



DEFENSE LOGISTICS AGENCY
DEFENSE NATIONAL STOCKPILE CENTER
8725 JOHN J. KINGMAN ROAD, SUITE 4616
FT. BELVOIR, VIRGINIA 22060-6223

July 12, 2000

IN REPLY
REFER TO

**AMENDMENT NO. 004
TO
INVITATION FOR BIDS
UNDER
DLA-COBALT CATHODES-001**

Invitation for Bids DLA-COBALT CATHODES-001 is hereby amended to provide for a sale in July, 2000.

1. Amendment Numbers 001, 002 and 003 are hereby deleted in their entirety.
2. Subsection **A.1 Introduction (JUL 97)**, paragraph **a**, is hereby deleted in its entirety and replaced by the following:

a. The Defense Logistics Agency (DLA), Defense National Stockpile Center (DNSC), is soliciting bids for the sale of approximately 351,463.94 pounds of contained cobalt metal (LBS(CO)) cathodes. The bid opening will be held on July 26, 2000 at 1:00 PM, local time, Fort Belvoir, VA. Bids must be received at the address in Section **B.2.a.** by 1:00 PM, local time, Fort Belvoir, VA. In the event that July 26, 2000 is a holiday, or DNSC is otherwise closed at that time, bids for that day will be received at 1:00 PM on the next DNSC business day.

3. Subsection **A.2 Description (JAN 95)** is deleted in its entirety and replaced by the following:

A.2 Description (JUL 00)

a. The cobalt listed in Section I.2, item numbers 4050-4067, is in the form of broken electrolytic cathodes, Grade R5-B (99.65% Co, min.), packed in drums (551 pounds of cathode/drum). The material was produced by Zambia Consolidated Copper Mines Limited, Kalulushi Division, Chambishi Mine (c. 1984-1985). The material comes with Certificates of Analysis from the producer and a Government contract laboratory. Copies of these Certificates are provided in Section J.1, along with DNSC Purchase Specification P-13-R5 covering refined cobalt metal.

b. Four of the five production lots being offered have been divided into sublots. Each subplot is listed under a separate item number with a parenthetical letter suffix added to the production lot number. However, the analytical data provided refer to the lot as a whole; sublots were not sampled and analyzed individually. The storage location is Binghamton, NY.

c. Government records indicate that the material conforms to the data provided; however, no warranty or guarantee is made that the material so conforms or that it will be suitable for any particular purpose.

4. All previous references to "Section **I.2 Item Bid Page - DLA-COBALT CATHODES-001 (MAY 2000)**," "Section **J.1 Certificates of Analysis and Purchase Specifications (MAY 2000)**," and "Section **J.2 Storage Locations (FEB 99)**" are hereby deleted and replaced by the references "Section **I.2 Item Bid Page - DLA-COBALT CATHODES-001 (JUL 00)**," "Section **J.1 Certificates of Analysis and Purchase Specifications (JUL 00)**," and "Section **J.2 Storage Locations (JUL 00)**" respectively.

5. All previous Sections **I.2 Item Bid Page - DLA-COBALT CATHODES-001 (MAY 2000)**, Section **J.1 Certificates of Analysis and Purchase Specification (MAY 2000)**, and Section **J.2 Storage Locations (FEB 99)** are deleted and replaced by the attached Section **I.2 Item Bid Page - DLA-COBALT CATHODES-001 (JUL 00)**, Section **J.1 Certificates of Analysis and Purchase Specifications (JUL 00)**, and Section **J.2 Storage Locations (Jul 00)**.

6. Bidders shall acknowledge receipt of this Amendment by signing in the space provided below and returning this form and the attached Sections **I.1 Sale of Government Property Bid and Award (JAN 95)**, **I.3 Certificate of Independent Price Determination (JUL 97)**, and **I.4 Certification Regarding Debarment, Suspension, Proposed Debarment, Environmental Compliance and other Responsibility Matters (JUL 97)** along with your bid on Section **I.2 Item Bid Page – DLA-COBALT CATHODES-001 (JUL 00)** to:

ATTN: DNSC-L/Bid Custodian
Defense National Stockpile Center
8725 John J. Kingman Road,
Suite 4616 (Mail) or Suite 4528 (Hand delivered)
Fort Belvoir, VA 22060-6223
Facsimile No. 703-767-5541

Failure to acknowledge receipt of the Amendment may result in the bidder being ineligible for award. Except as provided herein, all other terms and conditions of DLA-COBALT CATHODES-001 remain unchanged and in full force and effect.

NAME OF FIRM: _____

ADDRESS: _____

TELEPHONE: _____ **FACSIMILE:** _____

COMPLETED BY: _____

SIGNATURE: _____ **DATE:** _____

TITLE: _____

WEB PAGE: _____ **E-MAIL ADDRESS:** _____

I.1 Sale of Government Property Bid and Award (JAN 95)

**SALE OF GOVERNMENT PROPERTY
 BID AND AWARD**

BID
 (This Section to be completed by the Bidder)

DATE OF BID (Day, month, and year)
 _____ 20_____

In compliance with this Invitation and subject to the Terms and Conditions cited within, the undersigned offers and agrees, if this Bid is accepted within 3 working days after date of Bid opening, to purchase and pay for any and all of the items or lots of property listed in Section I.2, and to remove the property within the time specified in the Invitation after contract award by the Government. The total amount bid is \$_____.

