>COPPER:</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>	<u>1952</u>
Stocks in U.S. at beginning of year *	67,000	61,000	26,000	35,000
U.S. Produced Copper *	752,750	909,343	928,330	924,469
Imported into U. S. **	545,898	650,771	482,555	614,343
	1,298,648	1,621,114	1,436,885	1,573,812
Exported from U.S. **	137,267	144,560	132,991	174,783
Stocks in U. S. at end of year *	61,000	26,000	35,000	26,000
Apparent domestic consumption	1,100,381	1,450,554	1,268,894	1,373,029
U.S. Production % of U.S. consumption	68.41	62.69	73.16	67.33

LEAD:

Stocks in U.S. at beginning of year	146,754	201,526	137,669	124,080
U.S. produced lead *	409,908	430,827	388,164	390,161
Imported into U. S. **	384,953	520,586	248,867	615,381
	941,615	1,152,939	774,700	1,129,622
Exported from U.S. **	1,729	3,088	2,370	6,487
Stocks in U.S. at end of year ***	201,526	137,669	124,080	149,778
Apparent domestic consumption	738,360	1,012,182	648,250	973,357
U.S. production % of U.S. consumption	55.52	42.56	59.88	40.08

ZINC:

Stocks in U.S. at beginning of year	20,848	94,221	8,884	21,901
U.S. produced zinc *	593,203	623,375	671,526	665,998
Imported into U. S. **	367,803	428,525	390,643	565,073
	981,854	1,146,121	1,071,053	1,252,972
Exported from U. S. **	61,630	14,056	39,599	61,085
Stocks in U.S. at end of year ***	94,221	8,884	21,901	87,160
Apparent domestic consumption	826,003	1,123,181	1,009,553	1,104,727
U.S. production % of U.S. consumption	71.82	55.50	66.52	60.29

* U.S.B.M. ** U.S. Bureau of Census *** American Bureau of Metal Statistics.

Arizona Department of Mineral Resources

October, 1953