EXECUTION BY BIDDER

EXECUTION BY GOVERNMENT

DATE (Day, Month, Year)

DATE OF ACCEPTANCE (Day, Month, Year)

NAME OF COMPANY

CONTRACT NUMBER

ADDRESS (Street, City, State & Zip Code) (Type or Print)

TOTAL AMOUNT

\$ _____

Telephone Number: _____

Facsimile Number: _____

UNITED STATES OF AMERICA

BY: _____

SIGNATURE AND TITLE OF PERSON AUTHORIZED TO SIGN THIS BID (Type or print name and title under signature)

NAME AND TITLE OF CONTRACTING OFFICER

 Contracting Officer DNSC-S

COBALT ITEMS AWARDED (to be completed by the Government)

CONTRACT PERIOD EXPIRES ON:

ITEM	STORAGE LOCATION	TYPE	COUNTRY OF ORIGIN	LOT NO.	NO. OF UNITS	BULK WEIGHT (lbs)	STKPILE WEIGHT (lbs Co)	UNIT PRICE	TOTAL ITEM PRICE
4050	BINGHAMTON, NY	BROKEN CATHODE	ZAMBIA	GS-0083-DxxC-0014-13	128	70,512.00	70,321.62		
4051	BINGHAMTON, NY	BROKEN CATHODE	ZAMBIA	GS-0083-DxxC-0014-14(A)	66	36,358.00	36,248.93		
4052	BINGHAMTON, NY	BROKEN CATHODE	ZAMBIA	GS-0083-DxxC-0014-14(B)	62	34,154.00	34,051.54		
4053	BINGHAMTON, NY	BROKEN CATHODE	ZAMBIA	GS-0083-DxxC-0014-17(A)	66	36,358.00	36,234.38		
4054	BINGHAMTON, NY	BROKEN CATHODE	ZAMBIA	GS-0083-DxxC-0014-17(B)	62	34,154.00	34,037.88		
4055	BINGHAMTON, NY	BROKEN CATHODE	ZAMBIA	GS-0083-DxxC-0014-18(A)	36	19,834.50	19,769.05		
4056	BINGHAMTON, NY	BROKEN CATHODE	ZAMBIA	GS-0083-DxxC-0014-18(B)	32	17,630.50	17,572.32		
4057	BINGHAMTON, NY	BROKEN CATHODE	ZAMBIA	GS-0083-DxxC-0014-18(C)	30	16,528.50	16,473.96		
4058	BINGHAMTON, NY	BROKEN CATHODE	ZAMBIA	GS-0083-DxxC-0014-18(D)	30	16,528.50	16,473.96		
4059	BINGHAMTON, NY	BROKEN CATHODE	ZAMBIA	GS-0083-DxxC-0014-19(A)	24	13,221.00	13,177.37		
4060	BINGHAMTON, NY	BROKEN CATHODE	ZAMBIA	GS-0083-DxxC-0014-19(B)	24	13,221.00	13,177.37		
4061	BINGHAMTON, NY	BROKEN CATHODE	ZAMBIA	GS-0083-DxxC-0014-19(C)	18	9,915.00	9,882.28		
4062	BINGHAMTON, NY	BROKEN CATHODE	ZAMBIA	GS-0083-DxxC-0014-19(D)	18	9,915.00	9,882.28		
4063	BINGHAMTON, NY	BROKEN CATHODE	ZAMBIA	GS-0083-DxxC-0014-19(E)	18	9,915.00	9,882.28		
4064	BINGHAMTON, NY	BROKEN CATHODE	ZAMBIA	GS-0083-DxxC-0014-19(F)	8	4,408.00	4,393.45		
4065	BINGHAMTON, NY	BROKEN CATHODE	ZAMBIA	GS-0083-DxxC-0014-19(G)	6	3,306.00	3,295.09		
4066	BINGHAMTON, NY	BROKEN CATHODE	ZAMBIA	GS-0083-DxxC-0014-19(H)	6	3,306.00	3,295.09		
4067	BINGHAMTON, NY	BROKEN CATHODE	ZAMBIA	GS-0083-DxxC-0014-19(I)	6	3,306.00	3,295.09		
							351,463.94		

Company Name: _____

TOTAL BID PRICE: \$ _____

Name & Title: _____

Authorized Company Official

Signature: _____

_____ Date

I.3 Certificate of Independent Price Determination (JUL 97)

a. The Bidder certifies that -

(1) The prices in this bid have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other Bidder or competitor relating to (i) those prices, (ii) the intention to submit a bid, or (iii) the methods or factors used to calculate the prices offered.

(2) The prices in this bid have not been and will not be knowingly disclosed by the Bidder, directly or indirectly, to any other Bidder or competitor before bid opening (in the case of a sealed bid Invitation) or contract award (in the case of a negotiated Invitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the Bidder to induce any other concern to submit or not to submit a bid for the purpose of restricting competition.

b. Each signature on the bid is considered to be a certification by the signatory that the signatory -

(1) Is the person in the Bidder's organization responsible for determining the prices being offered in this bid or offer, and that the signatory has not participated and will not participate in any action contrary to subparagraphs a.(1) through a.(3), above; or

(2)(i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs a.(1) through a.(3), above

(insert full name of person(s) in the Bidder's organization responsible for determining the prices offered in this bid or offer, and the title of his or her position in the Bidder's organization);

(ii) As an authorized agent, does certify that the principals named in subdivision **b.(2)(i)**, above, have not participated, and will not participate, in any action contrary to subparagraphs **a.(1)** through **a.(3)** above; and

(iii) As an agent, has not personally participated, and will not participate, in any action contrary to subparagraphs **a.(1)** through **a.(3)**, above.

c. If the Bidder deletes or modifies subparagraph **a.(2)** above, the Bidder must furnish with its bid a signed statement setting forth in detail the circumstances of the disclosure.

I.4 Certification Regarding Debarment, Suspension, Proposed Debarment, Environmental Compliance and Other Responsibility Matters (JUL 97)

a. (1) The Bidder certifies, to the best of its knowledge and belief, that -

(i) The Bidder and/or any of its Principals -

(A) Are (____) are not (____) presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(B) Have (____) have not (____), within a three-year period preceding this bid, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of bids; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property; and

(C) Are (____) are not (____) presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in subdivision **a.(1)(i)(B)** of this provision.

(D) Are ____ are not ____ presently indicted for or otherwise criminally or civilly charged by a Federal, state or local entity with violation of any environmental laws;

(E) Have ____ have not ____ within the three-year period preceding this bid, been convicted of or had a civil judgment rendered against them for violation of a Federal, state or local environmental statute or regulation.

(ii) The Bidder has (____) has not (____), within a three-year period preceding this bid, had one or more contracts terminated for default by any Federal agency.

(2) "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

(3) If the Bidder answers affirmatively to **a.(1)**, above, the Bidder shall include in its bid an explanation of the circumstances, including the outcome.

This certification concerns a matter within the jurisdiction of an agency of the United States and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under section 1001, title 18, United States Code.

b. The Bidder shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Bidder learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

c. A certification that any of the items in paragraph **a.** of this provision exists will not necessarily result in withholding of an award under this Invitation. However, the certification will be considered in connection with a determination of the Bidder's responsibility. Failure of the Bidder to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Bidder nonresponsible.

d. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph **a.** of this provision. The knowledge and information of a Bidder is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

e. The certification in paragraph **a.** of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Bidder knowingly rendered an erroneous certification, in addition to the other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this Invitation for default.

DLA-COBALT-CATHODES 001
Amendment-004

**J.1 Certificates of Analysis and
Purchase Specifications (JUL 00)**

COBALT SHIPMENT ANALYSIS CERTIFICATE

ZCCM LOT NO.	2099	2100	2101	2102	2103	2104	2105	2106
DRUM NO.	<u>1-16</u> 128	<u>17-32</u> 128	<u>33-48</u> 128	<u>49-64</u> 128	<u>65-80</u> 128	<u>81-96</u> 128	<u>97-112</u> 128	<u>113-128</u> 128
ELEMENT								
Ni%	0.28	0.24	0.27	0.25	0.28	0.28	0.31	0.30
Fe ppm	27	25	21	24	26	29	47	18
Mn ppm	L5	L5	L5	L5	L5	L5	L5	L5
Cu ppm	10	15	9	14	13	12	17	17
Pb ppm	L2	L2	L2	L2	L2	L2	L2	L2
Zn ppm	L2	L2	L2	L2	L2	L2	2	2
Si ppm	L10	L10	L10	L10	L10	L10	L10	L10
Al ppm	L5	L5	L5	L5	L5	L5	L5	L5
S ppm	16	8	10	10	11	12	15	13
C ppm	61	51	55	51	61	44	65	74
H ₂ ppm	0.6	0.5	0.3	0.5	0.4	1.0	0.4	0.4
O ₂ ppm	48	49	48	58	47	47	46	59
Bi ppm	L0.5	L0.5	L0.5	L0.5	L0.5	L0.5	L0.5	L0.5
As ppm	L1	L1	L1	L1	L1	L1	L1	L1
N ₂ ppm	L5	L5	L5	L5	L5	L5	L5	L5
Sb ppm	0.7	0.7	0.6	0.8	0.5	0.5	0.5	0.5
P ppm	L10	L10	L10	L10	L10	L10	L10	L10
Sn ppm	L5	L5	L5	L5	L5	L5	L5	L5
Se ppm	L2	L2	L2	L2	L2	L2	L2	L2
Ag ppm	L2	L2	L2	L2	L2	L2	L2	L2
Zn+Cd ppm	13	19	13	19	15	16	16	18

DATE: 10 May 1984

HEAD OF ANALYTICAL SERVICES: P. R. TREBESS

By
P. R. TREBESS

PRINCETON SERVICE CENTER

U.S. Route 1
609-452-9050
TLX84-3492



P.O. Box 3108, Princeton, N.J. 08540

DATE: 8-15-84

JOB NO. 1785

AUTHORIZATION: verbal

SAMPLE: cobalt

TO: General Services Administration
Federal Property Resources Service
Office of Stockpile Management
ATT: Quality Assurance Division
18th & F Sts., (Room 5203)
Washington DC 20405

REPORT OF ANALYSIS

GS0083-DoxC-0014

Cobalt, broken cathodes grade B

14-13-B

Sampled 8-84

Binghamton NY

Princeton Testing Laboratory GS-00-DM-(S)-84032

Concentration, %

Cobalt		99.73 <i>revised 10-9-84</i>
Nickel		99.62 (by difference)
Iron		.37
Manganese		.0037
Copper		.0002
Lead	<	.0013
Zinc	<	.0001
Silicone		.0002
Aluminum		.0005
Carbon	<	.001
Sulfur	<	.01
Hydrogen		.001
Oxygen		.0004
Nitrogen		.0058
Bismuth	<	.001
Arsenic	<	.00005
Antimony	<	.0003
Phosphorus	<	.0001
Tin	<	.0001
Selenium	<	.0001
Silver	<	.0001
Zinc & Cadmium	<	.0001

Ronald McCloskey
Ronald McCloskey, Manager
Inorganic Laboratory

William F. Pickup, Director

RM:nm

VAC AIR

ALLOYS
CORPORATION

BOX 650 • FREWSBURG, NEW YORK 14738 • TELEPHONE 716/664-4910 • TELEX 91-528

September 27, 1984

General Services Administration - FPRS
Office of Stockpile Management
Director, Quality Assurance Division (DMI)
18th and F Streets, NW Room 5224
Washington, DC 20405

Report on Analyses of Four (4) Samples Cobalt Broken Cathodes

Requestor: GSA/FPRS Office of Stockpile Management
Contract No. GS-00-SM-(S)-84035

Contractor: Vac Air Alloys Corporation

Phase/Series: 4/27
Lab Identifier: 94C550
GSA Designation: Lot 11, Sample 14-11-A

Results:

Cobalt (Co) 99.70%

Phase/Series: 4/28
Lab Identifier: 94C551
GSA Designation: Lot 12, Sample 14-12-A

Results:

Cobalt (Co) 99.75%

Phase/Series: 4/29
Lab Identifier: 94C552
GSA Designation: Lot 13, Sample 14-13-A

Results:

Cobalt (Co) 99.73%

continued...

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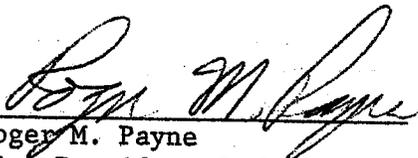
Phase/Series: 4/30
Lab Identifier: 94C553
GSA Designation: Lot 14, Sample 14-14-A

Results:

Cobalt (Co) 99.70%

Approximately 6.5 lbs. of crushed cathode was induction melted under a positive pressure of Argon.

I hereby certify these analyses to be true and accurate to the best of our knowledge.


Roger M. Payne
Vice President-Technical Director

RMP:nlo

COBALT SHIPMENT ANALYSIS CERTIFICATE

ZCCM LOT NO.	2107	2108	2109	2110	2111	2112	2113	2114
DRUM NO.	<u>1-16</u> 128	<u>17-32</u> 128	<u>33-48</u> 128	<u>49-64</u> 128	<u>65-80</u> 128	<u>81-96</u> 128	<u>97-112</u> 128	<u>113-128</u> 128
ELEMENT								
Ni%	0.30	0.34	0.30	0.30	0.30	0.30	0.31	0.31
Fe ppm	32	27	51	22	23	38	51	46
Mn ppm	L5	L5	L5	L5	L5	L5	L5	L5
Cu ppm	18	12	13	10	11	17	21	26
Pb ppm	L2	L2	L2	L2	L2	L2	L2	L2
Zn ppm	2	2	2	L2	2	L2	2	3
Si ppm	L10	L10	L10	L10	L10	L10	L10	L10
Al ppm	L5	L5	L5	L5	L5	L5	L5	L5
S ppm	15	14	16	16	17	16	17	16
C ppm	48	58	51	46	55	50	44	59
H ₂ ppm	0.4	1.2	0.6	0.5	0.4	0.8	0.4	0.4
O ₂ ppm	57	81	59	54	80	63	50	47
Bi ppm	L0.5	L0.5	L0.5	L0.5	L0.5	L0.5	L0.5	L0.5
As ppm	L1	L1	L1	L1	L1	L1	L1	L1
N ₂ ppm	L5	5	L5	L5	5	L5	L5	L5
Sb ppm	0.5	L0.5	L0.5	L0.5	0.7	0.9	0.8	1.2
P ppm	L10	L10	L10	L10	L10	L10	L10	L10
Sn ppm	L5	L5	L5	L5	L5	L5	L5	L5
Se ppm	L2	L2	L2	L2	L2	L2	L2	L2
Ag ppm	L2	L2	L2	L2	L2	L2	L2	L2
Zn+Cd ppm	20	15	15	13	16	22	25	29

Original Signed

By

DATE: 17 May 1984

HEAD OF ANALYTICAL SERVICES:

P. R. TREBESS

PRINCETON SERVICE CENTER

U.S. Route 1
609-452-9050
TLX84-3492



P.O. Box 3108, Princeton, N.J. 08540

DATE: 8-23-84

TO: General Services Administration
Federal Property Resources Service
Office of Stockpile Management
ATT: Quality Assurance Division
18th & F Sts., (Room 5203)
Washington DC 20405

JOB NO. 1839

AUTHORIZATION: verbal

SAMPLE: cobalt

REPORT OF ANALYSIS

GS0083-DxxC-0014

Cobalt, broken cathides grade B
14-14-B

Sampled 8/84

Binghamton NY

Princeton Testing Laboratory GS-00-DM-(S)-84032

	Concentration, %
Cobalt	99.70 <i>sample 10-9-84</i>
Nickel	99.64 (by difference) •
Iron	.34
Manganese	.0048
Copper	.0002
Lead	.0012
Zinc	< .0001
Silicone	.0004
Aluminum	.0012
Carbon	.0015
Sulfur	< .01
Hydrogen	< .001
Oxygen	.0004
Nitrogen	.0073
Bismuth	.0006
Arsenic	< .00005
Antimony	< .0003
Phosphorus	< .0001
Tin	< .0001
Selenium	< .0001
Silver	< .0001
Zinc & Cadmium	< .0001
	.0015

Ronald McCloskey
Ronald McCloskey, Manager
Inorganic Laboratory

William F. Pickup, Director
RM:mm



VAC AIR

ALLOYS

CORPORATION

BOX 650 • FREWSBURG, NEW YORK 14738 • TELEPHONE 716/664-4910 • TELEX 91-528

September 27, 1984

General Services Administration - FPRS
Office of Stockpile Management
Director, Quality Assurance Division (DMI)
18th and F Streets, NW Room 5224
Washington, DC 20405

Report on Analyses of Four (4) Samples Cobalt Broken Cathodes

Requestor: GSA/FPRS Office of Stockpile Management
Contract No. GS-00-SM-(S)-84035

Contractor: Vac Air Alloys Corporation

Phase/Series: 4/27
Lab Identifier: 94C550
GSA Designation: Lot 11, Sample 14-11-A

Results:

Cobalt (Co) 99.70%

Phase/Series: 4/28
Lab Identifier: 94C551
GSA Designation: Lot 12, Sample 14-12-A

Results:

Cobalt (Co) 99.75%

Phase/Series: 4/29
Lab Identifier: 94C552
GSA Designation: Lot 13, Sample 14-13-A

Results:

Cobalt (Co) 99.73%

continued...

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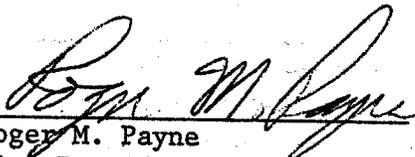
Phase/Series: 4/30
Lab Identifier: 94C553
GSA Designation: Lot 14, Sample 14-14-A

Results:

Cobalt (Co) 99.70%

Approximately 6.5 lbs. of crushed cathode was induction melted under a positive pressure of Argon.

I hereby certify these analyses to be true and accurate to the best of our knowledge.



Roger M. Payne
Vice President-Technical Director

RMP:nlo

COBALT SHIPMENT ANALYSIS CERTIFICATE

ZCCM LOT NO.	2131	2132	2133	2134	2135	2136	2137	2138
DRUM NO.	<u>1-16</u> 128	<u>17-32</u> 128	<u>33-48</u> 128	<u>49-64</u> 128	<u>65-80</u> 128	<u>81-96</u> 128	<u>97-112</u> 128	<u>113-128</u> 128
ELEMENT								
Ni%	0.31	0.31	0.29	0.32	0.33	0.29	0.28	0.29
Fe ppm	33	40	30	47	52	40	19	31
Mn ppm	5	5	L5	L5	5	L5	L5	L5
Cu ppm	15	14	17	19	14	11	14	13
Pb ppm	L2	L2	L2	L2	L2	L2	L2	L2
Zn ppm	L2	L2	L2	L2	L2	L2	L2	2
Si ppm	L10	L10	L10	L10	L10	L10	L10	L10
Al ppm	L5	L5	L5	L5	L5	L5	L5	L5
S ppm	18	20	19	14	18	18	19	17
C ppm	77	85	63	55	68	51	79	69
H ₂ ppm	0.9	1.2	1.1	0.6	0.6	0.7	0.4	0.4
O ₂ ppm	86	76	90	65	80	69	82	66
Bi ppm	L0.5	L0.5	L0.5	L0.5	L0.5	L0.5	L0.5	L0.5
As ppm	L1	L1	L1	L1	L1	L1	L1	L1
N ₂ ppm	L5	L5	L5	L5	L5	L5	L5	L5
Sb ppm	0.8	0.7	0.7	0.8	0.8	0.8	L0.5	0.6
P ppm	L10	L10	L10	L10	L10	L10	L10	L10
Sn ppm	L5	L5	L5	L5	L5	L5	L5	L5
Se ppm	L2	L2	L2	L2	L2	L2	L2	L2
Ag ppm	L2	L2	L2	L2	L2	L2	L2	L2
Zn+Cd ppm	22	20	22	23	19	19	19	17

Original Signed
By

DATE: 9 June 1984

HEAD OF ANALYTICAL SERVICES: P. R. TREBESS

PRINCETON SERVICE CENTER

U.S. Route 1
609-452-9050
TLX84-3492



P.O. Box 3108, Princeton, N.J. 08540

DATE: 11-6-84

JOB NO. 2268

TO: [General Services Administration
Federal Property Resources Service
Office of Stockpile Management
ATT: Quality Assurance Division
18th & F Sts. (Room 5203)
Washington, DC 20405]

AUTHORIZATION: verbal

SAMPLE: cobalt

REPORT OF ANALYSIS

GS0083-DxxC-0014
Cobalt, broken cathodes grade B
14-17-B
Sampled 10/23,24/84
Binghamton NY
Princeton Testing Laboratory GS-00-DM-(S)-84037

Concentration, %

Cobalt	99.66 (by difference)
Nickel	.32
Iron	.0042
Manganese	.0001
Copper	.0013
Lead	< .0001
Zinc	.0005
Silicon	.001
Aluminum	.001
Carbon	< .01
Sulfur	.003 * 0.0017% compare 12-2-84 <i>mm</i>
Hydrogen	.0002
Oxygen	.011
Nitrogen	.001
Bismuth	< .00005
Arsenic	< .0003
Antimony	< .0001
Phosphorus	< .0001
Tin	< .0001
Selenium	< .0001
Silver	< .0001
Zinc & Cadmium	.0017

Ronald McCloskey
Ronald McCloskey, Manager
Inorganic Laboratory

William F. Pickup, Director

VAC AIR ALLOYS CORPORATION

BOX 650 • FREWSBURG, NEW YORK 14738 • TELEPHONE 716/664-4910 • TELEX 91-528

December 4, 1984

General Services Administration - FPRS
Office of Stockpile Management
Director, Quality Assurance Division (DMI)
18th and F Streets, NW Room 5224
Washington, DC 20405

Report on Analyses of Two (2) Samples Cobalt Broken Cathodes

Requestor: GSA/FPRS Office of Stockpile Management
Contract No. GS-00-SM-(S)-84035

Contractor: Vac Air Alloys Corporation

Phase/Series: 4/31
Lab Identifier: 1140894
GSA Designation: Lot 17, Sample 14-17-A

Results:

Sulphur (S) .0017%

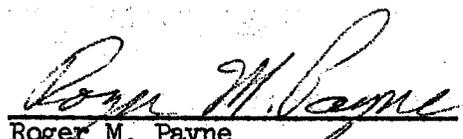
Phase/Series: 4/32
Lab Identifier: 1140893
GSA Designation: Lot 19, Sample 14-19-A

Results:

Sulphur (S) .0017%

Approximately 6.5 lbs. of crushed cathode was induction melted under a positive pressure of Argon.

I hereby certify these analyses to be true and accurate to the best of our knowledge.


Roger M. Payne
Vice President - Technical Director

RMP:nlo

COBALT SHIPMENT ANALYSIS CERTIFICATE

ZCCM LOT NO.	2139	2140	2141	2142	2143	2144	2145	2146
DRUM NO. ELEMENT	<u>1-16</u> 128	<u>17-32</u> 128	<u>33-48</u> 128	<u>49-64</u> 128	<u>65-80</u> 128	<u>81-96</u> 128	<u>97-112</u> 128	<u>113-128</u> 128
Ni%	0.31	0.30	0.31	0.33	0.31	0.31	0.32	0.31
Fe ppm	25	38	24	36	38	40	75	95
Mn ppm	L5	L5	L5	L5	L5	L5	L5	L5
Cu ppm	11	12	14	11	17	15	11	12
Pb ppm	L2	L2	L2	L2	L2	2	2	2
Zn ppm	4	5	3	3	3	2	2	4
Si ppm	L10	L10	L10	L10	L10	L10	L10	L10
Al ppm	L5	L5	L5	L5	L5	L5	L5	L5
S ppm	17	18	18	17	13	14	16	10
C ppm	62	65	80	79	66	57	67	70
H ₂ ppm	0.3	0.7	0.4	0.5	0.5	0.6	0.5	0.5
O ₂ ppm	71	73	70	77	80	55	48	47
Bi ppm	L0.5	L0.5	L0.5	L0.5	L0.5	L0.5	L0.5	L0.5
As ppm	L1	L1	L1	L1	L1	L1	L1	L1
N ₂ ppm	L5	L5	L5	L5	L5	L5	L5	L5
Sb ppm	0.6	0.7	0.8	0.9	0.6	1.4	1.3	1.2
P ppm	L10	L10	L10	L10	L10	L10	L10	L10
Sn ppm	L5	L5	L5	L5	L5	L5	L5	L5
Se ppm	L2	L2	L2	L2	L2	L2	L2	L2
Ag ppm	L2	L2	L2	L2	L2	L2	L2	L2
Zn+Cd ppm	16	19	17	14	20	18	15	15

Original Signed
By

DATE: 18 July 1984

HEAD OF ANALYTICAL SERVICES:

P. R. TREBESS

PRINCETON SERVICE CENTER

U.S. Route 1
609-452-9050
TLX84-3492



P.O. Box 3108, Princeton, N.J. 08540

DATE: Nov 6, 1984

JOB NO. 2268

AUTHORIZATION: verbal

SAMPLE: cobalt

TO: General Services Administrator
Federal Property Resources Service
Office of Stockpile Management
ATT: Quality Assurance Division
18th & F Sts., (Room 5203)
Washington DC 20405

REPORT OF ANALYSIS

GS0083-DxxC-0014
Cobalt, broken cathodes grade B
14-18-B
Sampled 10/23, 24/84
Binghamton NY
Princeton Testing Laboratory GS-00-DM-(S)-84037

Concentration, %

Cobalt	99.67 (by difference)
Nickel	.31
Iron	.0045
Manganese	.0001
Copper	.0038
Lead	< .0001
Zinc	.0007
Silicon	.001
Aluminum	.001
Carbon	< .01
Sulfur	< .001
Hydrogen	.0002
Oxygen	.010
Nitrogen	.001
Bismuth	< .00005
Arsenic	< .0003
Antimony	< .0001
Phosphorus	< .0001
Tin	< .0001
Selenium	< .0001
Silver	< .0001
Zinc & Cadmium	.0025

Ronald McCloskey
Ronald McCloskey, Manager
Inorganic Laboratory

William F. Pickup, Director

COBALT SHIPMENT ANALYSIS CERTIFICATE

ZCCM LOT NO.	2147	2148	2149	2150	2151	2152	2153	2154
DRUM NO.	<u>1-16</u> 128	<u>17-32</u> 128	<u>33-48</u> 128	<u>49-64</u> 128	<u>65-80</u> 128	<u>81-96</u> 128	<u>97-112</u> 128	<u>113-128</u> 128
ELEMENT								
Ni%	0.28	0.29	0.27	0.28	0.29	0.28	0.30	0.30
Fe ppm	47	55	38	52	64	55	32	19
Mn ppm	L5	L5	L5	L5	L5	L5	L5	L5
Cu ppm	14	18	25	25	24	28	22	17
Pb ppm	L2	L2	L2	L2	L2	L2	L2	L2
Zn ppm	L2	2	2	L2	2	L2	L2	L2
Si ppm	L10	L10	L10	L10	L10	L10	L10	L10
Al ppm	L5	L5	L5	L5	L5	L5	L5	L5
S ppm	12	12	13	11	12	10	10	10
C ppm	72	80	59	62	66	51	53	49
H ₂ ppm	1.4	0.5	0.5	0.5	0.3	0.6	0.3	0.6
O ₂ ppm	63	46	48	48	62	55	56	61
Bi ppm	L0.5	L0.5	L0.5	L0.5	L0.5	L0.5	L0.5	L0.5
As ppm	L1	L1	L1	L1	L1	L1	L1	L1
N ₂ ppm	L5	L5	L5	L5	L5	L5	L5	L5
Sb ppm	1.1	1.2	1.4	1.5	1.4	0.8	1.3	0.8
P ppm	L10	L10	L10	L10	L10	L10	L10	L10
Sn ppm	L5	L5	L5	L5	L5	L5	L5	L5
Se ppm	L2	L2	L2	L2	L2	L2	L2	L2
Ag ppm	L2	L2	L2	L2	L2	L2	L2	L2
Zn+Cd ppm	15	16	15	15	14	16	14	12

DATE: 20 July 1984

HEAD OF ANALYTICAL SERVICES:

Original Signed

By

P. R. TREBESS

PRINCETON SERVICE CENTER

U.S. Route 1
609-452-9050
TLX84-3492



P.O. Box 3108, Princeton, N.J. 08540

DATE: Nov 6, 1984

JOB NO. 2268

AUTHORIZATION: verbal

SAMPLE: cobalt

TO: General Services Administration
Federal Property Resources Service
Office of Stockpile Management
ATT: Quality Assurance Division
18th & F Sts., (room 5203)
Washington DC 20405

REPORT OF ANALYSIS

GS0083-DxxC-0014
Cobalt, broken cathodes grade B
14-19-B
Sampled 10/23,24/84
Binghamton NY
Princeton Testing Laboratory GS-00-DM-(S)-84037

Concentration, %

Cobalt	99.67 (by difference)
Nickel	.30
Iron	.0042
Manganese	.0001
Copper	.0018
Lead	< .0001
Zinc	.0005
Silicon	.001
Aluminum	.001
Carbon	< .01
Sulfur	.003 0.0017% sampled 12-7-84 <i>MM</i>
Hydrogen	.0002
Oxygen	.011
Nitrogen	.001
Bismuth	< .00005
Arsenic	< .0003
Antimony	< .0001
Phosphorus	< .0001
Tin	< .0001
Selenium	< .0001
Silver	< .0001
Zinc & Cadmium	.0018

Ronald McCloskey
Ronald McCloskey, Manager
Inorganic Laboratory

William F. Pickup, Director

VAC AIR

ALLOYS

CORPORATION

BOX 650 • FREWSBURG, NEW YORK 14738 • TELEPHONE 716/664-4910 • TELEX 91-528

December 4, 1984

General Services Administration - FPRS
Office of Stockpile Management
Director, Quality Assurance Division (DMI)
18th and F Streets, NW Room 5224
Washington, DC 20405

Report on Analyses of Two (2) Samples Cobalt Broken Cathodes

Requestor: GSA/FPRS Office of Stockpile Management
Contract No. GS-00-SM-(S)-84035

Contractor: Vac Air Alloys Corporation

Phase/Series: 4/31
Lab Identifier: 1140894
GSA Designation: Lot 17, Sample 14-17-A

Results:

Sulphur (S) .0017%

Phase/Series: 4/32
Lab Identifier: 1140893
GSA Designation: Lot 19, Sample 14-19-A

Results:

Sulphur (S) .0017%

Approximately 6.5 lbs. of crushed cathode was induction melted under a positive pressure of Argon.

I hereby certify these analyses to be true and accurate to the best of our knowledge.


Roger M. Payne
Vice President - Technical Director

RMP:nlo

NATIONAL STOCKPILE
 PURCHASE SPECIFICATION

Published by
 U.S. Department of Commerce

With Approval of
 Federal Emergency Management Agency

COBALT

I. DESCRIPTION

This specification covers refined cobalt metal suitable for use in the production of ferrous and nonferrous alloys and chemical compounds.

II. CHEMICAL AND PHYSICAL REQUIREMENTS

Each lot of cobalt metal purchased under this specification shall conform to the following chemical and physical requirements:

A. Chemical Requirements:

Percent by Weight

		Electrolytic Broken Cathodes		
		<u>Grade A</u>	<u>Grade B</u>	<u>Granules</u>
Cobalt (Co)	Min.	99.90	99.65	99.50
Nickel (Ni)	Max.	0.040	0.40	0.15
Iron (Fe)	Max.	0.004	0.01	0.14
Manganese (Mn)	Max.	0.0007	0.001	0.013
Copper (Cu)	Max.	0.0015	0.004	0.015
Lead (Pb)	Max.	0.0003	0.0005	0.001
Zinc (Zn)	Max.	0.0030	0.003	0.005
Silicon (Si)	Max.	0.0010	0.005	0.025
Aluminum (Al)	Max.	-	0.01	0.030
Sulfur (S)	Max.	0.0010	0.002	0.007
Carbon (C)	Max.	0.0050	0.01	0.010
Hydrogen (H ₂)	Max.	0.0003	0.001	0.001
Oxygen (O ₂) ²	Max.	0.0070	0.020	0.030
Bismuth (Bi)	Max.	0.0001	0.0001	0.0001
Arsenic (As)	Max.	0.0010	0.0010	0.0010
Nitrogen (N ₂)	Max.	0.0005	0.010	0.0005
Antimony (Sb)	Max.	0.0001	0.0005	-----
Phosphorus (P)	Max.	0.0005	0.005	-----

A. Chemical Requirements: (Cont'd)

		<u>Percent by Weight</u>		
		Electrolytic Broken Cathodes		
		<u>Grade A</u>	<u>Grade B</u>	<u>Granules</u>
Tin (Sn)	Max.	0.001	0.001	-----
Selenium (Se)	Max.	0.0005	0.0005	-----
Silver (Ag)	Max.	0.0005	0.0005	-----
Zinc (Zn) plus Cadmium (Cd)	Max	0.004	0.004	-----

B. Physical Requirements:

All cobalt metal shall be supplied in broken cathodes or granules. All material shall pass a screen with 2-inch square openings, and none shall pass a U.S. Standard Sieve No. 6. All material in any lot shall be approximately the same size.

NOTE: Other forms of cobalt may be considered if they meet each of the chemical requirements of any one of the cobalt types listed above.

III. PACKAGING, MARKING, IDENTIFICATION, AND SHIPPING

A. Packaging:

Cobalt metal shall be packed in new steel drums. The drum type, size, gauge, and finish shall be specified by the acquiring Government agency in the contract. The contract shall specify if palletization is required.

B. All markings shall be in English. Each drum shall have attached, adhesively, three aluminum tags 3 by 5 inches by 0.010 inch thick. Tags will be glued to each flat side of the cover and one to the side of the drum midway between the locking ring and the upper rolling hoop. Prepare the tags by embossing with information regarding the following items:

Cobalt
Name of Producer
Country of Origin
Name and Location of Mine (Including State or Province)
Month and Year Packed
Form
Gross and Net Weights
Government Contract Number
Lot Number and Drum Serial Number
(e.g., 1/20, 2/20, etc.)
The Notice "Duplicate Tag Inside Drum"
Purchase Specification Number and Date

The following procedures shall be used to affix tags:

1. Preform the tag to be attached to the side of the drum to the same curvature as the container so that the tag will adhere properly.
2. Use dry cleaning solvent, Federal Specification P-D-680, latest revision, to clean surface dirt and grease from those sections of the lid and drum to which tags are to be affixed.
3. Apply Class I stabilized chloroprene polymer adhesive (neoprene WRT), Federal Specification MMM-A-121, latest revision, to the sections described in III. B. above, and wait for sufficient time to elapse so that the bonding material becomes "tacky" enough to ensure proper adhesion before affixing the identification tags.

The marking shall not include a security classification or anything indicating National Stockpile ownership other than the contract number and purchase specification number and date.

C. Identification:

Appropriate identifying documents shall accompany each shipment.

D. Shipping:

All drums containing cobalt metal shall be loaded, braced, and blocked in the carrier's conveyance in compliance with the applicable rules and regulations set forth in the carrier's classifications and other tariffs. For rail shipments, the applicable rules and regulations (AAR) in Pamphlet Nos. 4 and 14, and Circular No. 42,

latest revision, shall be observed. All drums shall be carefully handled to prevent damage and ensure safe delivery.

IV. SAMPLING, INSPECTION, AND TESTING

Each lot of cobalt metal shall be subject to sampling, inspection, and testing by the Government or its designee.

J.2 Storage Locations (JUL 00)

Site	Days	Hours	Transportation Available
New Haven, IN	M - F	7:30 AM - 4:00 PM	Truck
Warren, OH	M - F	7:30 AM - 4:00 PM	Truck
Binghamton, NY	M - F	7:15 AM - 2:30 PM	Truck

Operations and Logistics Division Point of Contact:

Lance Kualii
Defense Logistics Agency
Defense National Stockpile Center
ATTN: DNSC-O
8725 John J. Kingman Road, Suite 4616
Fort Belvoir, VA 22060-6223
Telephone 703-767-7611